



Taking Care of Caribou

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

**Advisory Committee for Cooperation on Wildlife
Management**

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About the ACCWM

The Advisory Committee for Cooperation on Wildlife Management was established 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 committee consists of Chairpersons (or alternate appointees) of the Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, ʔehdzo Got'ìnè Gots'è Nákedì (Sahtú Renewable Resources Board), Wek'èezhìi Renewable Resources Board, Kitikmeot Regional Wildlife Board, and Tuktut Nogait National Park Management Board.

About this plan

The ACCWM decided to develop a plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds. While the immediate need for the plan was in response to reported declines in the herds, the intent is for the plan to address caribou management and stewardship over the long term. This plan was developed in consultation with most of the communities that harvest from the three herds. The ultimate goal is to ensure that there are caribou today and for future generations. The management goals are to maintain herds within the known natural range of variation, conserve and manage caribou habitat, and ensure that harvesting is respectful and sustainable. This Management Plan is a working document used in developing specific management tools such as Action Plans for Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou. Both the Management Plan and following Action Plans will be updated and revised as new information becomes available.

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1.0 Preamble

This plan is called *Taking Care of Caribou*. People of the Northwest Territories and Nunavut have an interest in wildlife as a natural resource and a responsibility for stewardship of wildlife and habitat. 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 histories.¹ Barren-ground caribou and the Aboriginal people of the North have a complex and ancient history – the abundance and health of the caribou have profoundly influenced the distribution, health and well-being of the people. Harvesting continues to be fundamental to the cultural, social, spiritual and economic well-being of many of the communities of the NWT and Nunavut.

Traditional harvesting practices that show respect for caribou help to keep a balance between harvesters and caribou. These traditional practices are a way of taking care of the caribou. However, elders recall times when caribou were scarce and people searched out other species – for some regions it was moose and for others it was fish. Their knowledge indicates that caribou populations have natural cycles.

Communities in the range of these three herds – the Cape Bathurst, the Bluenose-West, and the Bluenose-East – have been engaged for their input and knowledge. During community engagement meetings, 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 and finds a balance between the resources we use today and the resources we leave for future generations. A further challenge will be funding the implementation of the plan. As always, actions are limited by available funds and capacity.

“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....” (Délı̄në)



“It would be great to have elders advising decisions on the future of the caribou. We still rely on caribou because our ancestors really survived on it. Our ancestors had travelled all the way to the barren lands to harvest caribou for clothing”. (Behchokò)

¹ In this document the term ‘Aboriginal’ is intended to be inclusive of First Nations, Inuit and Métis people. This is in accordance with the definition used in the Constitution of Canada.

For decades, Aboriginal people have worked hard to settle their 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 for both the ability and the responsibility to manage wildlife. These land claim agreements also provide for ways that non-Aboriginal Canadians can participate in stewarding public resources such as caribou through co-management boards and public input into management decision making.

The results of scientific studies and observations by some caribou harvesters and elders indicate that barren-ground caribou herds in the western arctic declined in the early 2000s. Although there is no consensus on the extent or cause of the decline, all agree that caribou are an essential resource and central to the social, economic, cultural, and spiritual well-being of the local people. Considering what is at stake, it is important to have a plan to sustain these herds so we may have caribou for future generations.

The Advisory Committee for Cooperation on Wildlife Management (ACCWM), made up of six wildlife management boards, was established in 2008.² It 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. This plan was developed with involvement by the 17 communities, in six land claim areas, that harvest these caribou.

During the planning process, the Working Group heard many different voices and perspectives on caribou and the issues facing caribou herds and harvesters today. Throughout this plan there has been an effort to respectfully acknowledge, understand, and include these perspectives, in order to make the best decisions for the caribou. Because there was an interest to keep the written plan as concise as possible, two supporting documents are also available:

- An Environment and Natural Resources (Government of the Northwest Territories) companion document (“Technical Report on the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds”) that provides more detail on herd status and scientific research (referred to here as the ‘**Scientific Report**’); and
- A summary of information recorded during the community engagements (referred to here as the ‘**Community Report**’).

² Throughout the Plan ACCWM member boards are referred to as “wildlife management boards”. The term “wildlife managers” is inclusive of: Aboriginal, territorial and federal governments, land and resource management boards, wildlife management boards, Renewable Resources Boards, Renewable Resources Councils, Hunters and Trappers Committees and Organizations, and Regional Wildlife Organizations.

Each of the companion reports provides more detailed information on many of the topics discussed here. While it would be desirable to include more sources of traditional and local knowledge in the supporting materials, the community summary only includes information that was documented during the community engagement sessions, and does not represent a formal traditional knowledge study. This is work that remains to be done in all regions.

2.0 Background to this Plan

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



“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.”(Délı̄nᑭ)

“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)

2.1 Introducing the Plan

This plan describes:

- Principles and goals for taking care of the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds;
- The need for a plan and the importance of working together;
- Current population estimates and trends;
- Roles and responsibilities of the wildlife management boards;
- Information required to effectively take care of the herds;
- How to make management decisions that can impact herds;
- A framework for determining what management actions should be taken; and
- How to communicate with communities, harvesters, youth, and others.

In the interest of keeping the plan itself concise, a series of appendices – providing further information – are included at the end of this document. In addition, separate Action Plans implementing this Management Plan will also be available for each of the herds.

Overall, the Management Plan is conceived and written using a flexible approach, meaning that as new information becomes available, it may change which management decisions are made and implemented. The document is structured to provide both community and scientific perspectives throughout – including both scientific references and comments recorded during community engagements. Comments included here are not necessarily representative of a group or community, but only represent the view of individuals who spoke during engagements. After each quotation, the community in which the comment was recorded is given.

Some of the topics are controversial and finding agreement between different perspectives can be challenging. In these cases, we have summarized the differing points of view in a 'Hot Topic Box', and indicated how the ACCWM decided to move ahead while attempting to take into account these perspectives.

2.2 Working Together Now and Into the Future

Communities in many areas of the NWT and Nunavut have long-considered themselves stewards of the caribou. Today, responsibilities for the management of wildlife stem from settled land claims. Modern treaties give Aboriginal groups a significant say in land and resource management. They also clarify how parties will work together when making decisions related to resources. They rely on co-management – an approach in which Aboriginal, territorial federal, and public governments share authority and decision-making in the management and stewardship of resources.

In the NWT, wildlife management boards act as the regional authority for wildlife management when defined in settled land claims agreements. Membership of these organizations is typically comprised of members nominated by the federal, territorial and regional Aboriginal government and appointed by the federal government; appointments to the Wek'èezhii Renewable Resources Board (WRRB) are made by each party in consultation with the other parties. In the Inuvialuit Settlement Region (ISR), this co-management role is fulfilled by the Wildlife Management Advisory Council (NWT). This Council and the Gwich'in, Sahtú and Wek'èezhii Renewable Resources Boards act in the public interest to manage wildlife in their respective regions. They typically work closely with local councils which represent Aboriginal and local community interests in wildlife management. In the Gwich'in and Sahtú regions, the Boards work with local Renewable Resources Councils (RRCs). In the ISR, community Hunter and Trapper Committees (HTCs) and the Inuvialuit Game Council help fulfil this role. The Tłı̨chǫ Agreement provides the Wek'èezhii Renewable Resources Board with authority to consult with Tłı̨chǫ communities as well as the Tłı̨chǫ Government, other governments and the public.

Tuktut Nogait National Park is located within the ISR and Sahtú Settlement Area (SSA), in the northeast corner of mainland NWT and was created primarily to protect the Bluenose Caribou herd(s) and their calving and post-calving habitat. The Tuktut Nogait National Park Management Board advises on all aspects of park planning, operations and management and makes decisions by consensus. The board includes appointees from the federal and territorial governments, four Inuvialuit authorities, and from the Délı̨ne Land Corporation.

In other areas of the NWT without settled land claims Aboriginal governments may have or may share responsibility for wildlife management through arrangements with the various territorial governments.

In Nunavut, the Nunavut Land Claims Agreement also resulted in lands and resources co-management bodies. The Nunavut Wildlife Management Board (NWMB) is the wildlife management board that is the main regulator of access to wildlife resources and manages the way wildlife is used by Inuit and other residents in the Nunavut Settlement Area. The NWMB consists of nine members who are appointed according to region, as well as appointees from the federal and territorial governments. The NWMB works closely with Nunavut's three Regional Wildlife Organizations (RWOs) and the territory's 27 local Hunters and Trappers Organizations (HTOs). The Kitikmeot Regional Wildlife Board is the RWO that is responsible for the regulation of harvesting practices among the seven HTOs of the Kitikmeot Region.

The ACCWM was established 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 ACCWM³ consists of the Chairpersons (or alternate appointees) of:

- Wildlife Management Advisory Council (NWT) (WMAC (NWT));
- Gwich'in Renewable Resources Board (GRRB);
- ʔehdzo Got'Inę Gots'ę Nákedı (Sahtú Renewable Resources Board (SRRB));
- Wek'èezhii Renewable Resources Board (WRRB);
- Kitikmeot Regional Wildlife Board (KRWB); and
- Tukut Nogait National Park Management Board (TNNPMB).

The ACCWM decided to develop a plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds.⁴ While the immediate need for the plan was in response to reported declines in the herds, the intent is for the plan to address caribou management and stewardship over the long term. The ACCWM identified the need to:

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

³ The Dehcho First Nations organization is part of the Working Group. There is an outstanding invitation for them to join the ACCWM. The Nunavut Wildlife Management Board was a member of the ACCWM from 2008-2014 but withdrew as a member before completion of the Management Plan.

⁴ There is a Memorandum of Understanding for Cooperation on Wildlife Management that outlines the mandate and process for cooperation among ACCWM parties. It is available from ACCWM members.

A previous co-management plan for the 'Bluenose caribou herd' was prepared in 2000. It also had extensive community and co-management board involvement from NWT and Nunavut, as well as the territorial governments. However, while it was used as a guiding document by ENR, the plan was never fully endorsed or implemented. The previous plan also distinguished between the Cape Bathurst, Bluenose-West and Bluenose-East caribou herds within one management plan. That plan was based on a management cooperation agreement for the three herds signed in 2000 by WMAC (NWT), GRRB, SRRB, TNNPMB and acknowledged by the GNWT and Parks Canada. This agreement was followed by a decision in 2005 by these parties to continue to manage as three herds based on information current at that time, while also recognizing that there may be a need to review the decision in future based on new information or considerations. These agreements and decisions helped to lay the foundation for the management framework of this plan, under the direction of the ACCWM.

As was clearly heard in community engagement meetings, people expect government and the wildlife management boards to work together, and with the communities, to ensure that there are caribou for future generations.

The ACCWM established a Working Group 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 for these herds and their habitat.

The Bluenose Caribou Management Plan Working Group consists of representatives of:

- Wildlife Management Advisory Council (NWT);
- Gwich'in Renewable Resources Board;
- Ɂehdzo Got'Inę Gots'ę Nákedı (Sahtú Renewable Resources Board (SRRB));
- Wek'èezhii Renewable Resources Board;
- Kitikmeot Regional Wildlife Board;
- Kugluktuk Hunters and Trappers Association;
- Dehcho First Nations;
- Tuktut Nogait National Park Management Board;
- Tłıchq Government;
- Environment and Natural Resources (ENR), GNWT;
- Department of the Environment, Government of Nunavut;

- Nunavut Wildlife Management Board (NWMB); and
- Parks Canada.

The original Terms of Reference set up to guide the actions of the Working Group are outlined in **Appendix B**; a revised Terms of Reference is being developed for future Working Group work on Action Plans and Management Plan revisions. The mandates and website addresses for each of the Working Group members are included in **Appendix C**, along with a list of relevant land claim chapters or articles that refer to land and resource management responsibilities. Once the Working Group had finalized the Management Plan, it was submitted to the ACCWM for review. After this assessment, each co-management board of the ACCWM then followed their individual procedures as laid out in their respective land claim for review and approval of the final plan. After consideration and acceptance by the Ministers, the approved plan is to be implemented by the signatories to the plan and responsible governments.

3.0 How the Plan Was Put Together

This plan was developed in consultation with most of the communities that harvest from the three herds. Because these herds are shared across jurisdictions and among many communities, it is very important that everyone works together. It was necessary to seek the experience, input, and advice of all regions and communities. **Round 1** engagements were held in communities in the Inuvialuit, Gwich'in, Sahtú, and Kitikmeot regions in 2009 and 2010. These engagements were intended to:

- Share the best available information on the status of the herds, including scientific information, traditional knowledge, and harvester observations.
- Identify the key issues and concerns for each community, 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.

In **Round 2** engagements (2011), the draft plan was taken back to the communities for review, and attention was brought to management actions and thresholds for review and comment. There were no Round 1 engagements in the Tłıchq communities at the request of the Tłıchq Government, as the communities were undergoing a consultation on the Bathurst caribou at that time. Instead, Round 2 engagements included information that was discussed with other regions in Round 1, as well as presenting the information in the draft plan. No Round 1 or Round 2 engagements occurred in the Dehcho Region. While it was hoped that organizations and the public would be able to participate in the process, it was not possible to arrange the necessary meetings and presentations with the Dehcho First Nations.

During the review process of the second or revised draft plan (**Round 3**), members of the public were invited to comment on the draft (2011-2013). Major phases of developing the Management Plan are shown in **Figure 1**.

“Use traditional knowledge [to develop the management plan] – it’s very important to our way of hunting.”
(Fort McPherson)



“It is great with the help of elders and communities, with agencies – we probably could revive the herd in no time.”
(Whati)

“Local knowledge should be included with TK and science [in this plan].” (NWT Wildlife Federation)

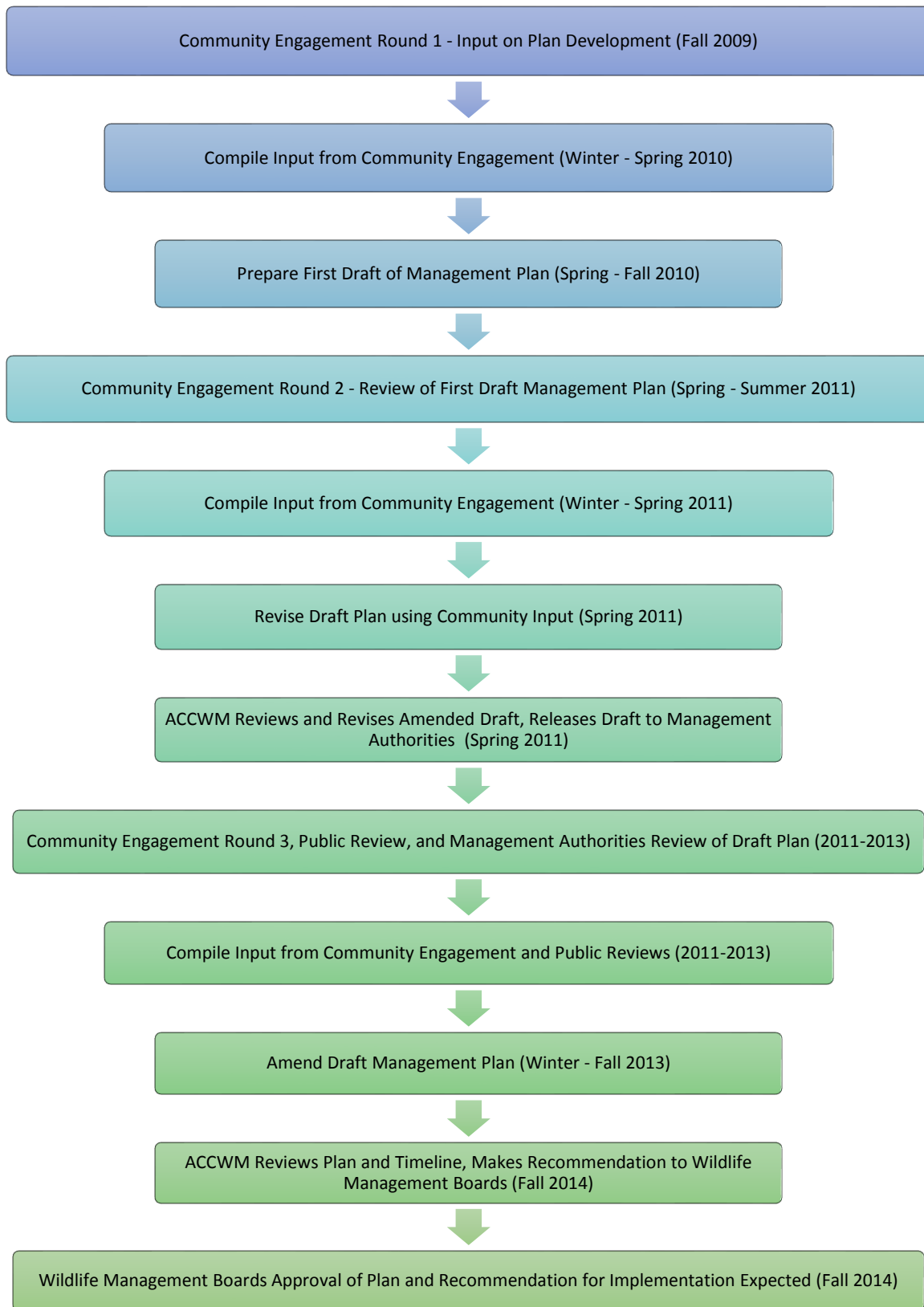


Figure 1: Flow chart showing major steps in developing the Management Plan.

In addition to the communities and regions engaged in Rounds 1 and 2, **Round 3** engagements included two meetings in the Dehcho Region; in January 2012 meetings were held with Pehdzeh Ki First Nation in Wrigley and the Liidlii Kue First Nation Harvester's Committee (Denedeh Resources Committee) in Fort Simpson to review the draft plan.

In addition, public meetings were held to invite comments on earlier drafts. Other groups that use or have interest in the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds and their habitat were also invited to comment on the Management Plan at various stages during its development and the draft was made available to the public on the ENR website in June 2011. During the public review phase of the plan, ENR distributed the draft plan to more than 100 organizations (see **Appendix D**). Written input from the regional Renewable Resource Councils, the North Slave Métis Alliance, the Northwest Territories Métis Nation, and the Northwest Territories Wildlife Federation also helped to shape this plan. An inclusive, consensus-based approach was used throughout the process.

It was the responsibility of the individual ACCWM members to seek input from communities and regional organizations. As a result, the process differed somewhat between different areas and led to some overlaps in the timeline showing the major steps in developing the plan (**Figure 1**). In addition, ENR conducted public engagement sessions to receive input on the draft plan. Further details on the engagement and review process are available in **Appendix D**, as well as the companion **Community Report**.

4.0 What We Are Trying To Do With the Plan

“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)



“When I was chief in the past the herd was quite healthy. If we don’t try to revive the herd, who’s going to do it? We have to make a strong stand so we can be able to have good harvesting and monitoring.”
(Behchokò)

The ultimate goal of this plan is to ensure that there are caribou for today and for future generations. The management goals are to:

- Maintain herds within the known natural range of variation;
- Conserve and manage caribou habitat; and
- Ensure that harvesting is respectful and sustainable.

The ACCWM believes in the protection and promotion of values and practices that respect wildlife and traditional lands. Respectful practices include traditional harvesting practices such as taking only the amount needed, using all parts of the caribou, sharing harvests with others, caring for the land and water that is shared with the caribou, and passing on traditional methods and beliefs to the next generation. The plan reflects 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 and acceptable manner;
- Adequate habitat (quantity and quality) is fundamental to the welfare of the herds;
- Management decisions will be based on the best available information – including science, as well as traditional and local knowledge – 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 stewardship of the herds and their habitat. Shared use requires shared responsibility;
- Harvests will be allocated in a manner which respects Aboriginal harvesting rights and the sustainable harvesting limit, if any, of each herd;
- The impacts to caribou herds and their habitat must be anticipated and minimized;
- Harvesting is fundamental to the cultural, social, spiritual and economic well-being of the communities of the Northwest Territories and Nunavut.

Measures of success will include the implementation of appropriate management actions, having herds fall within the known natural range of variation, and all users being able to harvest within sustainable limits. Objectives will be achieved by monitoring and then implementing management actions that are appropriate for given population sizes and trends. These measures will provide direction to Government and other funders, and will help inform the GNWT Caribou Management Strategy for 2015-2020.

5.0 What Caribou Are We Talking About



Names for barren-ground caribou in the range of the Cape Bathurst, Bluenose-West and Bluenose-East herds include:

tuktut (Inuvialuktun and Inuit)

vadzaih (Teet'it and Gwichya Gwich'in)

ᐱekwé/ᐱepe/ᐱeda (Dene of the Sahtú Region)

ekwò (Tłı̨chò)

etthén (Dënesųłné)

nódi/nodi (South Slave Dene)

Barren-ground caribou occupying a large part of northern mainland NWT and western Nunavut are named by Inuit, Inuvialuit, Gwich'in, Dene and Métis peoples in their languages as a single kind of animal.⁵ Brief descriptions of the relationships between the people and the caribou of these regions can be found in the **Community Report**, as well as further details on how these understandings influence perceptions of management today.

As the federal government established a presence in the North and the number of newcomers increased, a new system of wildlife management was introduced. Scientific studies began to inform management decisions. From the 1960s to the 1990s scientists considered these barren-ground caribou a single herd and referred to them as the 'Bluenose caribou herd'. This name was based on a known calving ground near Bluenose Lake, located in the Kitikmeot Region of Nunavut near the NWT border. This lake is shown in **Figure 2**.

Since the mid-1990s, new scientific information and analyses have identified three distinct subpopulations, now known as the Cape Bathurst Herd, the Bluenose-West Herd, and Bluenose-East Herd within the range of the historical 'Bluenose' herd. The three herds were named after the traditional calving areas that they use in June. Information on distinct calving grounds, migration patterns, habitat use patterns, and affiliations of individuals help biologists and managers understand how caribou herds are structured. Further information about perceptions and definitions of caribou populations is included in a "Hot Topic Box" later in this section.

Figure 2 shows the annual ranges of these herds, including their respective calving areas.

⁵ While barren-ground caribou are named as one herd, there are also complex naming systems within that concept that demonstrate knowledge of social relationships within herds (e.g., words for bull, young bull, pregnant female, barren female, etc.)

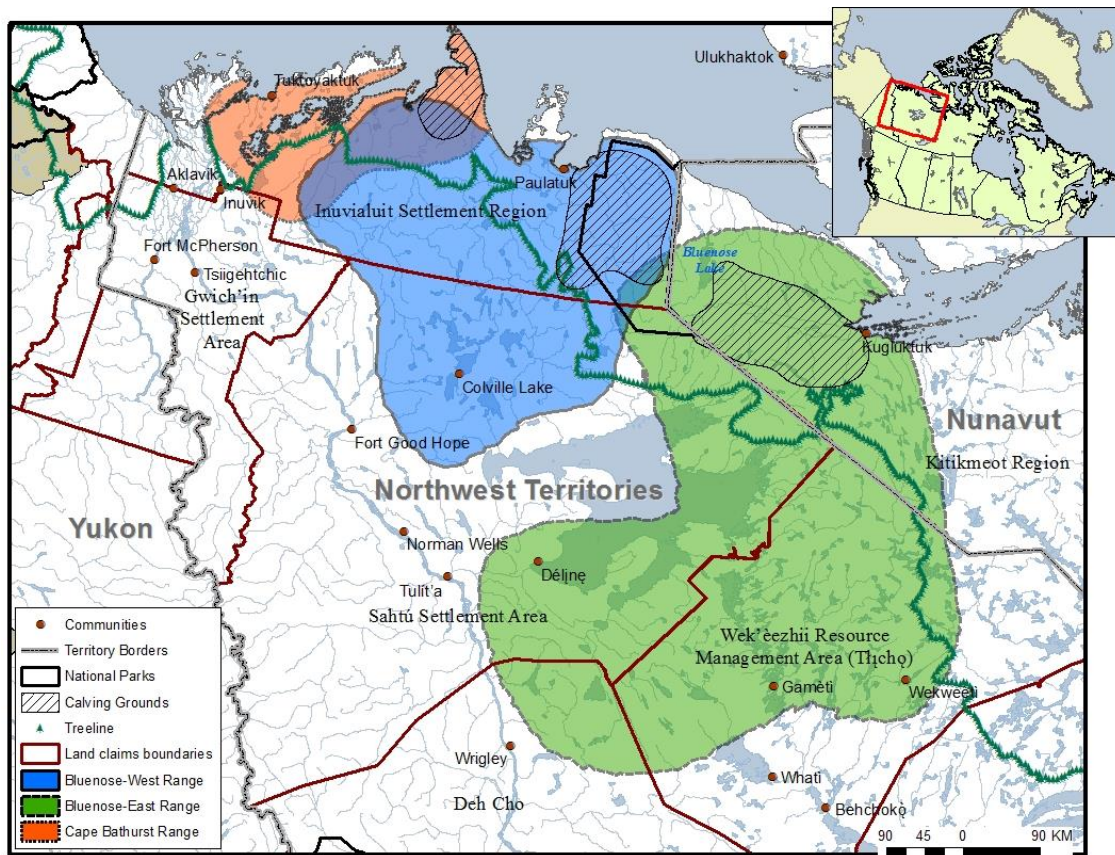


Figure 2: Overlapping annual herd ranges, based on data from collared cows between 1996 and 2008. Cross-hatched areas indicate calving grounds.⁶

After calving the caribou migrate southward, but each herd has a different pattern:

- Cape Bathurst: Cape Bathurst caribou calve on the Cape Bathurst Peninsula. After calving, they rut and winter inland on the tundra. They rut east of Husky Lakes, and winter in the Parson's Lake – Husky Lakes area and to the south.
- Bluenose-West: Bluenose-West caribou calve west of Bluenose Lake in Tuktu Nogait National Park and adjacent areas to the west. Collaring studies have shown that they migrate towards the treeline for the rut in October, and winter in the Anderson River and Colville Lake area.
- Bluenose-East: The Bluenose-East caribou calve east of Bluenose Lake in the headwaters of the Rae and Richardson rivers. Collaring studies have shown that like the Bluenose-West, these caribou also migrate towards the treeline for the rut in October, however they rut northeast of Great Bear Lake, and winter north, east, and south of Great Bear Lake.

⁶ Nagy, J., D. Johnson, N. Larter, M. Campbell, A. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in Arctic and sub-Arctic Canada. *Ecological Applications* 21(6), 2011: 2334-2348.

The population size and distribution of herds change over decades. The herd ranges shown in **Figure 2** are based on twelve years of tracking collared caribou cows within each herd. Bulls have also been collared, and early analyses of these data also show that collared bulls in a herd tend to use the same herd range year after year. Collaring programs provide more detailed information on caribou distribution than was available in the past. Although the three herds have distinct calving grounds, their ranges during other times of the year may partially overlap. Data from satellite-collared cow caribou show how these herds may overlap at times (**Figure 3**).

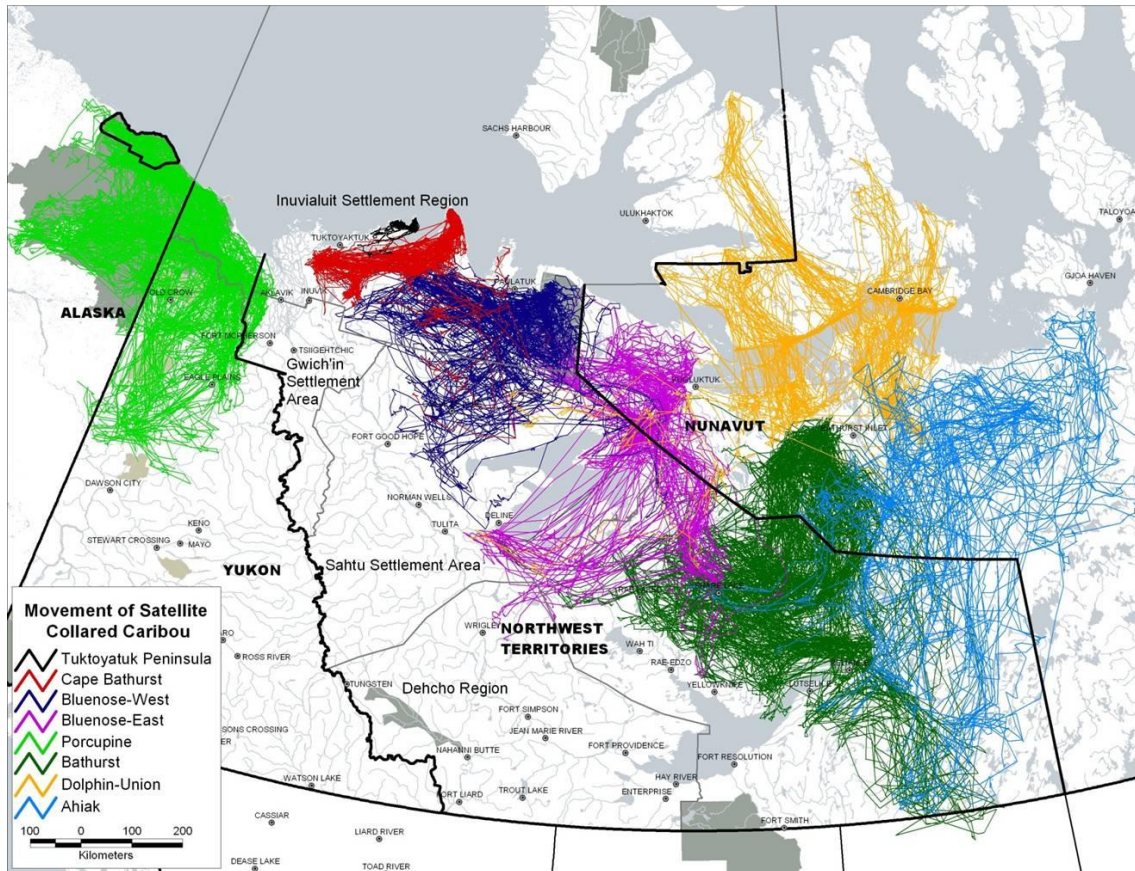


Figure 3: Movements of satellite-collared cow caribou in the Northwest Territories and portions of Nunavut, based on data collected between 1985 and 2007 (ENR-GNWT).⁷

Caribou of different herds may use the same land at the same time (e.g., Bluenose-East and Dolphin-Union herds may be found together in winter) or may use the same land at different

⁷ Figure 3 shows lines connecting point data from collars. The years and numbers of collared animals were as follows: Porcupine Herd – 1985 to 2001 (57 individuals); Tuktoyaktuk Peninsula Herd – 2006 to 2007 (6 individuals); Cape Bathurst Herd – 1995 to 2007 (32 individuals); Bluenose-West Herd – 1995 to 2007 (45 Individuals); Bluenose-East Herd – 1995 to 2007 (29 individuals); Bathurst Herd – 1996 to 2006 (68 individuals); Dolphin-union Herd – 1999 to 2004 (23 individuals); Ahiak Herd – 2001 to 2006 (28 individuals).

times (e.g., Bluenose-West herd uses an area south of Tukturnogait National Park during spring migration, while Bluenose-East herd uses that area after calving). In some areas herd ranges overlap with boreal woodland caribou and reindeer. The amount of overlap can also change from year to year in both these cases. Seasonal overlap in herd ranges creates challenges in allocating appropriate harvest levels for each herd. As the overlap between herds can change from year to year, several communities harvest from more than one herd. Because of this, and because different land owners and wildlife management regimes have responsibilities for these herd ranges, a coordinated approach to management is required.

Hot Topic: Defining Caribou Herds

There are some differences in perspective about how best to define caribou herds for management purposes. Some Aboriginal harvesters and elders in community engagement sessions have made the case that 'caribou are caribou', and there are no real differences between some barren-ground caribou herds. On the other hand, based on recent scientific studies, wildlife managers in the NWT and Nunavut now recognize three distinct herds within the Bluenose range.

For the purposes of co-operative caribou management, the members of the ACCWM agreed to write one Management Plan that addresses the entire area of the three herds. Three associated Action Plans that provide specific management directives – for the Cape Bathurst, Bluenose-West, and Bluenose-East herds – are also being developed.

The ACCWM feels that considering the status of each of the herds, and considering current best practices in science-based management, this is the course of action that will best uphold principles of conservation, such as the precautionary principle. Scientific research about relationships among caribou herds is ongoing, and in combination with traditional knowledge may eventually give rise to new management approaches. Both science and TK recognize that throughout the evolutionary history of these caribou large scale shifts of ranges and calving grounds have occurred. Further research into genetic variation and into how herds use the land over time will help us understand how populations are defined and how they interact. There is more information on these topics in the ***Scientific Report*** and the ***Community Report***.

6.0 Who Harvests These Caribou

“My grandfather says that we were once caribou and caribou were once people. We switched when there was starvation. There are a lot of stories. In the past, not too long ago, some years there was no caribou, no meat.” (Colville Lake)



“I was raised on the land and grew up with the caribou. I was taught how to look after my hunting and take what I have to. I was taught on the land. The caribou is a really sensitive animal and we do respect it.” (Behchokò)

Due to their large range, these caribou cross through many cultural and political areas over the course of the year and are commonly harvested by Aboriginal and non-Aboriginal harvesters in the NWT and Nunavut. There are longstanding relationships among these peoples that have formed the basis for sustainable harvesting protocols. Some additional information on traditional and community knowledge of caribou, including ways of respecting and supporting caribou, can be found in the **Community Report**. The herds harvested by each community in the Northwest Territories and Nunavut are summarized below.

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

The Bluenose-West herd usually migrates through three settlement areas/regions and is typically harvested by 13 communities (**Figure 2**): Aklavik, Fort McPherson, Tsiigehtchic, Inuvik, Tuktoyaktuk, Paulatuk, Colville Lake, Fort Good Hope, Norman Wells, Tulít’a, Délıne, Sachs Harbour, and Ulukhaktok.⁸

The Bluenose-East herd usually migrates through four settlement areas/regions in the Northwest Territories and into the western portion of the Kitikmeot Region, Nunavut. The herd is typically harvested by nine communities (**Figure 2**): Wrigley, Norman Wells, Tulít’a, Délıne, Whatı, Gamètı, Behchokò, Paulatuk, and Kugluktuk.

These caribou may also be harvested by people from other communities with rights or privileges to access the herds. For example, residents of Yellowknife historically harvested Bluenose-East caribou, and hunters may travel north from Fort Simpson, Łutselk’e, and other communities in the South Slave. Some herds have also been harvested by outfitters at times.

⁸ Harvesters from Ulukhaktok and Sachs Harbour were not engaged as part of this Management Plan. While these communities are provided tags, any remaining tags are usually reallocated by the Inuvialuit Game Council.

The locations and movements of the herds changes over time. Many long-term harvesters describe how herds that were once traditionally available for harvesting now migrate too far from the community to be accessible and harvested economically.

Since the introduction of government regulations, there have been four categories of harvesting recognized in NWT and NU for each of the three herds – subsistence, resident, non-resident (i.e., outfitted), and commercial. However, after a series of community meetings in 2005/06, WMAC (NWT), the GRRB, and the SRRB recommended harvest restrictions to the ENR Minister. All resident, non-resident, and commercial harvesting stopped in March 2006 in the ISR and in October 2006 in both the GSA and the SSA. Resident and non-resident hunting last occurred in the Wek'èezhii (Tłıchq Region) in 2009.

7.0 How Well Are the Herds Doing

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



“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)

*“Caribou are now going to places where they shouldn’t go. The changes may not necessarily be man-made; effects from industry may be part of the answer but we really don’t know. Do you think it may have something to do with climate change?”
(Fort Good Hope)*

“[We are] concerned about the health of caribou.” (North Slave Métis Alliance)

Understanding changes in caribou populations can be difficult. However, traditional and scientific knowledge agree that caribou numbers generally fluctuate over decades – which is defined as a population cycle. The length of the phases varies, particularly the length of time that a population stays at a low level. Scientific evidence, the journals of missionaries and trading post managers, and traditional knowledge all suggest that barren-ground caribou populations go through cycles that are 30-60 years long.

The cycle itself is not ‘neat and tidy’, nor is the cycle the same each time or easily predicted. The causes for these past or current population cycles in caribou are not well understood, but likely result from several factors such as habitat quality and quantity, predator populations, climate, parasites and disease. Different management actions may be called for depending on the phase of the cycle.

7.1 Scientific Survey Results

Aerial surveys from 1992 to 2006 indicated a long-term decline in the Cape Bathurst and Bluenose-West herds. The 2009 and 2012 surveys showed the two herds to be stable but still low in relation to historic high numbers. The Bluenose-East herd declined from 2000 to 2006 but the 2010 survey showed the herd appeared to be increasing, however the 2013 results show the herd declining again. Between 2008 and 2011, recruitment in the three herds was good (above 30 calves per 100 cows) and health and condition as assessed by harvesters was better in the 2010/2011 season than in the previous three years. However, the recruitment rates for the Bluenose-East herd were low in 2012 and low for Cape Bathurst in 2013; recruitment rates for the Bluenose-West herd were not assessed in 2012 and 2013.

Most estimated population sizes reported in this plan were based on surveys of non-calf cows and bulls when they are found together after calving. Surveys done this way rely on a tool called the “Lincoln-Peterson method” which uses the survey data to calculate the population size.

Using the same survey and estimation method from year to year allows for a better comparison of trends across herds and years. However, the Lincoln-Peterson method is just one tool that can be used to calculate population size and may tend to underestimate herd numbers compared to some other methods. Better ways of estimating herd numbers that do not have this bias are being investigated for use. In 2010 ENR (GNWT) used three different methods of estimating the Bluenose-East herd population size: a calving ground survey was done for the Bluenose-East herd, and the total population size was estimated from the breeding females counted on the calving ground; and the results of a post-calving survey were analyzed using the “Rivest estimator” in addition to the Lincoln-Peterson method. This allowed for a comparison of the three survey methods.

Details on the status of each of the herds follow; further information can be found in the *Scientific Report* as well as the *Community Report*. The thresholds in the plan are currently based on historical highs and lows and many organizations, including ENR, requested clarity on how the thresholds were set. In order to address these comments, the Working Group required clarity from ENR about the pre-2000 estimates, and requested that ENR provide a statement that notes ENR’s confidence level in the pre-2000 population estimates for the three herds. ENR’s response to that request is in **Appendix E**.

Cape Bathurst Herd

The Cape Bathurst herd declined from an estimated high of approximately 20,000 non-calf caribou in 1992 to about 2,000 in 2005 and 2006 (**Figure 4**). The 2009 estimate showed the herd to be stable since 2006, but still low in relation to historic high numbers. The 2012 survey data indicated an estimated population size of 2,427 animals. This estimate is significantly higher than the 2009 estimate of 1,534 plus or minus 349 animals. Because all 24 collared Cape Bathurst caribou were found and photographed in 2012, the 95% confidence intervals for 2012 are equal to zero.

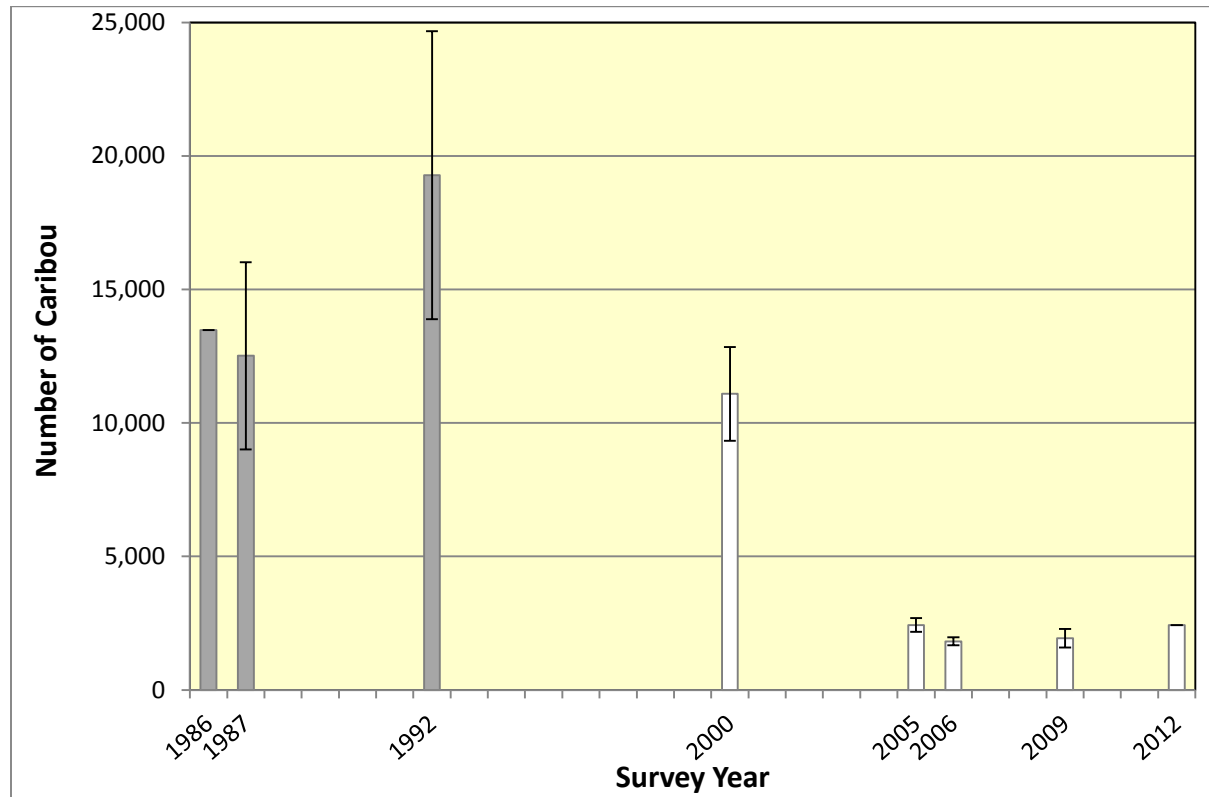


Figure 4: Cape Bathurst estimates, 1986-2012.

Note: There are two shades of colours used for the bars: prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. The reanalysed data are shown in the gray bars in Figure 5 for the Cape Bathurst herd. From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates were calculated with the Lincoln-Peterson method based on post-calving ground surveys and are shown with 95% confidence intervals.

Bluenose-West Herd

The Bluenose-West herd declined from an estimated high of over 110,000 non-calf caribou in 1992 to about 18,000 in 2005 and 2006 (**Figure 5**). The 2009 estimate showed the herd to be stable since 2006, but still low in relation to historic high numbers. In 2012, survey data for the Bluenose-West herd indicated an estimated population size of 20,465 plus or minus 3,490 animals (95% confidence intervals). The 2012 population estimate is not significantly different than the 2009 estimate.

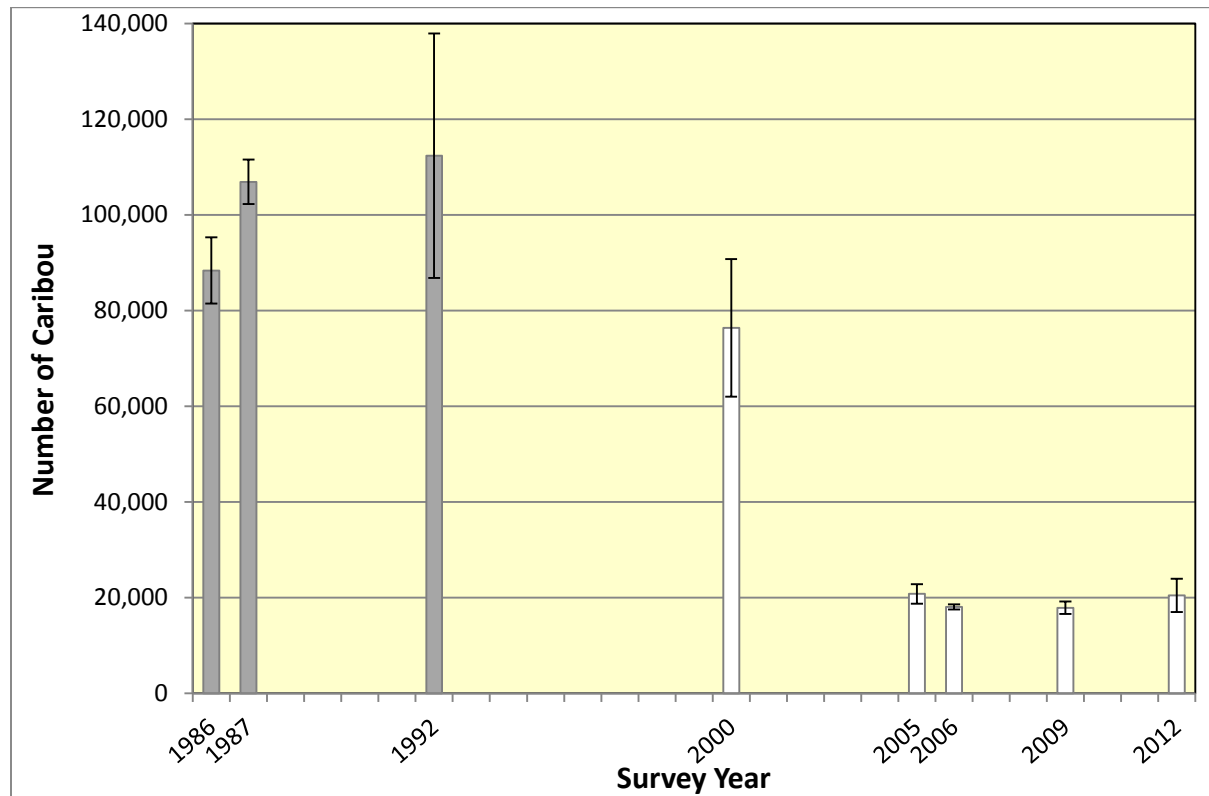


Figure 5: Bluenose-West estimates, 1986-2012.

Note: There are two shades of colours used for the bars: prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. The reanalyzed data are shown in the gray bars in Figure 5 for the Bluenose-West herd. From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates were calculated with the Lincoln-Peterson method based on post-calving ground surveys and are shown with 95% confidence intervals.

Bluenose-East Herd

The **Bluenose-East Herd** varied from an estimated herd size of about 120,000 non-calf caribou in 2000 to about 67,000 in 2006. The herd size increased by 2010 when it was estimated to be 122,697 plus or minus 31,756 animals (95% confidence intervals). This estimate was calculated using the Rivest method and is preferred for the 2010 post-calving survey and for 2010 overall by the survey authors rather than the Lincoln-Peterson estimate calculation of 98,646 plus or minus 7,125 (95% confidence intervals) that is shown in **Figure 6**. The 2012 post-calving survey for the Bluenose-East herd was unsuccessful due to poor weather. Survey results from June 2013 based on a calving ground survey indicated a decline in herd size to an estimated 68,295 caribou plus or minus 18,040 (95% confidence intervals).

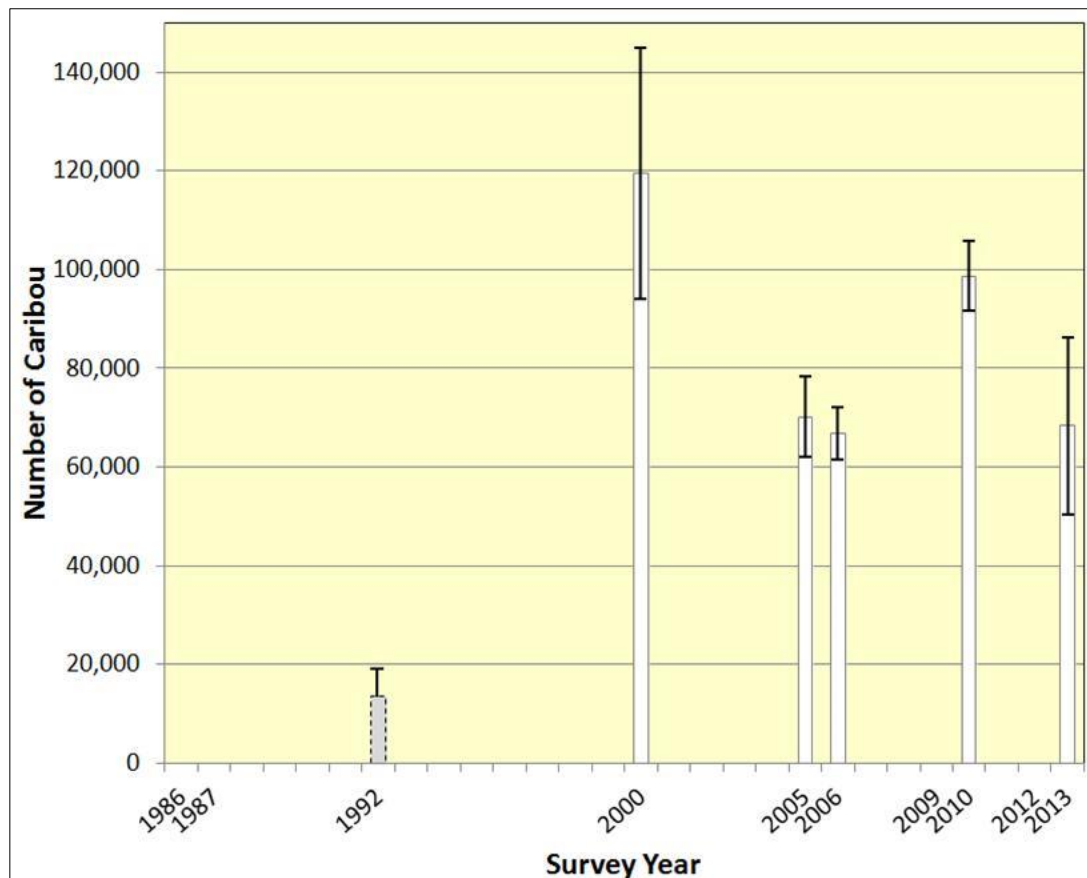


Figure 6: Bluenose-East estimates, 1986-2010.

Note: Prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. Of all caribou collared and areas surveyed, only six caribou were radio-collared in 1992 for the Bluenose-East herd; only five of those collared caribou were photographed and the Bluenose-East post-calving area was not extensively flown. This was insufficient to get a reliable estimate of the size of that herd, which is why the bar is dotted (data from the 2000 draft management plan). From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates shown in Figures 4 through 6, except 2013 in this figure, are from post-calving ground surveys using the Lincoln-Peterson estimate calculation. The population estimate from 2013 is from a calving ground survey, which is a different method that extrapolates from the number of breeding cows found on the calving ground, unlike the post-calving ground survey that photographs both cows and bulls in post-calving aggregations.

Further information on herd estimates can be found in the **Scientific Report**.

7.2 Community Observations

During the community engagements (2007-2013) observations about caribou population and distribution differed in different regions. While declines were reported in Fort Good Hope and

Kugluktuk, caribou were being seen more and more around Paulatuk, and people in Gamèti said that the population there had stabilized or was increasing. In Behchokò, there was possible indication of a large decline – elders said that a migration that used to take ten days took only two days in more recent years. For some communities the caribou had moved away and people were not seeing them as much. As a result, they couldn't say whether there had been a change in abundance. This was heard in parts of the Inuvialuit Settlement Region, the Gwich'in Settlement Area, the Sahtú Settlement Area and in Kugluktuk, Nunavut. In Wek' èezhii (Tłıchq Region) there were differing perspectives about whether caribou numbers had declined. No information was recorded on these topics for the Dehcho Region, as there were fewer opportunities for community engagement there.

Caribou harvesters and elders indicated that caribou do cycle in abundance and change where they go from time to time. Because these cycles occur over several decades, it is difficult for short-term scientific studies to see them. It is also difficult for surveys to see large scale changes in migrations. This means that it can sometimes look like there is a decline, but it is actually part of what are considered natural cycles and changes in movement patterns. It is natural for caribou to 'go away' for some time and then come back again. Generally, people observed that while caribou populations may go down at times, in the past, they have recovered on their own. A "Hot Topic Box" on the following page provides more information about exchange or movement between caribou herds.

Changes in population, distribution and migration can be driven by things like changes in habitat, human activities or weather patterns. In many places, people said that weather had become unpredictable, increased activity out on the land had affected caribou migrations, the timing of migrations had changed, and sometimes caribou were seen calving in unusual areas. However, it was also noted in several communities that in areas where human disturbance had decreased, caribou had moved back into those areas.

Since the 1970s, a change in distribution has happened around Paulatuk – caribou now stay around the community more in the fall and winter than they used to. They were reported to be there year-round during the time of the ISR community engagements (2009-2013). In the ISR, there were also observations that caribou were spending more time in the treeline and less time out on the tundra. Other distribution changes were noted, like in the Sahtú, where caribou were not seen in some of the places they used to be in the past, and recently they have been found further north and east than before. Délıne participants said that the timing of the migration had shifted to two weeks later in the fall. In Behchokò, migration timing may now also be one month later in the fall. In more than one region caribou were seen in smaller groups than in the past.

In most communities, people reported that fewer caribou were being harvested than in the past, whether due to harvest regulations, difficulty of the harvest, or changing traditions. However, though there is a possibility that harvest may be having less of an impact on caribou, other changes on the land – such as fire, mining exploration and development – had increased

and could be impacting caribou more than before. There is further information on these topics, as well as many other observations about changes in caribou, caribou habitat and harvesting, in the **Community Report**.

Hot Topic: Exchange or Movement between Caribou Herds

Traditional knowledge holders have suggested that large numbers of animals may be moving from one caribou herd to another. There is some scientific evidence that there is a degree of herd exchange or 'inter-herd movement' that can occur – for example, a cow may calve in a non-traditional or new calving area at times, and bulls have been known to wander long distances.

There is no current scientific evidence that herd exchange is widespread, occurs at high rates, or occurs when population levels are low or in decline. To date all scientific research indicates that this is a relatively rare event that only tends to occur when a herd is expanding its range. It is impossible to scientifically answer whether animals moved from the Bluenose-West to Bluenose-East herds between 1992 and 2000 because it was not possible to get an estimate of the Bluenose-East herd in 1992, and surveys were not conducted over most of what is now recognized as Bluenose-East range. Collared cows seem to trade calving grounds at a rate of about 3% (see further details in the **Scientific Report**).

An independent analysis of the available information found that "... no data support the competing hypothesis that all caribou should be treated as one herd, nor that mass movements between herds have demonstrably occurred." (Fischer et al. 2009: 18).* It went on to point out the following:

The precautionary principle requires that caribou management decisions should be based on the existing evidence suggesting a decline, until such time that more and better data are available to make definitive conclusions regarding barren-ground caribou populations. (Fischer et al. 2009:35)

While there are factors which make precise estimates of herd population levels difficult, the ACCWM is using the results of the aerial surveys among other available evidence as indicative of the changing status of these herds in recent years for the purposes of this Management Plan. The large changes in population levels of these herds are generally consistent with the trends of other circumpolar caribou. Managing land use and human activities on the basis of a decline in these herds is the wisest approach based on existing data and the precautionary principle. The ACCWM members acknowledge that this remains an unresolved issue at the present time, and that further research – especially genetic studies – can provide insight into relationships among caribou populations.

* Fischer, J.T., L.D. Roy, M. Hiltz. 2009. Barren-ground caribou management in the Northwest Territories: an independent peer review. Report prepared by the Alberta Research Council, Vegreville, AB. 53pp.

8.0 What and How We Monitor

Caribou herds can vary over time, with periods of abundance and periods of scarcity. The size of a herd and the health of its animals are influenced by factors that can work in combination, such that the total or cumulative impact may be different from that which occurs from each factor on its own. These impacts may be either positive or negative. Through carefully designed and research question-driven monitoring programs, communities and scientists can collect information about changes in the herds, and in ecological factors that affect caribou numbers and health. It is important to involve scientists, communities and industry to include the perspectives of both science and traditional knowledge in monitoring.

Monitoring is not a new concept to Aboriginal people, who have traditionally monitored both herds and socio-cultural practices related to harvesting. Some of the ways that communities monitor are through experience on the land and sharing those experiences. When hunting, people observe both caribou and harvesting practices, according to a number of criteria based on their traditional law. New information is interpreted in the context of stories and knowledge passed down through generations and shared within and across communities. From a community perspective, monitoring includes not just observations of caribou, but other discussions about what is taking place on the land, such as harvesting and sharing practices.

Scientific monitoring methods use representative samples of data to make inferences about populations. For example, collecting back fat measurements from individual animals can indicate herd health, and a systematic collection of photographs from a photo survey can help estimate herd numbers. Scientific methods also rely on ways of 'testing' or estimating the reliability of the information. Repeated estimates made from monitoring can help gauge the status of the population and of trends to inform management decisions. Timing of monitoring efforts may differ, depending on which questions are being asked, and other factors such as how well the herd is doing. Communities and scientists can cooperatively monitor caribou health and herds in many ways.

*"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)*



"There are other ways that the caribou are seeming to disappear. Late freeze-up causes deaths by falling through the ice. Are you monitoring these things?" (Gamètì)

*"...it would be useful to have something that encourages hunter feedback about where caribou are, and what condition they are in."
(Fort Simpson)*

People who are regularly on the land can provide specific information, such as observations of caribou movement patterns and health, as well as assist with sample collection, surveys, and detailed mapping information. Today, there are programs in parts of the NWT and Nunavut that rely on information collected by community members. For example, community members participate by presenting information and taking part in discussions, as well as other types of knowledge exchanges. Currently, this takes place during annual meetings of the Porcupine Caribou Management Board to determine herd status; through information gathered by the Arctic Borderlands Ecological Knowledge Co-op; and during community caribou monitoring programs as well as harvest monitoring programs, such as the Inuvialuit Settlement Region – Community-Based Monitoring Program and caribou-related projects supported by the NWT Cumulative Impacts Monitoring Program. New technology is also helping to further bridge the gap between scientific methods and traditional methods of monitoring. In the Nunavut Wildlife Management Board Community-Based Monitoring Network, traditional land users use hand-held devices to record harvests and observations while on the land. As a result, they can provide data in a format that can be used for decision-making and wildlife management.

Monitoring information, frequency, and ways of collecting information are described here, and summarized in **Table 1** at the end of section **8.0**.

8.1 Assessing Herd Status

At both the herd and individual caribou level, specific information is critical in assessing how well the herds are doing. This includes such factors as population size and trend, recruitment, bull-to-cow ratios, body condition and health. Beyond information on caribou at the individual and herd level, there is important ecosystem-level information that should also be considered. This can include factors such as predation, habitat quality and quantity, and disturbance due to human activity that may limit the herd's access to parts of its range. Long-term research and monitoring of these factors will allow management actions to be more proactive.

The topics presented here are based on scientific knowledge and traditional knowledge, and were developed and shared by participants during community engagement meetings used to develop this Management Plan.

8.1.1 Population Size – Number of Animals

A major factor used to assess how well the herds are doing, and a key consideration when recommending the harvest for a herd, is the estimated number of animals in a herd (population size). Biologists conduct aerial surveys of these herds by taking photographs either during or

soon after the calving period when the caribou are found close together or “aggregated”. The number of caribou in the photographs is determined and this is used to estimate the total number of adult caribou in the herd. Calves less than one year old are not included in the estimate of population size because of their high death rate experienced over the first year of life and due to difficulty counting them accurately from the photos. **Figure 7** includes an example of how scientists use aerial photos to count caribou. While photo surveys are commonly used, there are also other methods of counting caribou. Ways of counting using remote sensing are also currently being explored. Some issues around caribou collaring are described in a “Hot Topic Box” on the following page.

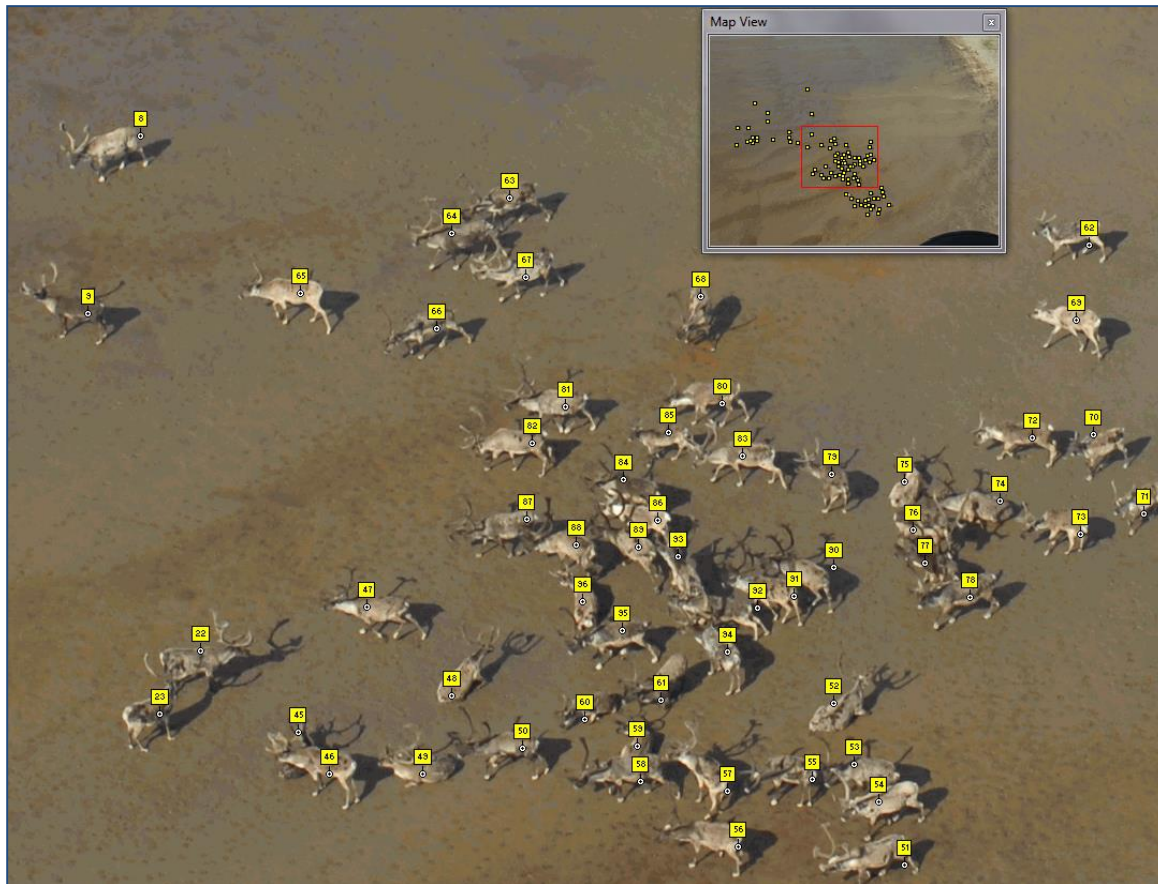


Figure 7: Picture showing how scientists may count caribou on aerial photographs. Groups of caribou are photographed and each group’s location is recorded. Afterwards, individual caribou in each located group are counted by marking every caribou in each photograph (yellow markers).

Community members and harvesters provide important information on herd size through observations and experiences with caribou on the land. These observations are often relative – comparing year-to-year and across the caribou’s range, through sharing information with other communities – for example, to understand if they are seeing changes in distribution or seeing a herd expanding or contracting its range.

Hot Topic: Caribou Collaring

Putting radio collars on animals like caribou can provide information that is currently impossible to get in other ways. Scientists have learned a lot about large scale caribou movements and ecology from this information.

Some of the criticisms of collaring are that it is stressful for the animals; it provides detailed information, but only from a small number of caribou in a herd; and it costs a lot of money. Communities suggest that it is important to limit the stress related to capture and wearing collars, particularly in the spring, when females are carrying calves. There may also be opportunities to collect supporting data through less invasive methods, like surveying caribou during their migrations at traditional water crossing sites.

For the management recommendations in this plan, the ACCWM acknowledges that there needs to be a balance between getting good scientific information and not overly stressing animals; that collaring caribou is just one way of gathering information; and that local knowledge can be incorporated in research methods to improve information while minimizing herd disruption.

8.1.2 Population Trend and Rate of Change

The trend or the rate of increase or decrease (decline) is also a key indicator of herd status. Trend can be determined by comparing herd size estimates over many years. When a population estimate is not possible, we can look at other data to help determine the trend, such as recruitment, body condition and health, and bull-to-cow ratio. Information on the trend of a caribou herd over the long term can be provided by traditional knowledge as observations of changes in abundance and distribution, which are often linked. For example, when caribou are at low numbers they often don't occupy all of the same areas as when they are abundant.

Female survival estimates can also help determine the trend and are important in interpreting recruitment and bull-to-cow ratios. This is discussed in more detail in the *Scientific Report*.

8.1.3 Productivity and Recruitment – How Calves are Doing

'Productivity' is the number of calves that are born. Scientists can look at the numbers of calves on calving grounds using aerial or ground-based surveys. They can also collect information on pregnancy rates from blood samples either taken by hunters or during capture work that is part of collaring.

'Recruitment' refers to the number of calves that survive to one-year of age and is evaluated in the spring based on the number of these calves per 100 cows. These ratios, while informative, are often difficult to interpret as they are influenced by changes in cow mortality (death rates) from year to year. Therefore it is important to have estimates of annual cow harvest in order to interpret recruitment rates as accurately as possible. Typically, recruitment rates are low before the number of animals in a herd begins to decline, whereas high recruitment rates, particularly several years in a row, may indicate an increase in herd size. Monitoring can be done by scientists and by harvesters who can provide information on the number of calves observed in relation to the number of cows.

Harvesters or other community members on the land can make observations of relative numbers of young caribou seen as compared to other years in the spring. They also notice the occurrence of twin foetuses or dry cows. These observations are another helpful way to gauge changing proportions of young caribou to adult caribou from year to year, especially when such information is shared across the distribution of the caribou's range.

8.1.4 Adult Composition – How Bulls and Cows are Doing

Part of monitoring overall herd structure is by looking at adult composition, or the number of bulls and cows. This helps determine if there are enough bulls to impregnate cows. It is important to establish a baseline and monitor when the herd is low and if a bull-dominated harvest is implemented. The natural death rate for male caribou is higher than that for females, so even in non-harvested herds there are usually fewer bulls than cows (see *Scientific Report*). This is not usually a concern, as bulls can mate with many cows within the same season.

Scientists do aerial and ground-based surveys during the rut to collect information on the numbers of bulls and cows. Harvesters or other community members make observations of relative numbers of bull and cow caribou seen as compared to other years, mostly during the fall.

8.1.5 Body Condition and Health

The health and condition of individual caribou can affect productivity and survival of calves and adults. The CircumArctic Rangifer Monitoring and Assessment Network (CARMA) has developed protocols for measuring body condition and health of caribou. The least intensive (Level 1) measurements can be easily done. Sample kits may be provided to harvesters to measure or collect: pregnancy information (presence of foetus), back fat thickness, left kidney and fat to assess contaminant levels and condition, body condition score, lower front teeth for age determination, and location, date and sex of the animal harvested. It is most useful to collect Level 1 measurements on an annual basis. Harvesters may also submit samples for disease and

parasite testing at any time to the responsible government agency. More intensive measurements (Level 2 or 3 protocols) of body condition and health, including disease and parasites, should be done by scientists and harvesters during a community hunt but on a less frequent basis (every three or five years).

Community members typically have an overall impression of the condition of caribou through harvesting, field dressing (skinning, gutting, etc.) and preparing or fixing the meat. Body condition information collected by community members, harvesters and scientists provides information about caribou health, which can be used as supporting evidence when predicting or confirming changes to the herd size and trend.

8.1.6 Harvest Levels and Practices

Harvesting has a direct impact on caribou numbers and accurate information on the harvest levels of all user groups is very important for making decisions and justifying management actions. Estimating how many animals are being taken out of a herd (e.g., through harvest and predation), is as critical as understanding how many animals are coming into a herd (e.g., through recruitment). In addition to knowing the total number harvested, it is also important to know the proportions of animals harvested – how many cows, calves or bulls are taken. Harvest information can be straightforward to collect compared to something like wounding loss (animals that are wounded but not retrieved). While this is also important, it is very difficult to measure. Because there may be differing perspectives on harvesting and harvest monitoring, we have included a “Hot Topic Box” on the following page.

There is a strong desire amongst wildlife managers, as well as the harvesters who attended the community engagement sessions, to have continued harvest monitoring programs and to establish (or re-establish) programs in each region. Efforts to make these programs as effective as possible in addressing the needs of both communities and managers are ongoing. Further details about harvest monitoring programs to estimate resident, non-resident, commercial, and subsistence caribou harvests are included in the **Community Report** and the **Scientific Report** that accompany this Management Plan.

During the community engagement meetings, it was very clear that communicating, teaching, and practising traditional, respectful ways of harvesting is a priority for many people. In addition to monitoring harvest levels, communities could report on how well they’re doing in regards to respectful harvesting practices at annual meetings. It is important that there is continuous, reliable, long-term information on harvesting to better understand how it can influence herds. Harvesting is also an important way of sustaining relationships with the caribou and through that, providing opportunities to obtain knowledge and data. An effective overall monitoring program will require good communication and sharing of information

between regions and wildlife managers. Analyses of both population data and harvest data can then be used to develop sustainable harvest recommendations.

Hot Topic: Perspectives on Harvesting and Harvest Monitoring

Differences in perspectives of harvesting in Aboriginal and scientific communities can lead to sensitivity about approaches to harvest monitoring. The relationship of Aboriginal harvesters to animals like caribou is complex – rooted in traditional culture and spirituality. Harvesting can be seen as having both direct and indirect effects on populations. In the opinion of many hunters, they have always played a positive role as managers of the herds by harvesting them according to specific rules of use, and maintaining caribou numbers within the carrying capacity of the habitat. Traditional monitoring methods still strongly inform decisions about where, when and how much to harvest. At times when caribou are absent or in low numbers, harvesters switch to other food sources, helping herds recover. In many cases, traditional knowledge teaches that harvesters and other predators “keep the herds healthy” by hunting, and in the absence of respectful harvesting, the populations may go away, hence hunting restrictions are seen to jeopardize the relationship of hunting and healthy herds. These and other factors can make people reluctant to report their harvests.

To make informed management decisions, it is helpful to know how and why caribou populations are changing in number, what factors increase numbers and what decrease numbers. Therefore, harvest data are an important part of understanding caribou because they increase understandings of caribou mortality rates. Management goals are usually to maintain caribou numbers so they can support harvesting and ensure that caribou herds will be sustained over the long term. This may include goals of keeping herds stable, or to increase or decrease their numbers, depending on herd status and how they are relating to their environment. Because harvesting is done by people, it can be more easily understood and controlled than other natural factors that affect caribou mortality (e.g., weather and climate impacts, habitat conditions, predation rates, etc.). Monitoring and regulating harvest are some of the important tools used to understand caribou and their mortality rates and to help accomplish management goals.

This plan attempts to reflect a number of shared perspectives about harvesting, such as:

- Harvesting can be beneficial to caribou herds even though it directly reduces herd numbers.
- Understanding the relationship between habitat and caribou numbers is a crucial part of monitoring programs.
- Respectful harvesting has a role in management that may not be fully understood or agreed upon.
- There are different approaches to monitoring caribou and harvesting – from informal systems developed by communities over generations of living with caribou, to more formalized harvest data collection programs as required by land claims agreements.

In all situations, there is an important role for community organizations, including Renewable Resources Councils and Hunters and Trappers Organizations where they exist, in order to develop a strong approach to monitoring.

8.1.7 Predator Populations

Predators affect caribou behaviour and mortality. Some predators take caribou only during the calving period (e.g., eagles) and some only during the spring to fall period (e.g., grizzly and black bears). Wolves prey on all age classes of caribou and the rates may vary by season.

Predator numbers decline as herds decline but usually there is a delay of one or two years; if other prey species are available, predator numbers may not decline at all. When caribou numbers begin to decline, the impact of predation may become proportionately greater. This was reported from several communities.

Caribou users have requested increased monitoring of predator populations, measurements of predation, and assessments of the impact of that predation on the herds. Predator condition may be monitored in the NWT and Nunavut through carcass collection programs, and predator abundance and predation rates can be monitored through community and/or scientific research programs.

8.1.8 Caribou Range and Movement Patterns

Barren-ground caribou use different geographic areas to meet their seasonal requirements. These are referred to as 'seasonal ranges'. In winter, the preferred habitat of the Bluenose-West and Bluenose-East herds is boreal forest, where snow packs are not as deep and lichen is easier to get at. The forest also provides some protection from predators and wind. The Cape Bathurst herd winters near the treeline, with many animals staying on the tundra all winter, pawing through snow to find lichen.

In spring, all caribou migrate towards their calving grounds. These are typically open areas of tundra, where cows can see predators approaching and where there is abundant feed for young calves. Bulls, and cows that aren't calving, also go to open areas of tundra at this time of year, but might not make it all the way to the calving grounds. In the summer, caribou are influenced greatly by insects, seeking windy, cooler places as insect relief. Later in the summer, caribou begin to migrate back towards the winter range. Some other factors that influence habitat selection are insects, fire and human disturbance. More information on caribou habitat is included in the *Scientific Report*.

Monitoring where caribou are present and absent as well as how and when they move across their range will help to make linkages between habitat conditions and what kind of habitat caribou require. Additionally, such information will be helpful to better understand how caribou herds interact over time, filling in gaps in understanding relating to exchange rates between herds, for example. Communities may report throughout the year where and when they are

seeing caribou, as well as when and where they are absent. Use of collar data as well as observations made during scientific studies, such as surveys, will also contribute to this understanding.

8.1.9 Environment and Habitat Conditions

The term ‘cumulative effects’ refers to changes to the environment that are caused by an action in combination with other past, present and potential future human actions. Cumulative effects are usually greater than the sum of what each individual effect would be on its own. Long-term research on habitat quality and quantity and impacts of human activities can give us a better understanding of cumulative effects at the ecosystem level. Weather data and environmental observations are documented and shared amongst harvesters, scientists and industry. Co-management agencies can continue to call for and support such long-term research and monitoring. It is also important that these activities, as well as land use planning activities, are coordinated across the range of the herds. Some work is already underway in the range of these caribou – in the NWT, ENR is leading development of a multi-scale cumulative effects monitoring framework in collaboration with its management partners, and the Cumulative Impact Monitoring Program has a “Caribou Monitoring Blueprint” that outlines specific monitoring gaps that need to be filled to understand the cumulative impacts of human activities on caribou. In addition, with improved understanding there is a better opportunity to use regulatory management tools to limit disturbance on caribou. For example, in the NWT, Section 95 of the new Wildlife Act allows that a developer may be required to provide and adhere to a wildlife management and monitoring plan if the proposed development is likely to have a significant effect on wildlife or habitat.⁹

Community members have observed changes in the climate and on the land that may have a positive or negative effect on caribou movements and condition. These observations are generally consistent with scientists’ predictions of increased variations in temperatures, more rain and snow, and more severe weather events as a result of climate change. During the summer, shifts in temperatures and precipitation can lead to changes (either greater or lesser) in insect harassment of caribou or the timing of “green-up”. During the winter, variation in temperature or precipitation can affect caribou energy use through changes in access to food or vulnerability to predation (see also the *Scientific Report* and the *Community Report*).

Changes in habitat conditions (e.g., fires on winter range, levels of rain or snowfall, icing events, shifts in vegetation composition and/or other species presence) can provide insight into the stresses impacting caribou and the availability of habitat to caribou. For example, we know that

⁹ The NWT Wildlife Act is available online at: http://www.enr.gov.nt.ca/_live/documents/content/Wildlife_Act.pdf

increases in predators can impact caribou. There are also reports from some communities that as muskox distribution shifts habitat may become less attractive to caribou.

In order to assess habitat conditions for each herd, seasonal range use of each herd should be defined (as in **8.1.8**), weather and climate trends should be monitored, and past and present fire activity tracked. Key habitat indicators should be developed to help determine habitat quality and quantity using remote sensing and ground surveys. Identification and long-term protection of key herd habitat – such as calving grounds – will help to ensure that there are caribou for future generations.

8.1.10 Human Disturbance

Disturbance of caribou from human activities such as resource exploration and development, aircraft over-flights, and recreational activities can influence caribou behaviour and energy use, which in turn can affect condition and health. Indirect effects can also include a reduction in quality and quantity of habitat or access to quality habitat. Particularly when caribou numbers are low, human activities have the potential to alter the rate and extent of the decline or how long it takes the herd to recover.

The range of the three herds extends over lands that are protected from development and lands where exploration and development are occurring. Concern about the impacts of non-renewable resource development grew in the 2000s with a renewed surge in potential developments 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 Bathurst Inlet Port and Road which could have indirect impacts on these caribou.

Current developments can impact caribou during their active phase and through cumulative effects. The Inuvik-Tuktoyaktuk all-weather road passes through Cape Bathurst herd winter range. Discovery of diamonds and other valuable minerals in the NWT and Nunavut also led to increased mining activities throughout the range of the Bluenose-West and Bluenose-East caribou. In addition, there is extensive shale oil exploration currently taking place in the Central Mackenzie Valley (Sahtú and Gwich'in regions) – which is historic Bluenose-West and possibly Bluenose-East caribou range.

Multiple sources of disturbance, and disturbance over a long period of time, can have cumulative effects on herd health. Because of this, the GNWT's current Barren-ground Caribou Management Strategy has identified a need to develop models to assess cumulative effects and

to identify, monitor and mitigate impacts of exploration and development activities and improve understanding of mechanisms of impacts.¹⁰ There are proposed projects in Nunavut aiming to address the industrial development in the Bathurst Inlet area and how these activities affect caribou. Threshold levels of disturbance are unknown for barren-ground caribou. Quantifying levels of disturbance to caribou could help establish how disturbance changes over time and how it influences caribou movements and behaviour. Location and levels of disturbances could then be related to habitat availability and accessibility.

8.2 Approaches to Monitoring

Because it is necessary to have up-to-date information for decision making, an appropriate frequency of research, monitoring, and community engagement effort is very important. Likewise, it is necessary to have a well-planned strategy to ensure that traditional ways of monitoring are maintained. Certain monitoring will take place every year – for example, the ACCWM recommends that harvest information is collected annually no matter the status of the herd. These annual sources of information can then be compiled to help look at year to year trends. The frequency and intensity of other types of monitoring will most often vary in response to herd status. Further details on monitoring timing and effort can be found in the **Scientific Report**.

Some of these indicators of herd status can be difficult or expensive to measure. Depending on the type of monitoring, either scientific information or traditional knowledge may provide the most helpful insights or may shed light on different aspects of caribou herds and health. For example, traditional knowledge provides especially valuable insights about long-term trends and both localized and landscape-level changes in caribou and their habitat. Because these two streams of knowledge have different strengths and occur over different time scales, they sometimes differ in their findings. Nonetheless, they also can complement each other and provide useful information for comparisons. Timely collection and analysis of the information from both processes is essential to help inform the decision-making process.

On the following page, all the monitoring processes that were described in the previous section have been summarized in **Table 1**. This table shows how scientific and community knowledge can work together to measure the different variables, and how often each type of monitoring should occur.

¹⁰ Government of the NWT. 2011 (August). Caribou Forever – Our Heritage, Our Responsibility: A Barren-Ground Caribou Strategy for the Northwest Territories 2011-2015.
http://www.enr.gov.nt.ca/_live/documents/content/2011-2015_Barren-ground_Caribou_Management_Strategy.pdf

Table 1: What and how we monitor: criteria used to assess herd status.

Information	Community-Based		Scientific ¹¹	
	Measure	How often	Measure	How often
Population size	High, medium, low, critical	Throughout the year	High (Green) Medium (Yellow/Orange) Low (Red)	Green: every 4-5 years Yellow: every 3-4 years Orange and Red: every 3 years
Population trend and rate of change¹²	Observations: increasing, stable, decreasing	Throughout the year	Increasing, stable, decreasing	Annually
Productivity and recruitment	Observations: many or few calves	In summer, fall, and winter	Number of calves per 100 cows	Every winter (except years population estimate is done)
Adult composition	Observations: many or few bulls (and bull health)	Throughout the year	Number of bulls per 100 cows	Following population estimates or every 3-5 years
Body condition and health	Observations: good, fair, poor, abnormal	Throughout the year, especially during harvest	Fat indices, pregnancy rate, parasite and disease level	Level 1 annually; more intensive Level 2/3 every 5 years
Harvest levels	Harvest reporting	Monthly	Calculate total harvest and sex ratio from community data	Annually
Predator populations¹³	Observations: high, medium, low	Throughout the year	Carcass collection (reproduction, health, etc.)	Green and Yellow: every 5 years Orange and Red: every year
Range and movement patterns	Locations of caribou absence/presence	Throughout the year	Range use, movement patterns	Annually (based on collar data and observations throughout year)
Environment and habitat	Observations of food quality and availability, extent of burns, weather, snow depth, etc.	Throughout the year	Seasonal range use, fire, changes in plant productivity, green-up, climate, etc.	Annually to establish baseline and then to be determined thereafter
Human disturbance	Observations: high, medium, low	Throughout the year	Track land uses and disturbance levels	Annually, and then to be determined thereafter

¹¹ More information on scientific indices and their interpretation is available in the companion Scientific Report.

¹² While trend cannot be determined annually (trends can only be observed across or between years) the information needed for a trend analysis is collected annually.

¹³ There is a need for further research and discussion about how these factors, such as predator levels, can affect these three caribou herd populations.

9.0 Making Decisions and Taking Action

The following is an overview of the process, guiding documents, and schedule to be followed by the ACCWM to determine herd status and management actions. More detailed aspects on the decision-making process and implementation will be developed by the ACCWM.

9.1 How We Make Decisions – ACCWM Meetings

Accurate and timely information is necessary for making good decisions that will help the caribou herds. Because the herds are shared among communities and regions, it is also important that information is collected and shared amongst harvesters and managers. The ACCWM and its working group meets annually (normally in early fall) to review any new information on the herds and implementation of the Action Plans. This is an opportunity for the ACCWM to invite authorized representatives of the management agencies (e.g., ENR, Parks Canada, Government of Nunavut), community members, the public and scientists to get together and discuss the best available information about these herds.

Herd status will be determined based on information including:

- Estimate of the overall size of the herd;
- Population trend (increasing, decreasing, or stable); and
- Additional monitoring indicators (as in **Table 1**) to supplement the interpretation.

In addition to the information coming from monitoring, there may be other information available through research programs or traditional knowledge. All of this information will be considered by wildlife managers and harvesters. The ACCWM sees this as a collaborative decision-making process and will be done according to the requirements of regional legislation and land claims agreements.

9.1.1 Action Plans

“We need a consistent approach and law for all regions that share the same population of caribou. If we don’t apply the same rules the population will decline and the most we will be able to say is, ‘What happened?’”
(Fort Good Hope)



“A majority bull harvest implies big bulls which is not good. Majority bull harvest would be okay if it was stipulated that it was young bulls – not the big breeders, teachers and leaders of the migration.”
(Wrigley)



This Management Plan is supported by an Action Plan for each herd which outlines the actions to be taken and how they will be put in place. The ACCWM is responsible for determining herd status and developing the Action Plans. Action Plans are intended to be in place three to five years. When the ACCWM determines status each year, Action Plans will also be reviewed. If herd status changes, the Action Plans may need to be updated before the three to five year period has expired. This allows for the adjustment of actions as new information becomes available. Although normally revised only following population estimations, the herd status or Action Plans may be revised more often if, for example, there has been some unexpected and extreme change since the most recent estimate. Based in large part on the herd status, each Action Plan will outline specific management actions and how they will be put in place, by whom, and within what timeframe. Funding for the management action will be discussed by the ACCWM with other management partners.

Implementation of Action Plans is cooperative, and ongoing community input and support will help to develop and implement management actions. Each wildlife management board will be responsible for approving Action Plans for implementation within its region. Once the plan is approved, the plan is submitted to the appropriate governments for implementation.

9.2 When Do We Take Action

Our actions to help the caribou herds will be determined in part by the herd size, and whether it is increasing or decreasing. Management decisions will also be influenced by other information from harvesters and scientists such as recruitment, bull-to-cow ratio, body condition and health.

In this Management Plan there are four levels of herd status and management actions. These are colour-coded yellow, green, orange, and red.¹⁴ Management actions are based on defined phases of the population cycle. The herd status provides a trigger for specific management actions.

-  **Yellow:** The population level is intermediate and increasing
-  **Green:** The population level is high

¹⁴ The colour zones or “traffic light” approach used here is a way of indicating relative risk that was adapted from other regional management programs, such as the Porcupine Caribou Harvest Management Plan (2010) and NWT Fire Management (ENR).

- Orange:** The population level is intermediate and decreasing
- Red:** The population level is low

A representation of these thresholds is provided with corresponding colours in **Figure 8**.

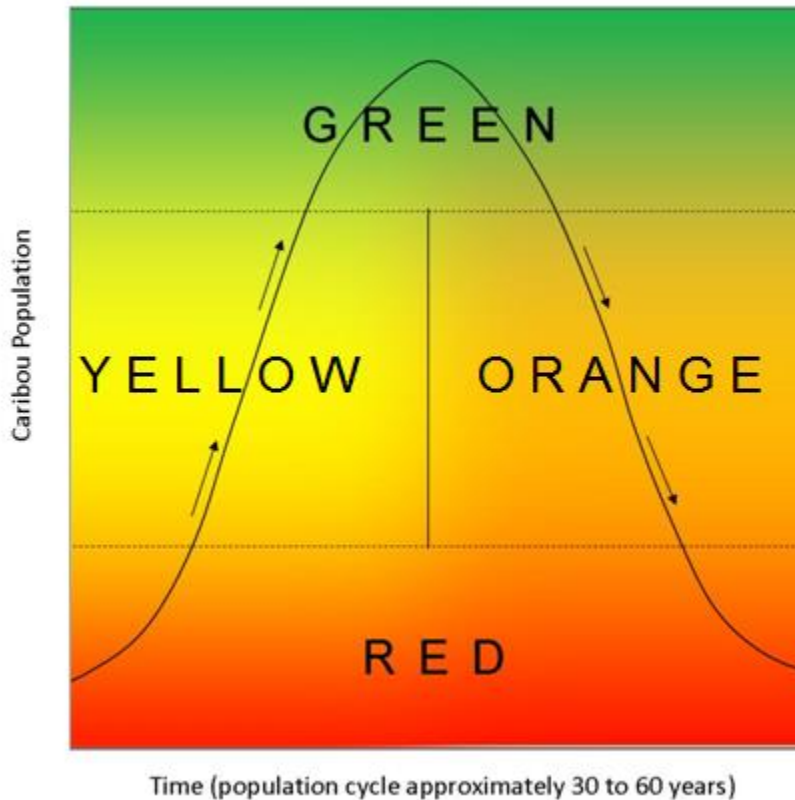


Figure 8: Caribou population status as colour zones.

Thresholds to help guide management actions were determined with input received from community and technical experts in a consensus-based process (**Table 2**). ACCWM members combined available science (historical high and low populations) with traditional knowledge and experience. Slight differences in thresholds between herds reflect the results from community engagements. The historic high, as measured by surveys, for each of the three herds, and the change over time, are shown in **Figures 4-6** of this report and described in more detail in the **Scientific Report**. Sufficient information was not available from results of modelling simulations to help set thresholds. However, this could be a helpful tool to provide further evaluation or adjustments in future planning. In addition, ENR has recently developed a “Rule of Thumb Approach” that describes a framework for barren-ground caribou harvest recommendations based on herd risk status. This approach relies on indicators – such as population size and trend – to help estimate the potential risk to a herd under different management scenarios; it is included with the **Scientific Report**.

The thresholds in **Table 2** are approximate and will be used to help guide management decisions and actions based on herd status. As explained earlier, estimated herd size is not the only indicator used to set a herd status into one of the four colour zones. Herd status decisions will use estimates of the overall number of caribou, whether a herd is growing in size or is declining (trend), and other monitoring indicators to assist in interpretation. In practise this means that although an estimate for a herd may cross or be very near a threshold, the determination of herd status will take into account all available information – it is not only the threshold value that is used to determine the colour zone. For example, a recommendation could be made to set a herd in a colour zone before a population estimate reaches a threshold value, or a decision could be made to keep a herd in a colour zone despite an estimate placing it just outside the threshold, if this is the best action based on all indicators considered together and according to the principles stated in this Management Plan.

Table 2: Thresholds for the status of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds.

HERD	Historic High As measured by surveys	Threshold Between green & yellow/orange	Threshold Between red & yellow/orange
Cape Bathurst Herd	19,000	12,000	4,000
Bluenose West Herd	112,000	56,000	15,000
Bluenose East Herd	120,000	60,000	20,000

9.3 What Actions Do We Take

The wildlife management boards that make up the ACCWM have authority through their land claim agreements to make recommendations and decisions on wildlife management issues. Under their mandates, the Boards have responsibility for wildlife and wildlife habitat management. The ACCWM can make consensus-based recommendations to governments, land use regulators, and respective Boards on the general types of management actions that are described below. ACCWM recommendations do not prohibit individual boards from providing additional recommendations, nor are individual boards bound by ACCWM recommendations. Communities may also choose to voluntarily restrict harvest.

The type of action and the degree of intervention will vary depending on the status of the herd. Generally, more management actions are recommended for times when herds are at low levels or decreasing (red and orange zones) than when populations are high or increasing (green or yellow zones). In addition to these management actions, monitoring activities are also taking place. Some of the specific management actions or changes in the frequencies of actions that can be triggered by a herd's status are described below and summarized in a table at the end of this section.

9.3.1 Education

The need for increased education about how to take care of caribou and use caribou respectfully was a very strong message heard during the community engagement sessions (see **Community Report**). Many of the important educational themes center on traditional harvesting practices, but some also focus on hunter safety and shooting techniques. Some ideas include:

- Promoting total use of harvested caribou;
- Proper butchering and storage methods;
- Limiting wounding loss;
- Letting the leaders pass;
- Promoting community hunts with experienced hunters;
- Caribou diseases and human health risks;
- Use of alternate species; and
- Increased sharing of traditional foods.

Educational programs developed by the ACCWM in partnership with government, communities and researchers can involve elders, harvesters, and youth in dialogue and activities on the land. Section 46 of the new NWT Wildlife Act outlines ways in which harvester training courses will be developed and delivered with the input of local harvesting committees, councils, Renewable Resources Boards, and/or other organizations. They will be developed and recommended no matter the status of the herds, however, the content and emphasis on these programs may vary with changing caribou status. It is important that educational programs reach all members of a community. More details on educational programs are outlined in the Action Plans. Ways of monitoring and regulating harvest are outlined later in this section (9.3.5).

9.3.2 Habitat

The ACCWM can recommend increased research and monitoring related to seasonal range use, key habitat indicators, or trends in climate and weather. It can also identify important habitat – such as calving areas, key winter range, etc. – and recommend it for special management and/or other types of protection (according to mandates of ACCWM member organizations). This can include other sensitive areas and habitats, such as river crossings and migration corridors. In addition, the ACCWM can support individual board's recommendations of protected areas, and habitat recommendations through land use plans or other means.

A recent innovative initiative by GNWT-ENR to undertake a range plan for the Bathurst caribou herd might be applicable to the range of the Cape Bathurst, Bluenose-West and Bluenose-East

caribou. The scope of the range plan is still being developed, but it is expected to provide guidance wildlife managers on how to monitor, assess and manage cumulative effects of human and natural disturbance on the Bathurst range. The planning process involves all organizations with a stake in land management on the Bathurst caribou range, from the NWT and Nunavut, including a range of government departments, Aboriginal Governments, land claims organizations, wildlife management boards, regulators, industry and others. The plan development process is in its early stages, so it is not yet possible to evaluate a final product or resulting outcomes. **Appendix F, Appendix G** and the *Scientific Report* include more details on caribou habitat and protected areas.

Management Actions include:

- Identify and recommend protection for key habitat areas;
- Review results of monitoring, including cumulative effects, to ensure enough habitat is available and caribou are able to move between areas of good habitat;
- Recommend important habitat as a ‘value at risk’ for forest fire management.¹⁵

9.3.3 Land Use Activities

The ACCWM members can provide recommendations to regulators (i.e., Land Use Planning, Environmental Assessment and Land and Water Boards) to help reduce the effects of land use activities on caribou herds. These can include hydrocarbon and/or mineral exploration and development, transportation and road development, and changes in recreational activities. Advice can be given to avoid key habitats and to mitigate disturbance from noise and access among other possible advice. For example, co-management boards, Renewable Resource Councils, and Hunters and Trappers Organizations and Committees comment on land use permits about how to mitigate impacts to caribou. Other agencies have the authority to regulate land use. The ACCWM is limited to making recommendations; management actions that could change land use activities are put in place by regulators. This is why it is so important to coordinate land use planning and activities across the entire annual range of herds. This is the best way of ensuring that habitat is conserved for caribou. Monitoring cumulative effects is one way of doing this. This requires a strong collaborative process. The annual ACCWM meeting is an opportunity to share information and coordinate management actions across regions and agencies. **Appendix F** includes more details on relevant land use planning processes and protected areas that are relevant to these caribou.

¹⁵ The NWT forest fire management policy defines “Values-at-risk” as “human life and the specific or collective set of natural or cultural resources and improvements/developments that have measurable or intrinsic worth and that could or may be destroyed or otherwise altered by fire in any given area.”
http://www.enr.gov.nt.ca/live/documents/content/53_04_forest%20fire_management_policy.pdf

Yellow: The population level is intermediate and increasing

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of industrial impacts to proponents and regulators;

Green: The population level is high

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of the impacts of exploration and development activities to proponents and regulators;

Orange: The population level is intermediate and decreasing

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of industrial impacts to proponents and regulators;
- Provide active and accessible communication and recommend education programs for all including proponents and airlines;
- Recommend increased enforcement of land use regulations, including community monitors;

Red: The population level is low

Management Actions include:

- Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures;
- Review results of cumulative effects monitoring programs;
- Provide active and accessible communication and recommend education programs for all including proponents and airlines;
- Recommend increased enforcement of land use regulations, including community monitors.

9.3.4 Predators

The ACCWM can recommend increased research on predators, including distribution and abundance and the impact of predation on caribou herds. It can also recommend means of predator control including incentives for harvest of predators. Because this can be a controversial topic, a “Hot Topic Box” is included later in this section.

Experience in Alaska, Yukon, NWT and Nunavut in the 1960s, have shown that predator control can be a tool for short term recovery in caribou populations in some situations. However, there is little evidence of wolf control programs being effective over the long term. It is suggested that prior to the design and implementation of any predator management approach, an open discussion of this topic be held among wildlife managers, scientists, and harvesters (see the **Scientific Report** and the **Community Report** for more discussion of this subject).

 **Yellow:** The population level is intermediate and increasing

Management actions include:

- Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs);

 **Green:** The population level is high


Management actions include:

- Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs);

 **Orange:** The population level is intermediate and decreasing

Management actions include:

- Review results of research programs that monitor predator abundance and predation rates;
- Consider recommending options for predator management;

 **Red:** The population level is low

Management Actions include:

- Review results of research programs that monitor predator abundance and predation rates;
- Consider recommending options for predator management.

Hot Topic: Predator Control Programs

Many people in communities across the NWT report that they are seeing more caribou predators in recent years, including wolves, wolverines, grizzly bears, and eagles. While predators have a natural role in ecosystems, there are concerns that when they are at high levels, they can have a negative impact on prey like caribou – especially when those animals are already in decline.

Today, in some regions, fewer people may trap or hunt species like wolves compared to in the past, and the question of whether to ‘manage’ or control predator populations in order to benefit caribou can be a sensitive one. Science is beginning to show that this is not a straight-forward issue – sometimes the populations do not respond as expected. Amongst the public, there is both support and opposition to the idea. Because the issue is so complex, there is currently no formal wolf control program in the NWT or Nunavut.

For the management recommendations in this plan, the ACCWM acknowledges that predators are integral components of northern ecosystems; predator populations can cycle up and down and have varying impacts on their prey populations; predator control programs are controversial; it is important to have good information on predator populations, rates of predation, impacts on prey populations like caribou, and the effectiveness of control programs before informed management decisions can be made – this should include information from both science and traditional knowledge.

9.3.5 Harvest

As mentioned earlier, in many Aboriginal societies respectful harvesting is seen to help sustain the balance between caribou, humans and the landscape. They see that traditional practices can maintain proper relationships, keep herds healthy and within their carrying capacity, and promote cultural continuity by passing lessons from generation to generation. Education about ways of harvesting respectfully is crucial, and was identified by many communities as a key to taking care of caribou.

Because harvesting itself is a management tool, regulations around harvesting are also a tool. The effects of harvesting on a population are not just dependent on the total number of caribou taken, but also on whether a herd is increasing or decreasing, the cumulative effects impacting the landscape, and several other factors. Each factor should be weighed in order to make recommendations that will be best for the caribou.

Priorities for harvest allocation are explained in a “Hot Topic Box” below. The ACCWM can make recommendations to the appropriate Ministers with respect to limits on harvest as established through land claim agreements, with non-commercial harvesting having priority over commercial harvesting. With respect to non-commercial harvesting, Land Claim beneficiaries and Aboriginal people have a priority right to harvest over other NWT residents who in turn have priority over non-residents. In areas of Nunavut and the NWT that have land claims agreements, when strict conservation measures are needed, a Total Allowable Harvest is established. Harvest studies assist in establishing Total Allowable Harvests and inform basic needs levels which constitute the first demand on harvesting. Formal harvest studies are available from the Inuvialuit, Gwich’in, Sahtú, and Nunavut settlement areas. Groups without formal harvest studies will need to find a way to determine harvest levels.

Hot Topic: Priorities for Harvest Allocation

In the NWT, land claim agreements establish priorities for allocation of harvest when it must be limited for conservation purposes. For areas without settled land claim agreements, the new Wildlife Act includes the following priorities for allocation of harvest:

- First – subsistence and cultural harvest for those with Aboriginal harvesting rights in the NWT;
- Second – resident hunters;
- Third – outfitted hunts;
- Fourth – other commercial purposes.*

The Nunavut land claim states that the basic needs levels shall constitute the first demand on the total allowable harvest. If the total allowable harvest is equal to or less than the basic needs level, Inuit shall have the right to the entire total allowable harvest. Section 5.6.31 speaks to the surplus and states that the allocation of the surplus shall be determined in the following order and priority:

- To provide for personal consumption by other residents;
- To provide for the continuation of existing sports and other commercial operations;
- To provide for economic ventures sponsored by Hunters and Trappers organizations and Regional Wildlife Organizations;
- To provide for other uses including commercial, commercial sport and recreation.†

*See http://www.enr.gov.nt.ca/live/documents/content/Aboriginal_Harvesters.pdf

†From: Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty The Queen in Right of Canada Land Claims Agreement. Article 5 Sections 5.6.20 and 5.6.31. Amended on January 29, 2009.

With the exception of the TNNPMB, each ACCWM member may, if circumstances require, set a Total Allowable Harvest (TAH) for their region and then allocation is done within the region according to what is outlined in individual land claims. Communities may also choose to voluntarily restrict harvest – for example, a regional council such as an HTO may set community by-laws that affect harvesting. The ACCWM recognizes that it is important to work

collaboratively when discussing a TAH for shared herds – this was one of the underlying reasons behind the creation of the ACCWM. Discussions about allocations will be based on harvest levels and according to the requirements of regional legislation and of land claims agreements (see **Appendix C**).

The ACCWM can also make recommendations on seasonal harvesting restrictions and/or harvest composition (e.g., bulls vs. cows). This can be a controversial topic, so there is more information in the “Hot Topic Box” below. Harvest recommendations are based on the best understandings from both science and traditional knowledge – this could include an analysis of how different harvest scenarios affect the herds. Harvest recommendations can be contentious amongst the different user groups, as they may have cultural or economic impacts. Harvest regulations will not work without a program which may include education and enforcement. Regional and community authorities can cooperatively develop a compliance program that fits present and future needs.

Hot Topic: Cow vs. Bull Harvests

Many Aboriginal harvesters take a mix of bulls and cows throughout the year, according to the seasons and the condition of the caribou. Traditionally, people hunt bulls early in the fall, because after the rut they are skinny and the meat is not as good. Cows are in prime condition in the winter and are harvested in November and December a lot. Bulls start to get fat again in spring, so both sexes are hunted after that point. Some elders say that it is never a good idea to harvest mature bulls, as they are the leaders and breeders in the herd.

Science suggests that a reduction in the number of cows harvested from a herd can help the population increase through increased birth rates. Cows give birth, and even dry cows can produce calves in following years. In addition, bulls can breed with many cows. This leads scientists to suggest that switching the harvest away from cows can help barren-ground caribou herds grow by protecting reproduction in the current year and future years.

Communities are concerned that a bull-dominated harvest could lead to the removal of too many of the ‘prime’ or strongest males from the population and weaken the herd over the long run. For the management recommendations in this plan, the ACCWM acknowledges that everyone agrees it’s important to keep a good balance in the ratio of bulls to cows in a herd; that good information and monitoring can help choose the best balance of males and females to harvest; and that harvesting should not target just the largest bulls, as they are important to the herd.

The ACCWM can recommend programs to encourage the harvest of alternate species and increased sharing, trade and barter of traditional foods. Some management actions related to these topics are covered in greater detail in the sections on Education and Communication; there is also further information, including suggestions on appropriate strategies, in the **Community Report**. The ACCWM can also make recommendations on things like consideration

of community monitors and the design and nature of harvesting studies. Specific recommendations for harvest survey protocols will be developed in the Action Plans.

Yellow: The population level is intermediate and increasing

Management actions include:

- Recommend easing limits on subsistence and then resident harvests ;
- Consider recommending outfitter and commercial harvests at discretion of the ACCWM;

Green: The population level is high

Management actions include:

- Support harvest by beneficiaries of a Land Claim and members of an Aboriginal people, with rights to harvest wildlife in the Region;
- Recommend that if subsistence needs are met resident harvest should be permitted (with limits);
- Potentially recommend resident (non-beneficiary), non-resident, sport hunts, and/or commercial harvests;

Orange: The population level is intermediate and decreasing

Management actions include:

- Recommend a mandatory limit on subsistence harvest based on a TAH accepted by the ACCWM;
- Prioritize the collection of harvest information;
- Recommend no resident, outfitter or commercial harvest;
- Recommend a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders;
- Recommend harvest of alternate species and encourage increased sharing, trade and barter of traditional foods, such as the use of community freezers;
- Recommend increased enforcement including community monitors;

Red: The population level is low

Management actions include:

- Recommend harvest of alternate species and meat replacement programs, and encourage increased sharing, trade and barter of traditional foods;
- Prioritize the collection of harvest information;
- Review of mandatory limit for subsistence harvest for further reduction;
- Recommend increased enforcement including community monitors;
- Resident, commercial, or outfitter harvest remain closed.

Table 3: Summary of management actions.¹⁶

Management Actions Based on Herd Status/Colour Zone				
Management Action	The population level is intermediate and increasing	The population level is high	The population level is intermediate and decreasing	The population level is low
Education	<p>Recommend education programs for all status levels. Ideas for educational themes include:</p> <ul style="list-style-type: none"> • Promoting total use of harvested caribou, and proper butchering and storage methods; • Limiting wounding loss; • Letting the leaders pass; • Promoting community hunts with experienced hunters; • Use of alternate species; and • Increased sharing of traditional foods. 			
Habitat	<ul style="list-style-type: none"> • Identify and recommend protection for key habitat areas; • Review results of monitoring, including cumulative effects, to ensure enough habitat is available and caribou are able to move between areas of good habitat; • Recommend important habitat as a 'value at risk' for forest fire management. 			
Land use activities	<ul style="list-style-type: none"> • Review results of cumulative effects monitoring programs; • Provide advice on mitigation of industrial impacts to proponents and regulators. 	<ul style="list-style-type: none"> • Review results of cumulative effects monitoring programs; • Provide advice on mitigation of the impacts of exploration and development activities to proponents and regulators. 	<ul style="list-style-type: none"> • Review results of cumulative effects monitoring programs; • Provide advice on mitigation of industrial impacts to proponents and regulators; • Provide active and accessible communication and recommend education programs for all including proponents and airlines; • Recommend increased enforcement of land use regulations, including community monitors. 	<ul style="list-style-type: none"> • Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures; • Review results of cumulative effects monitoring programs; • Provide active and accessible communication and recommend education programs for all including proponents and airlines; • Recommend increased enforcement of land use regulations, including community monitors.

¹⁶ These management actions are in addition to the research and monitoring actions described in section 8.0 and summarized in Table 1.

Management Actions Based on Herd Status/Colour Zone				
Management Action	The population level is intermediate and increasing	The population level is high	The population level is intermediate and decreasing	The population level is low
Predators	<ul style="list-style-type: none"> Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs). 	<ul style="list-style-type: none"> Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs). 	<ul style="list-style-type: none"> Review results of research programs that monitor predator abundance and predation rates; Consider recommending options for predator management. 	<ul style="list-style-type: none"> Review results of research programs that monitor predator abundance and predation rates; Consider recommending options for predator management.
Harvest	<ul style="list-style-type: none"> Recommend easing limits on subsistence and then resident harvests ; Consider recommending outfitter and commercial harvests at discretion of the ACCWM. 	<ul style="list-style-type: none"> Support harvest by beneficiaries of a Land Claim and members of an Aboriginal people, with rights to harvest wildlife in the Region; Recommend that if subsistence needs are met resident harvest should be permitted (with limits); Potentially recommend resident (non-beneficiary), non-resident, sport hunts, and/or commercial harvests. 	<ul style="list-style-type: none"> Recommend a mandatory limit on subsistence harvest based on a TAH accepted by the ACCWM; Prioritize the collection of harvest information; Recommend no resident, outfitter or commercial harvest; Recommend a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders; Recommend harvest of alternate species and encourage increased sharing, trade and barter of traditional foods, such as the use of community freezers; Recommend increased enforcement including community monitors. 	<ul style="list-style-type: none"> Recommend harvest of alternate species and meat replacement programs, and encourage increased sharing, trade and barter of traditional foods; Prioritize the collection of harvest information; Review of mandatory limit for subsistence harvest for further reduction; Recommend increased enforcement including community monitors; Resident, commercial, or outfitter harvest remain closed.

10.0 How We Communicate

It is critical to the success of the Management Plan to have clear principles and methods in place for communication. This helps to ensure that:

- All groups can effectively participate in sharing knowledge of the caribou and of the Management Plan;
- Groups will work together to discuss and implement effective management actions; and
- Trust and confidence in management processes will be built.

Communication is the responsibility of all groups engaged in managing the impacts of human activities on caribou and on the land. Knowledge itself is dynamic and powerful and information must flow both ways – between knowledge holders and wildlife managers. As such, communication is most effective when undertaken as a dialogue. Experience shows that there is no substitute for face-to-face discussions and by using methods that are locally adaptive. In many communities, the local Aboriginal language is a crucial medium for effective communication. Community organizations can provide guidance on the best methods of communication in their regions.

It will be important that communication includes sharing results from monitoring programs about herds at annual meetings, and communicating meeting decisions and/or recommendations back to user groups and stakeholders in a timely fashion. The kind of information communicated may also include:

- The colour-coded herd status;
- Any voluntary or regulated limits on harvesting, such as changes to regulations;
- What is being monitored and why;
- Results of monitoring programs;
- Rationale for harvest regulations (e.g., why harvesting mostly bulls rather than cows may be preferable); and
- Educational themes, such as promotion of respectful hunting and butchering practices and information about caribou diseases and human health risks.

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



*“Use the radio as a tool to inform harvesters on thresholds and requirements.”
(Paulatuk)*

“Education is the key to cooperation, respect and compliance.” (Aklavik)

“When you mention maintaining caribou habitat that means you have to lobby against the industry that is coming in. They are the major concern. Without them, things will be okay.” (Tulit’a)

It can also include work with members of industry including resource proponents and aircraft charter companies, as well as other stakeholders. Members of the ACCWM will work together and with government to provide active and accessible communication programs. Adequate funding needs to be budgeted to ensure that full opportunity is provided for dialogue about the status of herds and management actions being considered.

There are many communication techniques which will be used depending on the message and the intended audience. They may include local radio programs; visits to schools; posters or presentations; briefing of developers and airlines; and on-the-land gatherings. They will occur on an annual basis and not just when the herds are in the Orange or Red zones. Further details on timing and communication methods will be provided in the Action Plans. Information programs including harvesting training, perspectives of harvesters and the economic use of wildlife should be developed so that there is strong understanding of the principles underpinning Action Plans for the three herds. Further suggestions for communication tools and strategies are included in the ***Community Report***.

11.0 Where do we go from here? Implementing the Management Plan

This Management Plan is the result of a five year planning process. It represents a significant amount of work, and attempts to accommodate the input and interests of people from seventeen communities in six land claim areas, as well as all levels of government. The ACCWM firmly believes that the time taken to undertake full community engagement in the regions, gather the best available research, and collaboratively work to address contentious issues has resulted in a plan that is robust and will be considered valid by the people who are managers and stewards of the caribou. This plan initiates a new era in the management of these caribou, one that recognizes the broadly shared responsibility for stewardship of the herds, and the need for coordination and cooperation to sustain caribou for future generations. This plan is also a starting point – a foundation for future work that sets out agreed-upon principles and objectives that will guide other processes. This plan is a living document, so continual follow-up needs to be done to ensure the plan remains current and that Action Plans are implemented.

11.1 Implementation of the Plan

The success of this Management Plan depends upon continued cooperation and participation of all the signatories. Some of the key steps are:

- Annual meetings to share information, determine herd status, and decide on appropriate management actions;
- The development of Action Plans that lay out annual priorities for each herd;
- Adequate funding, organizational capacity and commitment from signatories and partners to carry out prioritized management actions;
- Acquiring information identified throughout the plan, including research and monitoring to expand our knowledge and understanding;
- Continued communication between different regions and levels of government, as well as ongoing dialogue with communities and the broader public.

“Be positive and put some recommendations in the plan. Have some confidence and be optimistic. Have some faith in the system. We have to work together to make things happen. We are all in this together.” (Inuvik)



“The quicker you work on it and have a timeframe to have it done... after you do the initial one [there are] always ways to make it better, but get it done – time is important. ... The communities’ main interest is to have the herd around for a long time. The quicker you get it together the better.” (Aklavik)

11.2 Updating the Plan

This plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds will first be reviewed after five years (i.e., 2019) and at ten-year intervals thereafter.

Any Aboriginal, territorial or federal government, or wildlife management board, or designated Inuit organization may request a review, at any time, through a formal request to the ACCWM. The measures identified in this plan are intended to be effective and well-founded in research and best practises. As new information becomes available it will be incorporated into each scheduled update to ensure the plan continues to be based on the best and most current information. Any lessons learned as the Management Plan and Action Plans are implemented will also be incorporated in future versions of the plan, increasing its reliability and strength.

APPENDICES

Appendix A: Acronyms and Terms used in this Plan

List of Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada
ACCWM	Advisory Committee for Cooperation on Wildlife Management
EISC	Environmental Impact Screening Committee
ENR	Department of Environment and Natural Resources, GNWT
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
NLCA	Nunavut Land Claims Agreement
NPC	Nunavut Planning Commission
NWT	Northwest Territories
NWMB	Nunavut Wildlife Management Board
SRRB	Sahtú Renewable Resource Board
SSA	Sahtú Settlement Area
TAH	Total Allowable Harvest
TNNPMB	Tuktut Nogait National Park Management Board
WRRB	Wek' èezhii Renewable Resource Board
WMAC	Wildlife Management Advisory Council (NWT)

Appendix B: Bluenose Caribou Herds Management Plan Working Group Draft Terms of Reference

21 April 2009

WHEREAS it is recognized that the barren-ground caribou that occupy the northern portion of the Northwest Territories and western Nunavut (historically referred to as the “Bluenose Herd”) is considered to have three different calving grounds;

AND WHEREAS these herds move among the Inuvialuit, Gwich’in, Sahtú Tli Cho and Dehcho settlement areas and between the Northwest Territories and Nunavut;

AND WHEREAS the continued well-being of these herds and the maintenance of their habitat requires coordinated and collaborative management, goodwill, and cooperation among the management agencies and the stakeholders;

AND WHEREAS the Advisory Committee for Cooperation on Wildlife Management (ACCWM), has decided to prepare the Bluenose Caribou Herds Management Plan;

THEREFORE the ACCWM hereby establishes a Working Group to prepare the Bluenose Caribou Herds Management Plan in accordance with these Terms of Reference (TOR).

A. Guiding Principles

The Working Group shall be guided by:

1. The principles of conservation which are:
 - The maintenance of the natural balance of ecological systems;
 - The protection of wildlife habitat; and
 - The maintenance of vital, healthy wildlife populations capable of sustaining lawful harvesting needs.
2. The rights of aboriginal users will be recognized and protected while recognizing the needs of other lawful harvesters and non-consumptive users;
3. The Precautionary Principle which is: in the absence of complete information and where there are threats of serious or irreparable damage, lack of complete certainty shall not be a reason for postponing reasonable conservation measures;
4. The best available scientific and traditional knowledge;

5. The differences and similarities in approach to traditional knowledge and scientific data collection and analysis;
6. The interconnection of the caribou with other components of the physical, biological and cultural environment; and
7. The past, present and future experience, knowledge and values of northern peoples.

B. Objectives

- 1) To prepare a draft Management Plan (hereinafter referred to as “the Plan”) for the Cape-Bathurst, Bluenose-West and Bluenose-East caribou herds and their habitat for recommendation to the ACCWM.
- 2) To recommend an approach with respect to the shared responsibility for implementing the Plan.
- 3) To promote and strengthen communication and sharing of information among all groups interested in or responsible for the management of the Bluenose herds and their habitat.

C. Membership

- 1) The Working Group will comprise one representative from each of the following:
 - Wildlife Management Advisory Council (NWT)
 - Gwich'in Renewable Resource Board
 - Sahtu Renewable Resource Board
 - Tuktu Nogait National Park Management Board
 - Nunavut Wildlife Management Board
 - Wek'eezhii Renewable Resource Board
 - Kitikmeot Regional Wildlife Board
 - GNWT Department of Environment and Natural Resources – Inuvik Region
 - GNWT Department of Environment and Natural Resources – Sahtu Region
 - GN Department of Environment
 - Parks Canada
 - Dehcho
 - Nunavut Tunngavik Inc.
- 2) Each representative may choose an alternate to participate when the representative is not available.

- 3) Representatives and alternates shall be knowledgeable, willing and able to bring forward the interests and opinions of their constituents and, in turn, provide information and feedback from the Working Group to their constituents.

D) Responsibilities

The Working Group shall provide to the ACCWM, the following:

- 1) A draft TOR for the Working Group;
- 2) A draft Work Plan for the preparation of the Bluenose Caribou Herds Management Plan, including but not restricted to:
 - A detailed table of contents;
 - A detailed task list;
 - A schedule for completing the tasks;
 - A schedule for community engagement;
 - A budget; and
 - A proposed communication plan (to be implemented by the ACCWM).
- 3) A draft Management Plan, based on both traditional and scientific knowledge that shall address, but is not limited to the following:
 - Historical Perspective
 - Management goals;
 - Current status of the herds;
 - Management strategies under various population scenarios;
 - Criteria for assessing the status of the herds and their habitat;
 - Habitat management and conservation;
 - Monitoring and research requirements;
 - Standardized data collection and presentation;
 - Coordination and implementation of the plan; and
 - Review and revision of the plan.

(A summary report on the status of the herds will be prepared by ENR as a separate document)

E. Operating Procedures

1. The Working Group will establish, from time to time, rules and procedures including:
 - Decisions of the Working Group will be made by consensus;

- Where consensus cannot be reached, the dissenting view will be included with the majority view and presented to the ACCWM for decision;
 - The Working Group will keep minutes and records of all its meetings and circulate them amongst its members and provide them to the ACCWM.
 - A contractor may be hired to facilitate meetings and community engagement, provide a secretariat and to prepare the draft management plan
2. Any disputes regarding the interpretation or implementation of the TOR shall be referred to, and resolved by, the ACCWM.

F. Operating Funds

1. All parties will be responsible for expenses of their representatives on the Working Group.
2. ENR will provide funding for the initial meeting of the Working Group.
3. Government funds will be sought; based on the budget developed by the Working Group.

G. General

1. All reports, summaries or other documents prepared under these TOR will become the property of the members of the ACCWM.
2. The Working Group will be terminated once the plan has been recommended to the ACCWM for approval and implementation.
3. The Working Group may be extended and these TOR may be amended at the discretion of the ACCWM.

WRRB decisions are referred to the appropriate government which may accept, vary or set aside the decision, with reasons, except for determination of total allowable harvest of wildlife, where the board's decision is final. Rights and responsibilities for stewarding land and resources are outlined in Chapter 12 of the Tłı̄ch̄q Land Claims and Self-Government Agreement (20035).

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

Nunavut Wildlife Management Board

The Nunavut Wildlife Management Board (NWMB) is the main instrument of wildlife management in Nunavut. Rights and responsibilities for stewarding land and resources are outlined in Article 5 of the ***Nunavut Land Claims Agreement*** (amended 2009). The NWMB is responsible for establishing Total Allowable Harvests and Basic Needs Levels; participating in research; establishing, modifying or removing non-quota limitations (e.g. sex or age specific harvests); approving the establishment, disestablishment, and changes to boundaries of conservation areas related to the protection of wildlife and wildlife habitat; and other duties assigned to it though the Nunavut Land Claims Agreement (refer to NLCA s. 5.2.33, 5.2.34). NWMB decisions are required to be submitted to the appropriate Minister and follow processes and requirements outlined in Part 3 of Article 5 of the NLCA.

Nunavut Wildlife Management Board: www.nwmb.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 KRWB 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: <http://www.pc.gc.ca/eng/pn-np/nt/tuktutnogait/index.aspx>

Parks Canada Agency

Parks Canada Agency protects Tuktut Nogait National Park and and the Saoyú-?ehdacho 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. As a Hunters and Trappers Organization the Kugluktuk Angoniatit Association is responsible for the management of harvesting among members, including the regulation of harvesting practices and techniques and the allocation and enforcement of community basic needs levels and adjusted basic needs levels (refer to NLCA s. 5.7.3).

Email address: kugluktukhto@qiniq.com

Nunavut Tunngavik Incorporated

The NLCA (Article 39) establishes authority to Nunavut Tunngavik Incorporated (NTI) as the primary Designated Inuit Organization under the Agreement. It is responsible for ensuring that Inuit rights and obligations under the land claim are implemented, including the wildlife management provisions (Article 5) of the NLCA.

Nunavut Tunngavik Incorporated: <http://www.tunngavik.com/>

Appendix D: Summary Table for Management Plan Engagement and Review Process

Date	Region	Community (#participants)	Engagement Round, Meeting Type or Objective	Outcome or Products
Feb. 28 – Mar. 22, 2007	Western Kitikmeot Region, NU	Kugluktuk (12)	Workshop intended to provide an opportunity for participants to share knowledge of caribou herds, as well as proposing several actions that could promote the recovery of the caribou herds and help the community during this period of low caribou availability.	Workshop focused on Bluenose East and Dolphin-Union herds. Report produced (Dumond 2007).
ROUND 1			COMMUNITY INPUT AND ENGAGEMENT	WORKING GROUP AND CONSULTANT HOLD COMMUNITY MEETINGS
Oct. 20 – Nov. 3, 2009	ISR	Aklavik (23), Inuvik (14), Paulatuk (11), Tuktokyaktuk (17)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan. Also did school tours in communities.	Summary report produced for ISR. Inuvik and Aklavik meetings were shared with GSA participants; comments from these community members were not sorted into Gwich'in or Inuvialuit but only by community.
Oct. 21 – Dec. 18, 2009	GSA, ISR	Aklavik (23), Fort McPherson (11), Inuvik (14), Tsiigehtchic (8)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan; RRCs invited to provide comments at meeting and formally afterwards if desired. Also did school tours in communities.	Summary report produced for GSA. Inuvik and Aklavik meetings were shared with ISR participants; comments from these community members were not sorted into Gwich'in or Inuvialuit but only by community.
Dec. 1 – 18, 2009	SSA	Colville Lake (17), Deline (11), Fort Good Hope (15), Norman Wells (5), Tulit'a (14)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan. Also did school tours in communities.	Summary report produced for SSA.
Feb. 17, 2010	Western Kitikmeot	Kugluktuk (12-15)	Community engagements to review status of herds; hear concerns and	Summary report produced for Nunavut.

	Region, NU		opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan	
ROUND 2			COMMUNITY FEEDBACK ON FIRST REPORT DRAFT	ACCWM MEMBERS CONSULT IN THEIR RESPECTIVE REGIONS.
Jan. – Feb. 2011	ISR	Inuvik (6), Aklavik (5), Tuktoyaktuk (12), Paulatuk (13)	Community meetings to review first draft of Management Plan	Meeting recorded in notes.
Feb. 14- Feb. 16, 2011	GSA	Aklavik(5), Inuvik (7), Fort McPherson(10), Tsiigehtchic(10)	GRRB Public meetings with Gwich'in RRCs to review first draft of the Management Plan to get input on the draft plan, the management actions and thresholds for actions; ENR WG member invited to help present plan with GRRB staff; RRCs invited to provide comments at meeting and formally afterwards	Summary report of all GSA consultations; summary does not include GTC comments. Themes identified to help review comments. Additional comments received from Gwich'in Tribal Council in March, 2011 on Dec 2010 version of draft plan.
Feb. 22 – 24, 2011	WRMA (Tłı̄chǫ)	Bechoko (40), Gameti (5), Whati (25)	In this region, Round 2 engagements included information conveyed to other regions during Round 1, as well as presenting information in the Draft Plan.	Notes produced for each community.
Mar. 2011	SSA	Deline (6)	Public meeting to develop a Management Plan for the Cape Bathurst, Bluenose-West and Bluenose-East caribou herds	Meeting notes provided, but no translation of discussions in North Slavey.
Aug. 2-4, 2011	Western Kitikmeot Region, NU	Kugluktuk HTO	Community consultations on draft Management Plan	Meeting notes provided.
ROUND 3			CONSULTATION ON SECOND DRAFT	ACCWM MEMBERS CONSULT IN THEIR REGIONS. ENR RELEASES DRAFT FOR PUBLIC REVIEW AND COMMENT.
Jun. 2011			Draft plan posted on ENR website for public review, sent to key audiences*, and provided at following assemblies: Dehcho FN	Written comments provided to ACCWM.

			(Wrigley), Akaitcho Territory Government (Lutsel K'e), Tłı̄chǫ (Whati), Dene Nation (Fort Providence), Gwich'in (Tsiigehtchic), Sahtú (Colville Lake).	
Aug. 9 2011	GSA, ISR	Inuvik (10)	ENR public review meeting on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan.	Summary notes provided.
Aug. 2- Aug. 18, 2011 & Dec. 7, 2011	GSA	Aklavik (8), Fort McPherson (5+8), Inuvik(6), Tsiigehtchic(3)	GRRB community consultations on draft Management Plan with RRCS and open to the public.	Community notes include list of participants and affiliation
Aug. – Oct., 2011	SSA	Tulit'a (11), Colville Lake (9), Deline (13), Fort Good Hope (16), Norman Wells (7)	ENR public review meetings on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan.	Summary notes provided.
Nov. 2011	WRMA (Tłı̄chǫ)	Bechoko, Whati	Information session on draft plan.	No information available.
Nov. 2011	NWT MN	(unknown)	ENR meeting with NWT MN for comments on draft Bluenose Management Plan	Summary notes provided.
Nov. 2011	NSMA	(unknown)	ENR meeting with NWT MN for comments on draft Bluenose Management Plan	Summary notes provided.
Jan. 2012	Dehcho	Wrigley (5), Fort Simpson (7)	ENR public review meeting on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan	Summary notes provided.
Apr. – Jun., 2013	ISR	Paulatuk (9), Aklavik (7), Inuvik (6), Tuktoyaktuk (24)	WMAC presentation and meetings to review draft plan and address IGC concerns with plan	Summary notes provided.

*In addition to the meetings and presentations conducted as part of the engagement process, ENR solicited public input on the draft Management Plan by posting it online (June 2011 – present). No broader distribution occurred in Nunavut. The draft plan was sent to the NWT organizations listed on the following pages for review and comment:

Aklavik Hunters' and Trappers' Committee	Fort Smith Métis Council
Aklavik Métis Local #56	Gwich'in Land and Water Board
Arctic Safaris	Gwich'in Land Use Planning Board
Association of Mackenzie Mountain Outfitters	Gwich'in Renewable Resources Board
Aurora Caribou Camp	Gwich'in Tribal Council
Ayoni Keh Land and Dugha Financial Corporation	Gwichya Gwich'in Renewable Resource Council
Barren Ground Caribou Outfitters Association	Hay River Aboriginal Métis
Behdzi Ahda First Nation Band Council	Hay River Fish and Game Association
Behdzi Ahda First Nation Economic Development Corporation	Hay River Métis Council
Behdzi Ahda Renewable Resources Council	Inuvialuit Game Council
Beverly and Qamanirjuaq Caribou Management Board	Inuvialuit Joint Secretariat
Canadian Arctic Resources Committee	Inuvialuit Land Administration
Canadian Association of Petroleum Producers	Inuvialuit Regional Corporation
Caribou Pass Outfitters Ltd.	Inuvik Métis Local #62
Charter Community of Arctic Red River	J. Group (Peterson's Point Lake Lodge)
Charter Community of Déljñę	Jean Marie River First Nations
City of Yellowknife	Joint Review Panel Manager
Community Government of Behchokò, Tłjchq Government	Ka'a'gee Tu first Nation
Community Government of Gamèti, Tłjchq Government	K'ahsho Got'ine Charter Community Council
Community Government of Wekweètì, Tłjchq Government	K'atlodeeche First Nation
Community Government of Whatì, Tłjchq Government	Liidlii Kue First Nations
CPAWS Northwest Territories	Mackenzie Gas Project (Regional offices)
Deh Gah Gotie Dene Council	Mackenzie Valley Environmental Impact Review Board
Dehcho First Nations	Mackenzie Valley Land and Water Board
Dehcho Land Use Planning Committee	MLAs
Déljñę First Nation	Nahanni Butte Dene Band
Déljñę Land and Financial Corporation	Nihtat Gwich'in Renewable Resource Council
Déljñę Renewable Resources Council	Norman Wells Land Corporation
Denehdeh National Office	Norman Wells Renewable Resources Council
Deton' Cho Corporation	North Slave Métis Alliance
Ecology North	Northern Gas Project Secretariat (Yellowknife and Norman Wells)
Ehdiitat Gwich'in Council	Northwest Territory Métis Nation
Ehdiitat Renewable Resource Council	NWT and Nunavut Chamber of Mines
Enodah Wilderness Travel Ltd.	NWT Tourism Association
Environmental Impact Review Board Joint Secretariat – Inuvialuit Renewable Resource Committees	NWT Wildlife Federation
Fort Norman Métis Land/Financial Corporation	Paulatuk Hunters' and Trappers' Committee
Fort Providence Métis Local #57	Pehdzeh Ki First Nation
Fort Providence Resource Management Board	Qaivik Ltd.
Fort Simpson Métis Local #52	Rabesca's Resources Ltd.
	Resident hunters
	Sachs Harbour Hunters' and Trappers' Committee
	Sahtú Land and Water Board

Sahtú Land Use Planning Board	Tulít'a Land and Financial Corporation
Sahtú Renewable Resources Board	Tulít'a Renewable Resources Council
Sahtú Secretariat Incorporated	Wek'èezhìi Land and Water Board
Sambaa K'e Dene Band	Wek'èezhìi Renewable Resources Board
Tetlit Gwich'in Council	West Point First Nation
Tetlit Gwich'in Renewable Resource Council	Wildlife Management Advisory Council (NWT)
Tìjchq Renewable Resources Committee	Yellowknife Shooting Club
True North Safaris Ltd.	Yellowknives Dene First Nation (Dettah)
Tuktoyaktuk Hunters' and Trappers' Committee	Yellowknives Dene First Nation (N'Dilo)
Tulít'a Dene Band	Yellowknives Dene First Nation

Appendix E: ENR Response Regarding Confidence in Caribou Population Estimates

“Prior to 2000, the Cape Bathurst, Bluenose-West and Bluenose-East barren-ground caribou herds were considered to be one herd and so were surveyed as such using post-calving surveys in 1986, 1987 and 1992. Since 2000, these herds have been surveyed individually based on ENR’s understanding that the Cape Bathurst, Bluenose-West and Bluenose-East herds are three separate herds.

Pre-2000 survey data was reanalyzed in an attempt to provide earlier population estimates for each of the three herds. This reanalysis was based on 1) minimum counts; 2) where photographed groups of caribou were found and counted; and 3) which of the three herds the collared caribou and the groups they were associated with were assigned to. Any reconstructed results should be treated with caution because the original survey design was intended to get population estimates for one herd, not three individual herds. As a consequence, the number of collars used to estimate individual herd size was often too low pre-2000 to provide precise estimates – or in some instances – any estimates of herd size.

ENR’s minimum counts and reconstructed estimates of pre-2000 survey results are as follows:

- The Cape Bathurst herd likely ranged, at minimum, between 13,000-16,000 caribou between 1986 and 1992 but may have exceeded 20,000 caribou at its peak size.
- The Bluenose-West herd likely ranged, at minimum, between 90,000-110,000 between 1986 and 1992.
- There were too few collars and associated groups of caribou during any of the pre-2000 surveys to derive credible population estimates for the Bluenose East herd.

ENR continues to pursue more accurate ways of collecting and analyzing survey data so that our management actions are based on the best information possible. ENR is currently undertaking a review of all of its population estimates for the Cape Bathurst, Bluenose-West, and Bluenose-East herds in light of a more recent population estimator that yields more precise estimates of herd size (the Rivest estimator). This estimator has, in recent years, been adopted by Alaskan biologists for their post-calving caribou surveys. After this review is complete, ENR will provide an updated series of population estimates for the three herds for the ACCWM to review. It is not anticipated that this review will change ENR’s current understanding of herd trends since the 1980s.” (Email correspondence, Aug. 1, 2013).

Appendix F: Land Use Planning Processes and Protected Areas in the Range of the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds

Protected areas and land use plans are intended to control where certain activities can take place. They therefore help determine what the human impacts on the landscape will be. They are important tools for carrying out stewardship activities such as conserving biodiversity, wildlife habitats, species at risk, ecological processes, cultures and traditional lifestyles.

Since 1999, the NWT has had a Protected Areas Strategy – a partnership among communities, governments, environmental non-governmental organizations and industry – working together to establish protected areas across the NWT. The goals of the NWT Protected Areas Strategy are to protect:

- Special natural and cultural areas of the NWT, and
- Core representative areas within each ecoregion of the NWT, in which resource based development will not be permitted.

Land Use Plans¹⁷

Settled land claims increase capacity and clarify the process for local decision-making, and therefore can facilitate local stewardship. In some areas in the NWT with settled land claims, regional land use plans have been or are being prepared. These regional land use plans specify which land use activities are allowed in a given area.

The Inuvialuit Final Agreement does not provide for a Land Use Planning Board to develop a plan for the Region. However, the WMAC (NWT) produces community conservation plans. These plans reflect community concerns and expectations about the acceptable level of impacts on various landscapes. Updated versions were released in 2008.

¹⁷ See http://www.enr.gov.nt.ca/_live/pages/wpPages/soe_protected_areas_land_use_plans.aspx

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 has prepared a comprehensive land use plan for the SSA that guides how the land and its resources are used. This was approved in 2013. It designates three categories of land: conservations zones where no development is permitted; special management zones where development respecting identified values is permitted; and general use zones where development is permitted subject to general conformity requirements. There is a general conformity requirement for Fish and Wildlife that takes into account the importance of caribou to Sahtú communities. In addition, the SLUP maps caribou ranges and provides information on zones of with important caribou habitat.

The Tłıchq Agreement provides for the Parties to agree to establish a mechanism for land use planning in Wek' èezhii (Tłıchq Region), or for government to do so for lands other than Tłıchq lands. Currently there is no land use planning body or mechanism for Wek' èezhii. The Tłıchq Agreement also empowers the Tłıchq Government to enact laws on Tłıchq Lands, including land use plans. On April 29, 2013 the Tłıchq Government enacted the Tłıchq Land Use Plan Law, which came into effect on June 1, 2013. The Tłıchq Land Use Plan establishes five zones: a land exclusion zone where no development will be considered, a habitat management zone, a traditional use zone, a cultural heritage zone and an enhanced management zone. Each zone has a stated goal and objectives, and a list of land uses that will be considered. The plan also includes several Land Protection Directives that are:

- Development proposals are to have minimal impact on wildlife and habitat,

- The Tłıchq Government will develop a strategy to minimize impacts to caribou and habitat that takes into account seasonal ranges, best management practices, herd status and cumulative disturbance on the range,
- The Tłıchq Government will develop an approach that supports long-term conservation and resilience of migratory caribou
- Limits on the number of projects to address cumulative effects on wildlife.

There is a land use planning process underway in the Dehcho Territory also.

In Nunavut several Institutes of Public Government work together to control the exploration and development of land. The Nunavut Planning Commission (NPC) is responsible for land use planning; the Nunavut Impact Review Board (NIRB) plays a vital role in conducting Environmental Impact Assessments; while the Nunavut Water Board (NWB) is responsible for the licensing and permitting of any water use. The Nunavut Wildlife Management Board (NWMB) provides recommendations to the other Institutes of Public Government with respect to the management of wildlife. Through its Habitat Management and Protection Program the NWMB will maintain the necessary role of ensuring the sound management and protection of Nunavut's terrestrial and marine wildlife habitats. The NPC has developed a Draft Nunavut Land Use Plan (DNLUP) to guide and direct resource use within the Nunavut Settlement Area. Goals of the Plan include preserving the integrity of the natural environment and avoiding the disruption of ecosystems. The DNLUP includes Land Use Designations that identify prohibited uses, and Land Use Recommendations that advise proponents on issues to consider when working in particular areas. More information on the DNLUP can be found on the NPC's website (www.nunavut.ca).

Approved land use plans are legally binding on all parties. However, legislation requires land use plans be reviewed every five years and they can be changed at that time.

Protected Areas

Herd ranges encompass established and proposed protected areas. Tukturnogait 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 Tukturnogait are ongoing with Kugluktuk, Kitikmeot Inuit Association, and the Nunavut Planning Commission.

Edajjila is a prominent peninsula on the east shore of Great Bear Lake which is an important area culturally and for the Bluenose-East caribou. Edajjila has been proposed for formal protection by the Délıne Land Corporation, and is identified as a conservation

zone in the draft Sahtú Land Use Plan. Saoyú-?ehdacho National Historic Site of Canada protects the two westernmost peninsulas on Great Bear Lake. The land is co-managed by the Saoyú-?ehdacho Cooperative Management Board and Parks Canada.

Ezòdzitì is an area protected through the Tłı̨chò Final Agreement for its historical and cultural importance. The area, which encompasses approximately 1,374 km² of settlement land, is protected from non-renewable resource development.

Further information on parks and protected areas within the range of these caribou is available in the *Scientific Report*, as well as online sources such as:

- Northwest Territories Protected Areas Strategy: <http://www.nwtpas.ca/>
- ENR's Protected Areas and Land Use Plans: http://www.enr.gov.nt.ca/live/pages/wpPages/soe_protected_areas_land_use_plans.aspx
- Inuvialuit Community Conservation Plans: <http://www.jointsecretariat.ca/documents.html>
- Gwich'in Land Use Planning Board: <http://glwb.com/>
- Sahtú Land Use Plan: <http://www.sahtulanduseplan.org>
- Tłı̨chò Land Use Plan: http://tlichoc.ca/sites/default/files/105-LandUsePlan_FINAL%20VERSION%5B2%5D_0.pdf
- Nunavut Parks: <http://nunavutparks.ca/>
- Parks Canada: <http://www.pc.gc.ca/eng/progs/pn-np/index.aspx>

Appendix G: Advice Regarding Protection of Caribou Herds and Habitat within the Range of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou

Traditional knowledge in the range of these caribou indicates that caribou have their own ways of looking after themselves – for example, they adapt to changes in food availability or quality by shifting their migration routes. There is evidence both in oral histories and from scientific studies that caribou numbers can go through very big cycles over time, and that caribou have recovered or come back after declines or moving away numerous times.

Nonetheless, caribou today face changes in the landscape that they have never experienced before. Human activities are having an increasing impact in the north that includes new developments as well as the cumulative effects of many decades of development. No one yet knows how well the caribou will be able to weather these changing environments and conditions.

There are some things people can do to minimize negative impacts of development on caribou; these occur at several levels, spanning community, regional, and federal responsibilities and authority. On the next pages we have summarized some of the types of advice and recommendations that are often provided as a means of ‘taking care of caribou’. Three tables follow:

- 1. Government Standard Advice for Wildlife Disturbance and Harassment and/or Barriers to Wildlife Movement**
- 2. Advice from ACCWM Wildlife Management Boards for Protecting Caribou and Caribou Habitat**
- 3. Advice from Communities for Protecting Caribou and Caribou Habitat**

It is important to note that this is not a comprehensive list of all the types of advice and recommendations that may be provided in the NWT and Nunavut; these are just some summarized examples provided by several organizations and agencies. We have also included any advice or recommendations that was provided by community members during the public engagement process.

Currently, new regulations are being developed as a result of the new NWT Wildlife Act that may have additional advice or requirements for reference. These are not included in the table, nor are items from the Government of Nunavut Wildlife Act and Nunavut Land Claim Agreement.

1. Government Standard Advice for Wildlife Disturbance and Harassment Potential Effect or Issue Category			
Government Agency	Potential Effect or Issue	Source	Mitigation Measure
Environment and Natural Resources, NWT	Wildlife Disturbance and Harassment; Barriers to Wildlife Movement	GNWT-ENR Standard Recommendations provided to Land and Water Boards and Developers for Land Use Permit and Water Licence Applications	<p>General –</p> <p>Section 56 of the Wildlife Act indicates that no person shall, without a permit or license, engage in an activity that is likely to result in a significant disturbance to big game or other prescribed wildlife; or chase, fatigue, disturb, torment or otherwise harass wildlife.</p> <p>If caribou groups > 50 are encountered during development the proponent should shut down operations if they approach within 500m. Suspended activities include drilling, aircraft over flights (<300m), and vehicle, ATV or snowmobile use outside the vicinity of the camp. When caribou are further than 500m away operations may resume. All activities must yield to caribou on rights-of-way. The proponent is required to contact ENR, local elders and active harvesters familiar with the area on possible water crossings or other ecologically sensitive caribou habitat.</p> <p>The proponent is required to determine when caribou migration activities occur in the vicinity of the project area based on the most recent data supported by caribou collar data and photo census. If the project falls within caribou migration ranges development activities must cease when caribou are present.</p> <p>Caribou Calving –</p> <p>The Permittee is encouraged to contact and verify with ENR to determine the distribution of pregnant females and calves prior to the commencement of the operations (approx. March 15 - May 25).</p> <p>Water Crossings – General</p> <p>No development can occur within 1km of known caribou water crossing from May 15th till Oct 15th. Where there are known traditional caribou water crossings, development activity should not occur within 1 km during the season when the crossing is likely to be used. Construction of infrastructure should avoid these sites within a distance of 1 km.</p> <p>Water Crossings – Seismic or Blasting</p>

			<p>No blasting or seismic activity can be conducted within 10km of recognized caribou water crossing from May 15th till Oct 15th.</p> <p>Water Crossings – Mineral Exploration, Diamond Drilling</p> <p>No diamond drilling activity can be conducted within 5 km of recognized caribou water crossing from May 15th till Oct 15th.</p> <p>Vehicle/Equipment Use –</p> <p>Caribou must not be harassed by vehicles. Snowmobiles and other vehicles must not approach within 250m of caribou.</p> <p>Aircraft –</p> <p>Maintain minimum altitudes of no less than 300m at all times other than landing or taking off. Wildlife cannot be approached closer than 500m, chased or harassed by aircraft or other motorized vehicles.</p>
<p>Aboriginal Affairs and Northern Development Canada (AANDC)</p>	<p>Caribou calving - Caribou Protection Areas</p>	<p>Department of Indian Affairs and Northern Development Caribou Protection Measures (CPM)</p>	<p>1. (a) The Permittee shall not, without approval, conduct any activity between May 15 and July 15 within the Caribou Protection Areas depicted on the map certified by the Engineer as the “Caribou Protection Map” and annexed to this Land Use Permit.</p> <p>(b) A Permittee may, upon approval by the Land Use Inspector, operate within the said Caribou Protection Areas beyond the May 15 deadline set out in 1(a), provided that, when monitoring information indicates that caribou cows are approaching the area of operation, the Permittee will implement 1(c).</p> <p>(c) On cessation of activities pursuant to 1(a) or 1(b), the Permittee will remove from the zone all personnel who are not required for the maintenance and protection of the camp facilities and equipment, unless otherwise directed by the Land Use Inspector.</p> <p>(d) The Permittee may commence or resume activities prior to July 15 within those parts of the Caribou Protection Areas released by the Land Use Inspector for the reason that caribou cows are not expected to use those parts for calving or post-calving (note 1).</p> <p>2. (a) In the event that caribou cows calve outside of the Caribou Protection Areas, the Permittee shall suspend operations within the area(s) occupied by cows and/or calves between May 15 and July 15.</p> <p>(b) In the event that caribou cows and calves are present, the permittee shall suspend: (i) blasting; (ii) overflights by aircraft at any altitude of less than 300 meters above ground level; and (iii) the use of snowmobiles and ATVs (all-terrain vehicles) outside the immediate vicinity of the camp.</p>

			<ul style="list-style-type: none"> • The Land Use Inspector’s decision will be based on the existing caribou information. • Concentrations of caribou should be avoided by low-level aircraft at all times. <p>3. (a) During migration of caribou, the Permittee shall not locate any operation so as to block or cause substantial diversion to migration.</p> <p>(b) The Permittee shall cease activities that may interfere with migration, such as airborne geophysics surveys or movement of equipment, until the migrating caribou have passed.</p> <p>4. (a) The Permittee shall not, between May 15 and September 1, construct any camp, cache any fuel, or conduct any blasting within 10 kilometres of any “Designated Crossing” as outlined on the map certified by the Engineer as the “Caribou Protection Map” and annexed to this Land Use Permit.</p> <p>(b) The Permittee shall not, between May 15 and September 1, conduct any diamond drilling operation within 5 kilometres of any “Designated Crossing” as outlined on the map certified by the Engineer as the “Caribou Protection Map” and annexed to this Land Use Permit.</p>
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2. Advice from ACCWM Member Boards for Protecting Caribou and Caribou Habitat		
Wildlife Management Board	Source	Suggested Mitigation Measures
Wildlife Management Advisory Council (NWT)	Community Conservation Plans for Aklavik, Inuvik, Tuktoyaktuk	<p>Caribou/Tuktu Conservation Measures –</p> <ul style="list-style-type: none"> Identify and protect important habitats from disruptive land uses. Avoid shooting mature bulls during the rut. Do not harvest more than is needed. Convey and promote traditional means of using all of each animal harvested, discourage waste of meat. Develop cooperative management relationship between the co-management boards of each relevant land claim group. Harvest on sustainable basis, and in manner consistent with recommendations of the management plans and HTC bylaws. Support the Barren-ground Caribou Management Strategy <p>General and Tourism Guidelines that Apply to Caribou –</p> <ul style="list-style-type: none"> Discourage the use of aircraft for low level (<610 m) (<2,000 ft.) wildlife spotting at any time unless being done in conjunction with authorized research in order to avoid unnecessary disturbance or harassment of wildlife (see also Section 6.3(c)). The total number of tourist operators and/or tourists should be restricted in certain areas at certain times of the year (e.g. nesting and moulting areas for migratory birds, calving areas, denning areas.) Tourists and tourist operators should not handle or harass wildlife. <p>Example of Land Use Category Applications Relevant to Caribou –</p> <p>Category C</p> <p>Lands and waters where cultural or renewable resources are of particular significance and sensitivity during specific times of the year. These lands and waters shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption. (e.g. applies to spring, summer, fall, and winter caribou harvesting areas)</p>

		<p>Category D</p> <p>Lands and waters where cultural or renewable resources are of particular significance and sensitivity throughout the year. As with Category C, these areas shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption. (e.g. applies to Bluenose-West calving grounds, Cape Bathurst calving and post-calving grounds)</p> <p>Category E</p> <p>Lands and waters where cultural or renewable resources are of extreme significance and sensitivity. There shall be no development on these areas. These lands and waters shall be managed to eliminate, to the greatest extent possible, potential damage and disruption. This category recommends the highest degree of protection in this document. (e.g. applies to Bluenose-West winter range)</p>
<p>Gwich'in Renewable Resources Board</p>	<p>Comments and recommendations given on research or development permit applications to proponents and/or to regulatory bodies in response to permit applications</p>	<p>Wildlife/Fish/Plants –</p> <ul style="list-style-type: none"> Report wildlife observations and wildlife encounters during project activities to the GRRB. Report wildlife mortalities to the GRRB and ENR Recommend to suspend operations temporarily if caribou, are spotted within 500m of any work/camp site and to resume once the animal(s) have left the area. Consult with the GNWT Dept of Environment & Natural Resources for advice on seasonal caribou movements to ensure fieldwork does not interfere with migration or use of critical habitat, such as calving grounds. Caribou calving grounds and water crossings should be avoided whenever possible. Adhere to GWNT regulations regarding wildlife harassment Obtain all required appropriate permits and licences (i.e. Wildlife Research Permit, etc.); Do not remove or harm any Species at Risk and to adhere to SARA regulations (assessing adverse effects of the project on listed wildlife species and critical habitat, taking measures to lessen or avoid those effects and to monitor those effects. GRRB also recommends treating species not listed but which are on other schedules of SARA and under consideration for listing on SARA, including those designated as at risk by COSEWIC be considered during an assessment in a similar manner as above.) Do not feed wildlife. Ensure that all employees and visitors are also aware, and do not, feed wildlife. Vegetation around project areas should be documented before work begins.

		<p>Transportation –</p> <p>Adhere to Environmental Impact Screening Committee’s guidelines for minimum altitude of aircraft near wildlife species.</p> <p>GRRB recommends maintaining a minimum flight altitude of at least 650m in order to reduce disturbance to wildlife.</p> <p>Adhere to GWNT regulations regarding wildlife harassment. The GRRB advises that low level flights may harass wildlife. If animals run or alter their behaviour in response to aircraft presence, aircraft should alter course away from the wildlife and/or move to a higher altitude (650m as above, or higher).</p> <p>Give wildlife right of way whenever possible and avoid large congregations. If wildlife are present at landing location, use another location.</p> <p>Recommend not to alter travel path in order to approach animals.</p> <p>Restrict ATV use to existing roads or trails.</p> <p>If snowmobile use is required, contact GNWT ENR to ensure enough snow pack is present to minimize habitat damage and avoid disturbance to organic layers and degradation of permafrost. Stop overland travel of vehicles at first sign of ground rutting or gouging.</p> <p>Ensure the project includes and follows plans to remove fuel drums from re-fueling locations at project conclusion. Ensure fuel storage and containment regulations are followed.</p> <p>In mitigation or reclamation measures or protocols requiring re-seeding, ensure that native seed mixes appropriate for the location and habitat are used. Ensure mixes are weed free to reduce contamination by invasive species.</p> <p>Equipment –</p> <p>Clean all equipment prior to initial use in field to prevent the spread of invasive vegetation species. Remove all equipment prior to the end of the field season each year.</p> <p>Monitors –</p> <p>Local environmental monitors from the communities are encouraged to assist with fieldwork.</p> <p>Spills –</p> <p>Ensure spill kits are available at all sites and report any spills that occur to GRRB in addition to permit requirements to report to regulators. Ensure spill kits are available at fuel storage and re-fueling locations.</p>
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Sahtú Renewable Resources Board		No standardized advice or measures currently available for inclusion.
Wek'èezhii Renewable Resources Board		No standardized advice or measures currently available for inclusion.
Tuktut Nogait National Park Management Board		<p>Reducing disturbance to caribou in Tuktut Nogait National Park (PCA) –</p> <p>Researchers wanting to work within Tuktut Nogait National Park must apply for a Research and Collection Permit. Permit applications go through an internal review process, and require exemption or approval from the Inuvialuit Environmental Impact Screening Committee (EISC). Support from the Paulatuk Hunters and Trappers Committee is also recommended. During the permit review period, Parks Canada provides advice to researchers to reduce impact and disturbance to caribou during their project. Recommendations can include:</p> <ul style="list-style-type: none"> • All flying within park boundaries must adhere to EISC Flight Guidelines (see below) • A landing permit is required and landing locations needed to be communicated in advance. Permit conditions may include minimum landing distances to wildlife. • Access to the park may be restricted at particular times of the year. <ul style="list-style-type: none"> ○ Based on recommendations from the Tuktut Nogait National Park Management Board and the community of Paulatuk, aircraft access to the park was restricted during June and July in 2009 to reduce potential disturbance to calving and post-calving Bluenose West caribou. ○ Since 2009, Parks Canada has continued to make every effort to minimize in-Park flights during calving and post-calving during internal operations and works closely with researchers and other operators to minimize aircraft activity during this period of the year, where possible. <p>All businesses, including aircraft companies and tourism outfitters require a business licence to operate in Tuktut Nogait National Park. All licensed operators agree to comply with the mitigations listed within the Replacement Class Screening Report for Aircraft Landings in the Northern National Parks of Canada (2011), as follows:</p>

		<p>Operators shall:</p> <ul style="list-style-type: none"> • Minimize use of fuel and emissions by reducing the time the aircraft runs on the ground, minimizing the number of flights, and minimizing the amount of time circling before landing. • Ensure certification of noise compliance, if applicable, is current. • Educate visitors about current and appropriate behaviour of aircraft to wildlife. • Never circle, chase, hover over, dive bomb, pursue or in any other way harass wildlife. Aircraft landing permits are not to be used for wildlife viewing or photography. Do not alter the flight path to approach wildlife, avoid flying directly over animals. For passengers requesting photographic opportunities, pilots should explain that disturbance of wildlife could result in loss of business licence or charges under the CNPA. • Avoid congregations of animals. • Maintain a normal flying altitude of 2000 ft when in the air space over the park except for approach to land, take-off or for safety reasons. • Minimize the number of flights whenever possible. • Use small aircraft rather than large aircraft whenever possible. • Use fixed-wing aircraft rather than helicopters whenever possible. • Hovering or circling may greatly increase disturbance and must be avoided. • Caribou calving grounds should be avoided whenever possible. • Animals reactions will depend on a variety of situations including aircraft type, noise levels, speed of travel, over flight frequency, and animal activity (e.g., loafing, feeding, traveling) and its surroundings (water depth and clarity, substrate). <p>Further guidance on flying altitudes for the Inuvialuit region are provided by the Inuvialuit Environmental Impact Screening Committee Flight Guidelines - avoid flying over calving grounds when possible. No aeromagnetic surveys in or near calving and post-calving areas from May 25 to July 15. Minimum 610m. Minimize flights when possible. Use fixed wing rather than rotary, and small aircraft rather than large. Avoid hovering over caribou. Avoid flying over areas known to have large groups of caribou.</p>
<p>Kitikmeot Regional Wildlife Board</p>		<p>No standardized advice or measures currently available for inclusion.</p>

3. Advice from Communities for Protecting Caribou and Caribou Habitat	
Topic	Suggested Mitigation Measures and/or Management Actions
Land Use Activities	<ul style="list-style-type: none"> • Improve collaboration between levels of government to review and comment on land use applications; • Improve community consultations for land use application reviews; • Improve communication flow and ensure a fair time to review land use applications; • Increase resources of regional organizations so they can efficiently review land use applications; • Limit disturbance by exploration activity and aircraft on calving grounds and migration routes; • Increase minimum flying altitude; • Involve the public in reporting aircraft flying low or harassing wildlife (communicate rules and actions to take); • Fence tailing ponds and monitoring of contaminants for at least 15—20 years after mines close (contamination of caribou food). Request money up front; • Protect from pollution on the land and in the water; • Make sure that companies reduce dust emission by exploration, mines, roads and trucks; • Promote a stepped development, such as a limited number of mines at any time (e.g. two to three mines only at a time); • Ensure that road impacts on water and habitat are addressed; • Water quality: community should be informed and mine should be monitored by independent organizations; • Education to reduce garbage on the land, sea and in the community; • Promote a protected area strategy to protect some hunting areas or important wildlife areas from development; • There should be a moratorium on industrial activity on or near calving grounds at any herd status; • Recommend caribou habitat as a "value at risk" for forest fire management, and for land use permits should occur at all caribou population levels.
Predators	<ul style="list-style-type: none"> • Need to monitor wolf condition and amount of caribou that wolves are consuming; • Need to understand predation rates on caribou to consider predator control; • Have monitors on calving grounds to protect calves from predators at this sensitive time; • Exclude predators from important calving areas.

Habitat	<ul style="list-style-type: none"> • Need to protect the areas that are important for caribou feeding; • Limit access to critical or sensitive areas of habitat (e.g. feeding areas); • Promote a protected area strategy to protect some hunting areas or important wildlife areas from development; • Support leaders' action to encourage the USA and Canada to address climate change issues.
Subsistence Harvest Regulations, Practices, Monitoring and Enforcement	<ul style="list-style-type: none"> • Encourage traditional harvesting practices that incorporate respect, no waste, limit wounding loss, letting the leaders pass, etc.; • Limit harvesting when necessary, especially if waste is evident; • Promote community hunts with experienced hunters to reduce wounding loss and wastage of meat; • Balance harvest based on age class and sex of animals, season and use, and traditional knowledge; • Community would rather see something like a ratio of bulls to cows around 80:20 as opposed to bulls only in the orange zone; • Avoid shooting pregnant cows during the spring; • Avoid harvesting cows accompanied by a calf or yearling; select for lone cows; • Hunt in different areas each year; spread hunting out so that areas are not over-hunted; • Get additional funds for harvesters to go elsewhere to hunt; • Provide compensation for limits on caribou harvest in red zone; • Have open season for barren-ground caribou only in March-April when both the bulls and the cows are fat; • Regional organizations like HTOs and RRCs need to consult with their communities about how to limit their harvests – do at a community level so that it can be changed again when the herds rebound; • Recommending a bulls-only or bulls-majority harvest will weaken the herd. The recommendation should be to take the weaker or older individuals, both male and female, to leave the strongest bulls to protect the herd and pass on their strong genes; • Develop new or re-instate former harvest studies in each region; • Develop budgets to hire people to conduct harvest surveys in communities; • Need continuous, accurate harvest reporting in each area, done at least seasonally (e.g. fall and spring); • Accurate records of harvests should be mandatory. RRCs should collect the data, but need boards to coordinate. RRCs need to have public meetings to let people know what they are trying to do by collecting the information; • Should be mandatory harvest reporting or at least ask hunters to volunteer their information about where they went, what they harvested and for whom; • Issue books or calendars for harvesters to record their information, which would be useful to both traditional knowledge and science;

	<ul style="list-style-type: none"> • Need better harvest monitoring and enforcement at all times; • Have monitors on the highway – RRC members and people from the community watching to make sure hunting is proper, safe, and people are taking only what they need; • Park Rangers keep a log of hunters and fish taken – do this where possible; • Need to develop way to patrol or enforce harvesting restrictions when/where caribou are very accessible to communities; • Need to develop a way to penalize poaching; • Need plan to address enforcement requirements for compliance with caribou harvest regulations; • Develop a quota system to allow the herds to increase; • Abandon zone system in favour of quotas; • Communities close to calving grounds especially need a tag system in place.
<p>Non-Subsistence Harvesting</p>	<ul style="list-style-type: none"> • Need to address what are seen as inequities in how harvest restrictions have been applied; • Need to address when harvests should be considered commercial and/or allowed; people are harvesting and selling caribou in some places; • Need to restrict sport hunt and commercial hunts; • Quotas need to be determined based on the number of people in each community; • Harvesting restrictions need to be consistent for conservation purposes and for fairness; • Consider reallocation of tags, within season, depending on whether quotas are being met; • For the sports hunt, they target the largest, strongest bulls, but they are important and should be left in the herd to pass on their genes (yellow or green status); • Need consistent sport hunting regulations across the range of the herds to protect them effectively (e.g. hunters will cross the border to hunt in Nunavut when regulations differ from NWT); • Regional organizations need to pass motion to stop sports hunting in areas where too many bulls are being removed from the population; • Manage harvest composition for commercial harvest (meat sale, sport hunt); • Commercial harvest is easier to monitor and regulate and if necessary, the composition of the harvest (sex and age classes) can be regulated.

Food Replacement and Sharing	<ul style="list-style-type: none"> • Arrange alternate food/meat packages (e.g. from Stantons) in red zone; • People should switch to buffalo, reindeer and/or muskox where possible to take some pressure off caribou; • Look into possibility of increasing reindeer herd to provide alternate meat source; • Harvest of alternate species will have to be monitored, as Dall's sheep, Porcupine caribou, woodland caribou, and moose harvests may increase if Bluenose herds harvesting decreases; • Elders say that if it is hard to get caribou, people should go to lakes to get fish; • Develop community-based programs that subsidize resources (e.g. gas) to enable people to get meat for elders; this would save money and help know how much is being hunted; • Compensate with fish; • The ACCWM should look into selling caribou among settlement areas. The Dene practice is to share meat with elders and other people in the community, including non-Aboriginal people; • Share meat from outfitters and send to other communities; • Need to have more meat sharing among people, including where non-Aboriginal people hunt with Aboriginal people; • Having a community freezer can help keep the harvest constant. • Barter or trade between community members or between communities is against the principles of traditional knowledge – it should be sharing between people who have access to the resources and those who do not; • It is a good idea to share meat between communities when it is available in one area and not another, but to send enough to help the people in another community is extremely expensive, even with the reduced shipping rate on country foods; • The concept of community freezers should be revisited. People who need the meat can go there and get some, it promotes sharing, and older hunters can meet others there to help show them how to prepare and preserve the meat properly.
Communication and Education	<ul style="list-style-type: none"> • Need to coordinate land use planning and activities across the entire annual range of herds to ensure that habitat is conserved for caribou; • Co-management and cooperation between parties is key to the success of a plan like this. Discussions should occur regularly between managers and resources users from different jurisdictions if they are going to effectively co-manage the same resources/herds; • Co-management boards need to improve communication with community members, for community members to be able to make informed decisions and participate in the management process; • Communicate with regional organizations (e.g. HTO) and communities on important topics such as protecting calving grounds, and take messages to higher levels of government;

- Overall, improved communication is needed between higher levels of government, regional organizations and communities regarding wildlife information, research results and management consultation;
- Need to have public meetings about the caribou situation;
- All user groups need to be at the meetings;
- Some elders and community members are not receiving information about the Management Plan;
- A good communication strategy is important (e.g. use radio and television stations; bring translators to meetings for elders; get signs on the winter road to remind people to respect caribou;
- It is important to keep the community updated on research results and management decisions. There has to be emphasis on maintaining constant contact with the communities;
- More people need to come to meetings to share their knowledge and get education about what is going on with caribou;
- More effort should be made to get more people out to participate;
- Use community hunts to teach un-experienced hunters how to select, harvest and butcher caribou;
- Teach good harvesting practices using elders and traditional knowledge, both in the class room and through on the land experience;
- Need to educate people regarding: safety while hunting, which rifles to use and how to use them, accurate targeting, how to sight rifles, how to properly track animals, kill them efficiently, and skin them, prepare the meat, reduce waste, proper use and storage of meat, sharing, avoiding meat wastage and wounding; this should include when to harvest what types of caribou (for example, the meat from males is not good in the fall during the rut);
- This education should include school visits starting in kindergarten, but there is also a need to reach those that are older and have finished school. It was recognized that the education is largely a community responsibility – it should be learned from parents and grandparents, but it was suggested that sponsors of the Management Plan could assist with some of the costs of these educational sessions and workshops as part of their community involvement / education;
- It is also important to educate industry on how to avoid harassment and to properly monitor and record wildlife observations. These records should be shared with the local HTO and RRC offices;
- Make hunter safety and training part of the school curriculum;
- Create educational video and distribute;
- Create hunter education programs that focus on young hunters and new residents, but also provide training for others (e.g. evening classes);
- Need to also teach about safety when hunting;

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| | <ul style="list-style-type: none">• Get people to understand their responsibility towards wildlife;• Promote their active participation in developing and implementing management actions;• Request leadership from community elders;• Conservation education should be emphasized in the plan at all stages, not just when the herd is declining. |
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