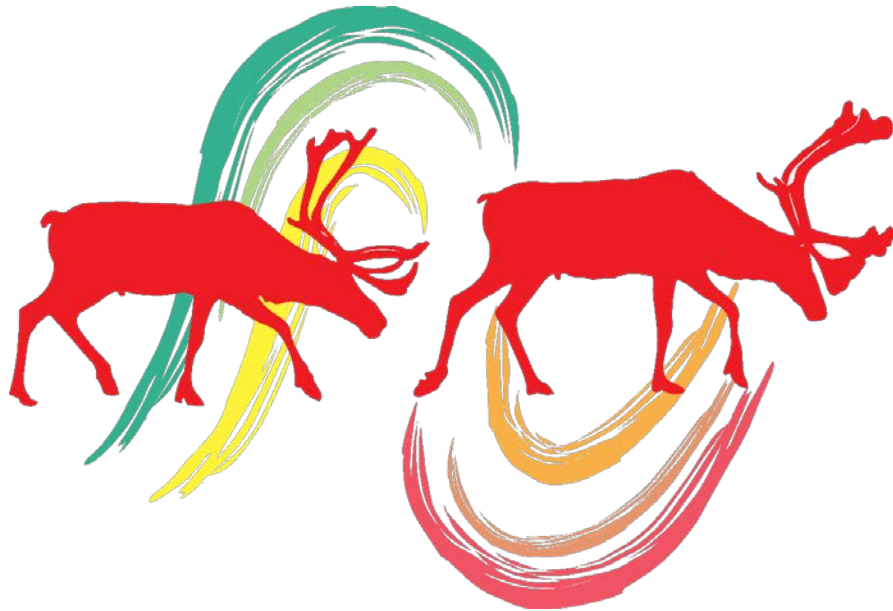


**ACCWM Annual Status Meeting Summary
November 20–22, 2018**

**CAPE BATHURST CARIBOU
BLUENOSE-WEST CARIBOU
BLUENOSE-EAST CARIBOU**



**Prepared by the Advisory Committee for
Cooperation on Wildlife Management**

June 2019

Suggested citation:

Advisory Committee for Cooperation on Wildlife Management. 2018. Annual Status Meeting Summary for the Cape Bathurst, Bluenose-West and Bluenose-East Caribou Herds. Yellowknife, NT.

Production note:

This meeting summary was prepared by the Advisory Committee for Cooperation on Wildlife Management Working Group. For additional copies contact:

Advisory Committee for Cooperation on Wildlife Management
c/o Wek'èezhì Renewable Resources Board
102 A 4504 49th Avenue, Yellowknife, NT X1A 1A7 Tel.: (867) 873-5740 Fax: (867) 873-5743
Email: jpellissey@wrrb.ca

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'jneᑕ Gots'ë Nákedı (Sahtú Renewable Resources Board), Wek'èezhì Renewable Resources Board, Kitikmeot Regional Wildlife Board, and Tuktut Nogait National Park Management Board.



About *Taking Care of Caribou* and the associated Action Plans

In late 2014 and early 2015, members of the ACCWM approved *Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan*. The Plan was developed in consultation with 17 communities that harvest from the three herds. The intent is for the Plan to address caribou management and stewardship over the long term. It was presented to the Minister of Environment and Natural Resources (Government of the Northwest Territories), the Minister of Environment (Government of Nunavut), and the Environment Minister (Government of Canada) in 2014. The Management Plan is supported by two companion documents: a report summarizing recent scientific information about the herds, and a report that provides a summary of the information that was shared during community meetings to develop the Plan. Individual Action Plans were then developed for each of the three herds. These Action Plans provide details on the types of actions that are recommended based on a herd's status, as well as who is responsible for the actions, and when they should be done.

Disclaimer:

The ACCWM recognizes that the implementation of management actions moving forward is subject to appropriations, prioritizations, and budgetary restraints of the participating agencies and organizations.

Contents

Contents	i
Tables	ii
Acronyms Used in This Plan	iii
Introduction	4
Management and Action Planning Overview	5
Roles and Responsibilities	7
How a Herd’s Status and Appropriate Management Actions Are Determined	8
Communications	9
Cape Bathurst Status Assessment	10
Understanding Current Cape Bathurst Herd Status	11
The 2019 Management Setting	11
Status Decision 2018	11
Presentations Given at the 2018 Annual Status Meeting	13
Inuvialuit Community Knowledge Presentation	13
Gwich’in Community Knowledge Presentation	14
Presentation on Scientific Information	14
Table 5: Criteria used to assess Cape Bathurst herd status in 2018	21
Bluenose-West Status Assessment	27
Understanding Current Bluenose-West Herd Status	28
The 2019 Management Setting	28
Status Decision 2018	28
Presentations Given at the 2018 Status Meeting	29
Inuvialuit Community Knowledge Presentation	30
Gwich’in Community Knowledge Presentation	31
Tuktut Nogait National Park Management Board Presentation	31
Sahtú Community Knowledge Presentation	31
Presentation on Scientific Information	32
Table 11: Criteria used to assess Bluenose-West herd status in 2018	37
Bluenose-East Caribou	49
Understanding Current Bluenose-East Herd Status	50
The 2019 Management Setting	50

Status Decision 2018	51
Presentations Given at the 2018 Annual Status Meeting.....	52
Sahtú Community Knowledge Presentation	52
Kugluktuk Community Knowledge Presentation.....	53
Tłjchq Community Knowledge Presentation.....	54
Presentation on Scientific Information	54
Table 13: Criteria used to assess Bluenose-East herd status in 2018	55
Appendix A: List of ACCWM Working Group Members	60
Appendix B: Terms of Reference for the ACCWM Annual Status Meeting.....	61
Appendix C: Communication Plan	64
Appendix D: Background to Some Survey Information Used in the Action Plans.....	69
Scientific Knowledge: Background to post-calving survey methods.....	69
Traditional and Community Knowledge: 2018 community engagement or survey methods	70
Appendix E: Determining Allocations and Total Allowable Harvests	70

Tables

Table 1: CB Rivest population estimates (2000–2018).....	15
Table 2: Results from hunter harvest body condition sampling for Tuktoyaktuk Peninsula and Cape Bathurst caribou combined.....	18
Table 3: Results from hunter-collected back fat and health sampling for the Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined.....	19
Table 5: Number of wolf carcasses/samples submitted to ENR by Tuktoyaktuk and Inuvik hunters, 2007–2017.	20
Table 6: Criteria used to assess Cape Bathurst herd status in 2018.....	21
Table 7: BNW Rivest population estimates (2000–2018).....	32
Table 8: Results from hunter-harvest body condition sampling for Bluenose-West caribou.....	35
Table 9: Results from hunter-collected back fat and health sampling for the Bluenose-West caribou herds combined.	35
Table 10: Harvest data for Bluenose-West collected by ENR, Inuvik Region since quota implementation in 2007.....	36
Table 11: Number of wolf carcasses/samples submitted to ENR by Paulatuk hunters, 2007–2018.....	37
Table 12: Criteria used to assess Bluenose-West herd status in 2018	37
Table 13: BNE Rivest population estimates (2000–2018).	54
Table 14: Criteria used to assess Bluenose-East herd status in 2018	55

Acronyms Used in This Plan

ACCWM (WG)	Advisory Committee for Cooperation on Wildlife Management (Working Group)
CI	Confidence Interval
DoE	Department of Environment, Government of Nunavut
ENR	Department of Environment and Natural Resources, GNWT
GN	Government of Nunavut
GNWT	Government of the Northwest Territories
GRRB	Gwich'in Renewable Resources Board
HTC	Hunters and Trappers Committee
HTO	Hunters and Trappers Organization
ISR	Inuvialuit Settlement Region
ITH	Inuvik-Tuktoyaktuk Highway
NWMB	Nunavut Wildlife Management Board
NWT	Northwest Territories
PCA	Parks Canada Agency
RRC	Renewable Resources Council
SE	Standard Error
SRRB	Sahtú Renewable Resource Board
TAH	Total Allowable Harvest
TG	Tłıchq Government
TNNPMB	Tuktut Nogait National Park Management Board
WEMP	Wildlife Effects Monitoring Plan
WMAC (NWT)	Wildlife Management Advisory Council (Northwest Territories)
WWHPP	Wildlife and Wildlife Habitat Protection Plan

Introduction

This **ACCWM Annual Status Meeting Summary** was developed by wildlife management boards with stewardship responsibilities for barren-ground caribou and their habitat in the Northwest Territories and Nunavut.¹ It is part of a collaborative management planning process that has involved 17 communities in six land-claim areas over the last ten years. It is a companion document to the Action Plans describing the specific actions for each herd that will carry out the **principles** and goals outlined in *Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan (November 3, 2014)*. This document summarizes the traditional and local knowledge and scientific information presented at the 2018 Annual Status Meeting, methods used by the Boards to collect information for the monitoring tables, and other relevant information pertaining to the Annual Status Meeting.

Members of the Advisory Committee for Cooperation on Wildlife Management (ACCWM) approved *Taking Care of Caribou* (the Management Plan) in late 2014 and early 2015. The ACCWM presented the Plan to the Minister of Environment and Natural Resources (Government of the Northwest Territories), the Minister of Environment (Government of Nunavut), and the Environment Minister (Government of Canada) in 2014. The intent is for the Plan to address management activities and caribou stewardship over the long term. The plan describes the consensus-based approach, herd definitions, principles, and goals that guided the process. It provides a framework for **Monitoring** the herds, making decisions, and taking action. Five different categories of

Management Plan **principles**:

- Management decisions will respect treaties and land-claim agreements and Aboriginal harvesting rights in areas both with and without a land-claim agreement
- Management decisions will reflect the wise use of the herds in a sustainable manner
- Adequate habitat (quantity and quality) is fundamental to the welfare of the herds
- Management decisions will be based on the best available information – 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 must 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 (*Taking Care of Caribou*, p. 12)

¹ Throughout the Management Plan and Action Plans, the terms ‘wildlife management boards’ or ‘member boards’ refer to the six boards which are members of the Advisory Committee for Cooperation on Wildlife Management.

management actions are outlined in the Plan, including **Education**, **Habitat**, **Land Use Activities**, **Predators**, and **Harvest Management**.

Separate Action Plans were developed for each of the three herds. These Action Plans lay out specific objectives, tasks, and priorities for the herds. They also provide further details on the parties responsible for management actions, as well as how and when these actions will be carried out. The Action Plans are based on the best current information available, but are designed to be “living documents” to allow for the adjustment of tasks as new information becomes available. They are intended to be in place for three to five years, but are reviewed annually and may be revised as needed. Action Plans for 2017/18 and 2018/19 were developed after the ASMs. In 2018, the ACCWM decided to write a meeting summary and then separate action plans that focus on the action tables for each herd.

The ultimate goal of the ACCWM *Taking Care of Caribou Process* (the Management Plan, Annual Status Meeting Activities, Meeting Summary and the Action Plans) 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 (*Taking Care of Caribou*, p. 12).

Management and Action Planning Overview

Stewardship planning for the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds is founded on an “adaptive management cycle”. This means that there are ongoing efforts to monitor and assess the results of management actions, adapt when things aren’t working well, use what is learned to shape future actions, and share that information with others. This is an important process in being able to gauge the success of management actions. Figure 1 shows a diagram of the adaptive management cycle.

Issues thought to be affecting barren-ground caribou have been identified collaboratively through both scientific research and community engagement. Certain factors, such as climate change, are difficult to influence, but all require cooperation and coordination



Figure 1: Diagram showing the process of an adaptive management cycle (figure from Weeks, R., and S. Jupiter. 2013. Adaptive Comanagement of a Marine Protected Area Network in Fiji. *Conservation Biology*, Vol. 27, No. 6: 1234-1244.)

for effective action. The Management Plan was developed because the ACCWM identified a need to:

- Develop a cooperative approach to management for the herds,
- Protect the habitat in the herds' range, and
- Make decisions on the shared harvests in an open and fair manner (*Taking Care of Caribou*, p. 6).

The Management Plan provides an overall framework for how this cooperation can take place. An inclusive, consensus-based approach is used at all stages of the planning process. Sometimes, management topics can be controversial and coming to an agreement is challenging. In order to honour differing perspectives yet still move ahead with planning, it was decided to be transparent about differences and acknowledge them as unresolved **'hot topics'** that are likely to require further work. To increase understanding and help us remain aware and respectful of differences in points of view throughout the planning cycle, the Action

Hot topics presented in the Management Plan include:

- Defining Caribou Herds
- Exchange or Movement between Caribou Herds
- Caribou Collaring
- Perspectives on Harvesting and Harvest Monitoring
- Predator Control Programs
- Priorities for Harvest Allocation
- Cow vs. Bull Harvests

Sharing Perspectives: Naming Caribou

Each Indigenous region in NWT and Nunavut has a traditional name for barren-ground caribou. Some within Bluenose-East range include: tuktuvialuk, tuktut, ɤedə, ɤekwé, and ɤekwò in Inuvialuktun, Inuinnaqtun, K'áhsho Got'ìne/Dela Got'ìne, Délìne Got'ìne, and Tłìchq dialects and languages. Indigenous names are mostly based on an understanding that 'caribou are caribou' – that is, that there are no real differences amongst herds. As a result, Indigenous names tend not to reflect scientific understandings or naming protocols of distinct herds based on calving grounds.

To coordinate management actions across different regions, we needed to develop a shared understanding of which caribou we were talking about. ACCWM members agreed to use the scientific definition of three herds and prepare separate action plans with specific management directives for Cape Bathurst, Bluenose-West, and Bluenose-East caribou. The framework and principles laid out in the Management Plan apply to the entire range of the three herds together.

These differences in language and points of view can lead, at times, to confusion in co-management settings. As a result, some Indigenous communities are developing more specific terms to differentiate among herds. For example, Délìne has suggested ɤehdaɤla Goɤekwé as an appropriate Délìne Got'ìne term for barren-ground caribou within Bluenose-East range. Similarly, the Tłìchq term Sahtì ɤekwò more clearly describes caribou within the area of Sahtì (Great Bear Lake).

While it is acknowledged and respected that the use of correct Indigenous names can help to convey traditional understandings of caribou, because these Action Plans span several regions, incorporating first languages into the main body of the plans is challenging. As the ACCWM refines the action planning process and regions expand their inputs, inclusion of Indigenous languages and perspectives may evolve over time.

Plans include information on **‘sharing perspectives’**. These are glimpses into some of the ways in which our culture, training or beliefs influence our approach to management or our worldview. They are based on discussions that arose during planning and are intended to provide further insights into the ‘hot topics’ described in the Management Plan.

Each ACCWM member board is responsible for approving Action Plans for implementation within its region. Once an Action Plan is approved, it is submitted to the appropriate governments and other parties for implementation. All member boards recognize that implementation of the Action Plans needs to be collaborative, effective only with community input and support.

Roles and Responsibilities

The **Advisory Committee for Cooperation on Wildlife Management** was established in 2008 to exchange information, help develop cooperation and consensus, and make recommendations regarding wildlife and wildlife habitat issues that cross land-claim and treaty boundaries. The chairpersons of six wildlife management boards make up the ACCWM.

The ACCWM member boards have authority through land claim and other 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 work towards consensus-based recommendations to governments regarding caribou management actions. However, ACCWM recommendations do not prohibit individual boards from providing additional recommendations, nor are individual boards bound by ACCWM recommendations.

Early in 2015 the ACCWM established a Working Group to prepare draft Action Plans for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds. The members of this Working Group are included in **Appendix A**. It is important to note that the success of the Management Plan and associated Action Plans is not just the responsibility of the ACCWM and its Working Group, but also relies on the cooperation of multiple partners. Potential government partners include the Government of the Northwest Territories, Government of Nunavut, Parks Canada Agency, Tłı̨chǫ Government, and other Aboriginal Governments. Regional partners, which vary significantly by region, may include individual community members, community organizations such as Renewable Resource Councils (RRCs), Hunters and Trappers Committees and Organizations (HTCs and HTOs), and regional organizations.

The **Advisory Committee for Cooperation on Wildlife Management** consists of the Chairpersons (or alternate appointees) of:

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

How a Herd's Status and Appropriate Management Actions Are Determined

The ACCWM is responsible for determining herd status each year and developing appropriate management actions based on that status. Each fall, the member boards meet to share information and make collaborative decisions regarding the herds, according to the requirements of regional legislation and land-claims agreements. The implementation of the Action Plans is also reviewed at this time. The annual status meeting is an opportunity for the ACCWM to invite authorized representatives of management agencies such as Environment and Natural Resources (ENR – GNWT), Parks Canada, and the Government of Nunavut, as well as harvesters, the public, and researchers to get together and discuss the best available information about the caribou. Terms of reference for the meeting are included in **Appendix B**.

New information presented and reviewed at the annual status meeting may include that from monitoring and research programs, as well as community and/or traditional knowledge. Herd status is determined based on information that includes several **monitoring indicators**. Decisions are also influenced by other information from harvesters and scientists.

Monitoring indicators used to assess herd status include:

- Population size
- Population trend and rate of change
- Productivity and recruitment
- Adult composition
- Body condition and health
- Harvest levels
- Predator populations
- Range and movement patterns
- Environment and habitat
- Human disturbance

Scientists and traditional knowledge-holders recognize that caribou populations tend to go up and down in cycles that usually last between 30 and 60 years. The Management Plan and Action Plans rely on a “traffic light” approach to indicate the relative levels of risk associated with the different phases of a population cycle. The levels are colour-coded as follows:



yellow: the population level is **intermediate and increasing**



green: the population level is **high**



orange: the population level is **intermediate and decreasing**



red: the population level is **low**

Management actions are based on these phases of the population cycle, using approximate levels or “thresholds” as a guide. Thresholds for the herds were determined by the ACCWM

based on known historic highs and lows, with input received from community and technical experts in a consensus-based process. **However, it is not only the threshold value that is used to determine the colour zone – the determination of herd status takes into account all available information.** The traffic light approach to understanding risk in caribou population cycles is shown in Figure 2.

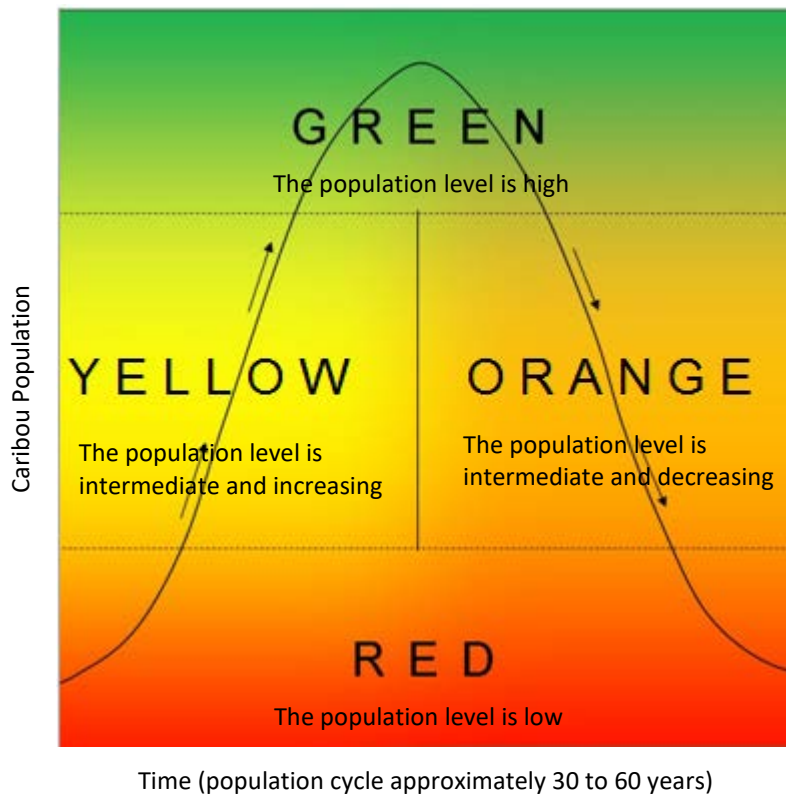


Figure 2: Phases of the population cycle with the colour-coded "traffic light" approach used in the Management Plan and associated Action Plans.

Setting herd status helps provide guidance to implementers about the appropriate monitoring and management actions that should be taking place at each population level. Once herd status is set, the Action Plan includes details about the appropriate prioritized actions, their objectives, and what specific tasks will be done, by whom and within what timeframe.

Communications

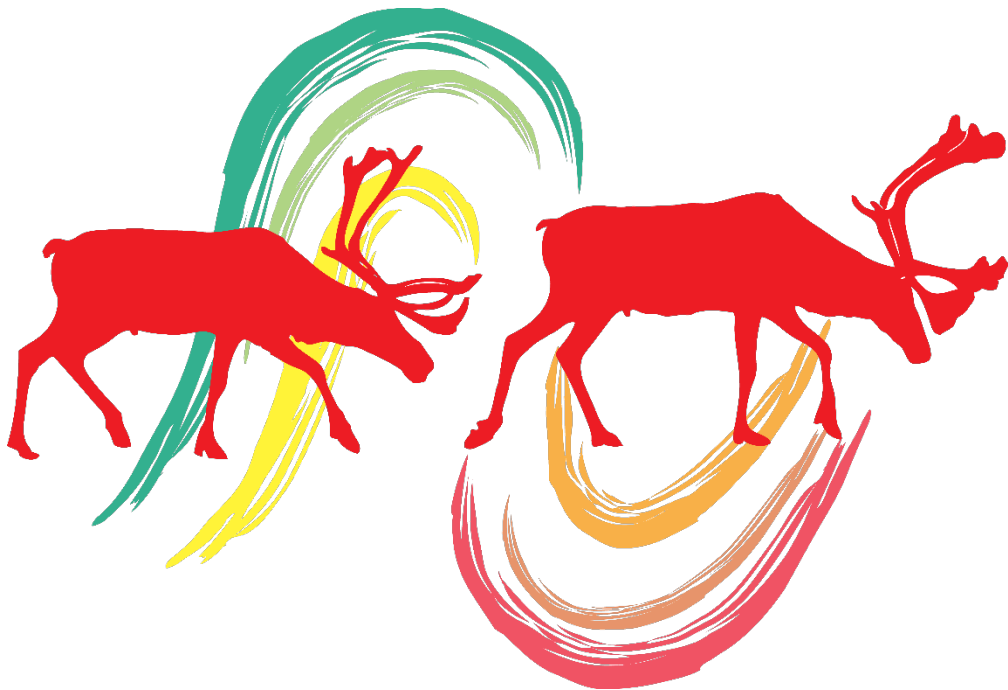
In order for the Management Plan to be successful in achieving its goal of having caribou today and for future generations, people need to know about the Plan, the management actions, and related activities. Without

successful communication, we cannot expect people to be engaged, informed, active participants in *Taking Care of Caribou*.

Communication about the ACCWM and its processes and outputs will include efforts from the ACCWM as a collective and its individual member boards, the territorial governments, local resource management organizations such as HTC, HTO, and RRC, as well as individuals at the family and community level. There are special requirements for effective communication in the NWT and Nunavut, as it is an immense geographical area that crosses territorial boundaries and numerous regions with diverse cultures and environments. There is also a wide diversity of management institutions operating at different scales from the local to the national. **Appendix C** includes a detailed **Communication Plan**.

CAPE BATHURST CARIBOU

– *RED STATUS* –



Tuktuvialuk (Inuvialuktun, Siglitun dialect)
Vadzaih (Teet'it and Gwichya Gwich'in)

Understanding Current Cape Bathurst Herd Status

The ACCWM met on November 20–22, 2018 to review information pertaining to the status of the Cape Bathurst caribou herd. Prior to that, member boards reviewed information available and held discussions in preparation for the annual status meeting. During status meeting discussions about Cape Bathurst caribou, up-to-date scientific knowledge was provided by ENR biologists. Community knowledge was provided from two regions: the Inuvialuit Settlement Region (ISR) and the Gwich'in Settlement Area (GSA).

The 2019 Management Setting

At the start of the 2018 status meeting, a roundtable was held to give participants an opportunity to provide a brief update on some of the management actions and developments that arose in their region over the course of the last year.

Within the range of the Cape Bathurst caribou, people talked about some concerns that were raised at last year's status meeting, such as the completion of the Inuvik-Tuktoyaktuk Highway (ITH), the need to protect calving grounds, and that the overlap of the Cape Bathurst and Bluenose-West ranges may be resulting in the harvest of Cape Bathurst caribou. In addition to these ongoing management concerns, several items that could have implications for Cape Bathurst caribou were also brought forward to the group:

- **Species At Risk Assessments:** COSEWIC has assessed barren-ground caribou as Threatened. The federal SARA listing has not been done yet. Depending on listings, work on recovery planning and identification of critical habitat may need to happen.
- **Draft Caribou Management Strategy (2018–2022):** ENR-GNWT awaiting Cabinet review and approval; will then be submitted for public/broader review and approval.
- **Completion of the ITH:** The highway opened in November 2017 and could result in increased access to Cape Bathurst caribou on their winter range and problems with dust on vegetation. ENR is using existing collars to analyze the impacts of the road on caribou.
- **Rise in signs of climate change:** There are more landslides, slumping and warmer temperatures; the impacts on caribou are hard to predict.

Status Decision 2018

According to the process outlined in the Management Plan, numerous criteria are used to make an annual status decision. Information considered by the ACCWM in making the 2018 decision was present and summarized in Table 1 at the end of this section. Additional historic information can be found in two companion reports, available from ACCWM members and on the ENR website.²

² Davison, T. 2016. Technical Report on the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds: Companion Report to 'Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-

Management actions are based on these phases of the population cycle, using approximate levels or “thresholds” as a guide. Thresholds for the herds were determined by the ACCWM based on known historic highs and lows, with input received from community and technical experts in a consensus-based process. **However, it is not only the threshold value that is used to determine the colour zone – the determination of herd status takes into account all available information.**

Based on the information provided, the ACCWM determined the Cape Bathurst herd status colour zone to be **red (low)** in November 2018. The ACCWM noted that while the population appears to be slowly recovering based on the numbers presented by the Department of Environment and Natural Resources (ENR), the confidence interval from ENR’s survey indicates there is a possibility that the herd is still declining. Given that there are concerns about increased hunting pressure along the Inuvik-Tuktoyaktuk Highway and the potential use of Bluenose-West caribou tags for harvesting Cape Bathurst caribou in the areas where the ranges of the two herds overlap, the ACCWM felt that the status for the herd should remain **red (low)** as a precautionary measure despite the possibility that the population numbers may be above the low threshold.



In 2019/20

the Cape Bathurst caribou population status is

RED: low

The 2018 decision was made in accordance with the principles stated in the Management Plan. While information was provided for all of the criteria outlined in Table 5, it is hoped that in the future, even more information from all regions will be made available to the ACCWM for determining herd status, especially from community and traditional knowledge sources.

ground Caribou Herds Management Plan’. Department of Environment and Natural Resources, Government of the Northwest Territories. File Report No. 150. 81 pp.

Advisory Committee for Cooperation on Wildlife Management. 2014. We Have Been Living with the Caribou All Our Lives: A report on information recorded during community meetings for ‘Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan’. Yellowknife, NT. 196 pp.

Presentations Given at the 2018 Annual Status Meeting

Both scientific and community knowledge helped to inform the 2018 status decision; further details on some of the relevant survey methods are included in **Appendix D**. ENR provided current scientific information; the data included here were presented at the meeting.

Some community information was provided on each of the ten monitoring criteria. The following outlines regional approaches to gathering information:

Inuvialuit Settlement Region, NWT – Information provided for this region was summarized from public meetings held in Inuvik and Tuktoyaktuk during a community tour with representatives from WMAC (NWT). Representatives of the WMAC (NWT) participated in the status meeting.

Gwich'in Settlement Area, NWT – The Gwich'in Renewable Resources Board held a community meeting about Cape Bathurst and Bluenose-West caribou in Inuvik. Five Gwich'in community members attended and shared information at that meeting; it is included in the table as "Inuvik (GRRB)". GRRB representatives participated in the status meeting.

Representatives of other regions did not provide information specific to Cape Bathurst monitoring, as people living in those areas did not regularly encounter or use these caribou.

Inuvialuit Community Knowledge Presentation

Larry Carpenter (WMAC-NWT)

WMAC-NWT has been doing community tours as part of their species-at-risk consultations. During this tour they gathered information on the status of the Cape Bathurst herd from community members. One of the main factors for developing strong local knowledge is access to the herd. This is leading to some good information when the herd is near the highway, but severe weather events in the fall meant few people were able to access the herd at that time.

Community members in both Inuvik and Tuktoyaktuk expressed concerns regarding poaching along the ITH, though it appears to be happening at a lower rate than feared in the lead-up to the highway's opening. The lack of poaching may be a result of the strong local monitoring program. Another concern was the sale of meat on social media and the wastage of meat. There is apparently less meat being sold online, although sales are still occurring.

It was noted that along the highway caribou don't seem to be bothered by traffic, although increases in human disturbances, especially from aircraft, were observed last summer.

Tuktoyaktuk-based hunters are saying that they are seeing larger herd sizes and a good number of cows with calves. Other than a freezing rain event in January, the weather and snow conditions were favourable for caribou; there were even fewer bugs in the summer this year.

It was also mentioned that caribou are calving earlier in April rather than May, similar to the reindeer.

Within the I/BC/06 management unit, the season has been changed and the tags are distributed earlier. Previously, the tags were released just before the rut and as such more cows would be harvested. With the new schedule, more bulls are being harvested. There also was an increase in tags per household, from three to five.

The topic of predators was a recurring theme throughout the presentations. Members from Tuktoyaktuk observed that every year they are seeing more grizzly bears throughout the region. People are encountering far more cubs, with at least one sighting of a sow with three cubs. In the discussion that followed the presentation, representatives from Kugluktuk and Délı̄nę commented that they are also seeing an increase in the number of grizzlies in the area and suggested there needs to be a review of the quotas from grizzly bears in the NWT.

Gwich'in Community Knowledge Presentation

Édouard Bélanger (GRRB)

This presentation focused mainly on the data presented in that status table (see Table 5 below). Community data was limited as only five people attended the GRRB's meeting in Inuvik. It was noted that with the relative ease of access to the Porcupine Herd and the restrictions on hunting the Cape Bathurst herds, few hunters were able to make observations on the status of the herd. The GRRB is actively trying to get more people out so that they can contribute information in the future.

The participants in the GRRB's workshop remarked that they trusted ENR's population estimates and agreed with the preliminary results showing that the population is stable. Participants also shared several concerns including poaching along the ITH, landscape change, human disturbances, and climate change.

Presentation on Scientific Information

Tracy Davison (ENR Inuvik)

ENR's most recent post-calving ground survey was conducted this year. In 2018, the post-calving population survey results were used to calculate the size of the Cape Bathurst herd by using the Rivest method instead of the historically-utilized Lincoln-Peterson. Of the two population estimation methods, ENR and the boards agreed at the 2016 meeting that the Rivest is the preferred estimation method, as it takes into account group size along with the data from collars and photo surveys.

This year's estimate is likely biased high because there were a number of collared bull caribou that didn't aggregate with the main group. The number of groups with a group size of 1 influences the statistics.

The population survey results (the number of adult caribou) were:

Adult Population Estimate: $4,521 \pm 875$

Although the point estimate place the Cape Bathurst herd status within the orange zone the lower confidence interval places the herd in the red zone, as the threshold between the orange and red zones for this herd is 4,000 animals.

Population trend and rate of change

The 2018 Rivest population estimate of $4,521 \pm 875$ (95% CI) caribou is higher than the previous 2015 estimate, but the 4% yearly increase (between 2005-2018) is not statistically significant due to the wide confidence intervals (-3 to 10%). The population estimates seem to show a trend in that the herd went through a large decline and there is possible evidence of a slight recovery in the last few years, but the herd has been relatively stable between 2005 and 2015 at low numbers. Rivest population estimates (with 95% confidence intervals) as well as minimum counts for the period from 2000 to 2015 are shown in Table 1 and Figure 3 on the following page.

Table 1: CB Rivest population estimates (2000–2018).

Year	Rivest Estimate
2018	$4,521 \pm 875$
2015	$2,524 \pm 284$
2012	$2,447 \pm 350$
2009	$2,925 \pm 1,252$
2006	$2,039 \pm 319$
2005	$3,566 \pm 1,373$
2000	$13,612 \pm 5,245$

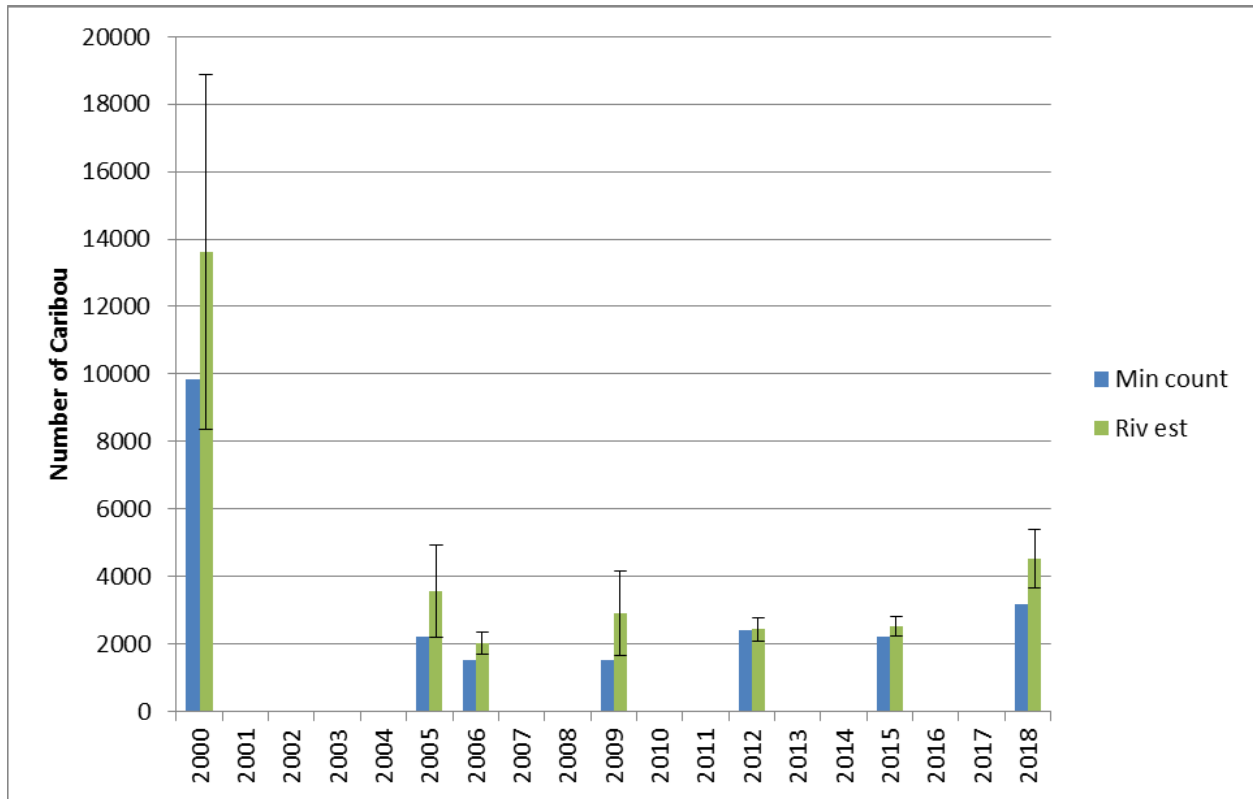


Figure 3: Cape Bathurst herd Rivest population estimates from post-calving surveys since 2000. Minimum counts are included for comparison purposes.³

Productivity and recruitment

No new data on productivity and recruitment was provided. Data from previous years was presented and is summarised below.

Recruitment surveys show the number of calves that have survived their first winter to be ‘recruited’ into the adult population. This can vary greatly from year to year; in harder winters, fewer calves will survive. Generally, ratios of greater than 30 calves per 100 cows are considered reasonable.

Recruitment surveys were conducted on Tuktoyaktuk Peninsula and Cape Bathurst caribou together in 2017, as the herds are mixed during the survey period; a very high ratio of 48.2 ± 3.4 calves to 100 cows was found. Recruitment estimates (number of calves per 100 cows) over time are shown in Figure 4. In the years 1983-1994, “Bluenose” includes Cape Bathurst, Bluenose-West and Bluenose-East.

Calf-to-cow ratios can be impacted by the harvesting of females. For example, if a large proportion of cows are harvested and the calves are not, then the number of calves per 100 cows left in the herd will be inflated and will be an inaccurate reflection of actual calf survival. Based on the management actions, a portion of the range used by the caribou in the survey is

³ Earlier years of survey results are available in *Taking Care of Caribou* and the ENR technical report.

closed to harvest; however, the total harvest and sex ratio of the harvest is not known for the open area. Therefore, it is possible that the calf-to-cow ratio may be skewed. Good harvest data, including the sex of the animals, date of harvest, and location, is needed to better assess the impact of this harvest on the calf-to-cow ratios.

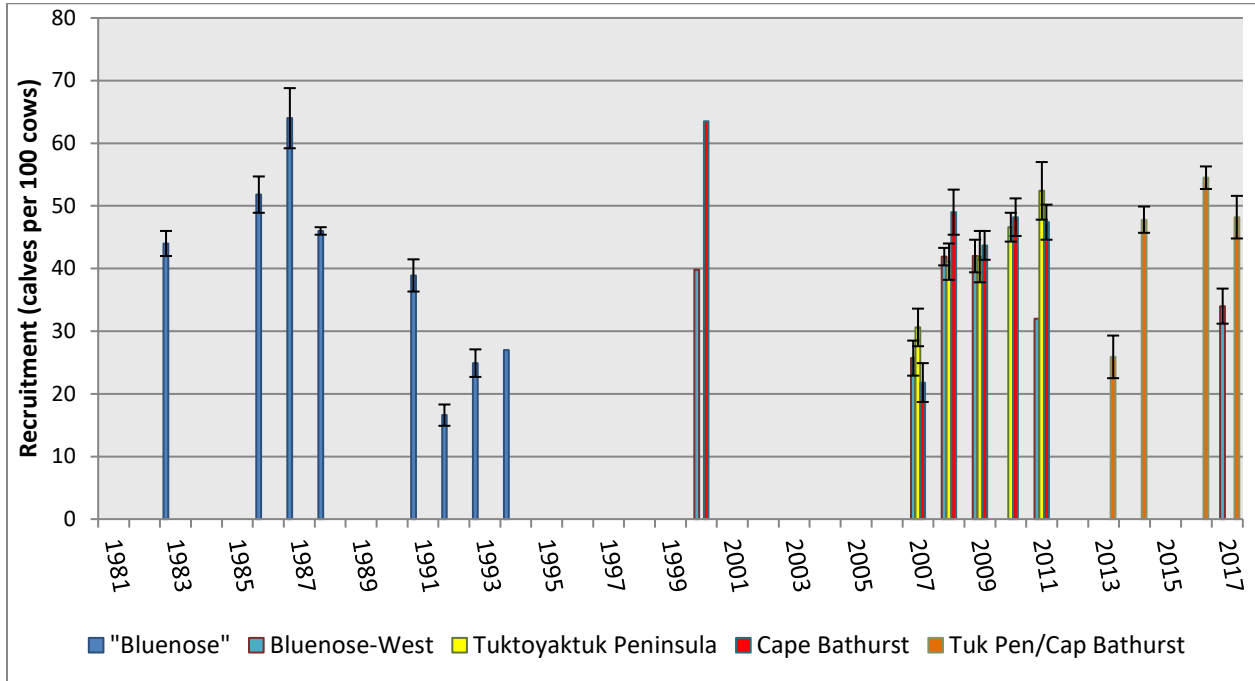


Figure 4: Recruitment estimates (calves per 100 cows) for the Tuktoyaktuk Peninsula (TP), Cape Bathurst (CB), and "Bluenose" barren-ground caribou herds, 1983–2017.

Adult composition

No new data on adult composition was provided. Data from previous years was presented and is summarised below.

A fall composition survey was conducted in October/November of 2015 as part of the monitoring program for the Cape Bathurst herd. Fall surveys to classify caribou are conducted during the rut to obtain a bull-to-cow ratio. Information is presented as the number of bulls per 100 cows.

The number of bulls per 100 cows was 43 ± 4.6 (SE) for the Cape Bathurst and Tuktoyaktuk Peninsula herds combined in 2015. There are no fall composition data from these herds to use for comparison. 2009 results for the Bluenose-West and Bluenose-East herds showed bull-to-cow ratios of 70 and 42.9 ± 3.4 (SE) respectively.

Body condition and health

ENR monitors body condition and health in barren-ground caribou by working with harvesters. Harvesters are asked to measure back fat, and to rate the body condition of the caribou they harvest as Excellent, Good, Fair, or Poor. These ratings are translated to a numerical value

between one and four, with 1 = Poor and 4 = Excellent, so they can be averaged. Scientific information is based on harvester reports and samples for the Tuktoyaktuk Peninsula and Cape Bathurst herds combined.

Table 2: Results from hunter harvest body condition sampling for Tuktoyaktuk Peninsula and Cape Bathurst caribou combined.

Season	Average Condition Code (number of samples)	
	Female	Male
2017/18*	2.7 (70)	2.2 (34)
2016/17*	2.6 (74)	2.0 (44)
2015/16*	2.0 (57)	2.3 (27)
2014/15*	3.2 (40)	2.3 (28)
2013/14	2.7 (26)	3.2 (15)
2012/13	2.1 (10)	(0)
2011/12	(0)	(0)
2010/11	(0)	4.0 (4)
2009/10	1.9 (11)	1.5 (2)
2008/09	2.5 (11)	2.1 (7)

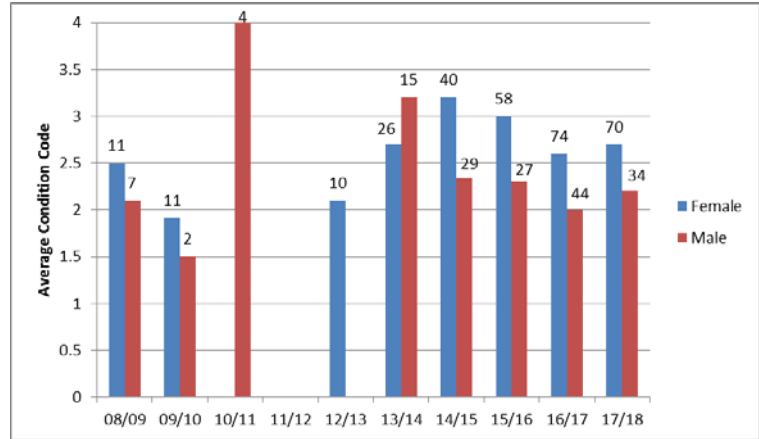


Figure 5: Average condition codes for the Tuk Peninsula/Cape Bathurst herds, assessed by hunters on a scale of 1–4 with number of samples noted at the top of the bar.

* Samples submitted from I/BC/08 harvests plus from 2014/15 to present include I/BC/06 samples from Inuvik and Tuktoyaktuk because, based on collar data, the change of zone boundary means Inuvik and Tuktoyaktuk harvesters were mainly accessing Tuktoyaktuk Peninsula and Cape Bathurst Herds.

Condition information was reported for 70 cows and 34 bulls; back fat information was reported for 80 cows and 26 bulls in the 2017/18 season. The back fat measurements indicate that cows were of good condition and the males lower when sampled.

Results for average body condition ratings for Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined are presented in Table 2 and Figure 5.

Back fat measurements for Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined are presented in Table 2 and Figure 6.

Table 3: Results from hunter-collected back fat and health sampling for the Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined.

Season	Back Fat in cm (number of samples)	
	Female	Male
2017/18*	1.90 (80)	0.72 (26)
2016/17*	1.43 (76)	0.73 (45)
2015/16*	2.7 (65)	1.06 (30)
2014/15*	2.13 (37)	1.21 (37)
2013/14	1.31 (25)	3.42 (18)
2012/13	1.22 (6)	(0)
2011/12	(0)	(0)
2010/11	(0)	4.03 (4)
2009/10	0.62 (10)	0.25 (2)
2008/09	0.8 (11)	0.00 (7)

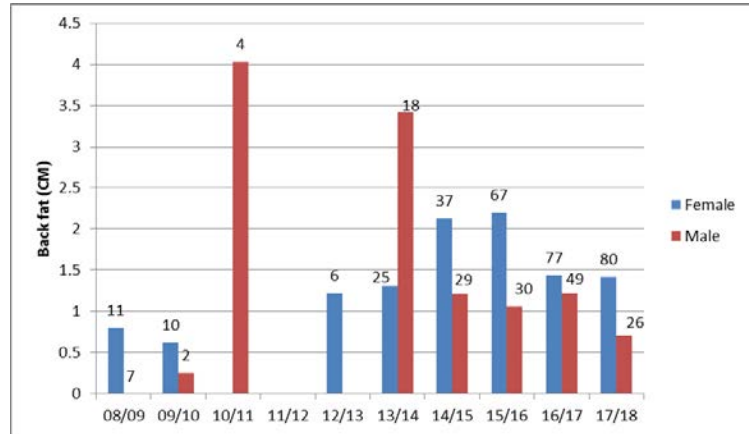


Figure 6: Average reported back fat measurement (in centimeters) for the Tuk Peninsula/Cape Bathurst herds, with number of samples noted at the top of the bar.

* Samples submitted from I/BC/08 harvests plus from 2014/15 to present include I/BC/06 samples from Inuvik and Tuktoyaktuk because, based on collar data, the change of zone boundary means Inuvik and Tuktoyaktuk harvesters were mainly accessing Tuktoyaktuk Peninsula and Cape Bathurst Herds.

Harvest levels

Determining harvest levels for the Cape Bathurst herd is complicated due to changes in management zone boundaries. Prior to 2005 the harvest between Tuktoyaktuk and Inuvik was estimated at about 1,600 caribou, with the majority cows. In 2007, the mainland caribou management area in the ISR – area I/BC/06 was adjusted to reflect core areas of the herds based on recommendations from the WMAC (NWT). Area I/BC/06 was divided into three zones: I/BC/08 to reflect the core area of the Tuktoyaktuk Peninsula herd; I/BC/07 was described to reflect the core area of the Cape Bathurst herd; and I/BC/06 to reflect the core portion of the Bluenose-West herd in the ISR.

In 2007, harvesting was closed in I/BC/07 and G/BC/02 based on recommendations from the WMAC (NWT) and the GRRB. Harvesting in I/BC/08 was closed seasonally from April 15 to June 15 to allow the Cape Bathurst herd to migrate to the calving grounds.

In 2009, the boundary between the Tuktoyaktuk Peninsula area (I/BC/08) and Cape Bathurst area (I/BC/07) was moved south to the Diamond Lake Trail to make it simpler for harvesters to identify the zone boundary out on the land. At the same time, the seasonal closure was extended to April 1 to protect migrating Cape Bathurst caribou.

In 2014/15, the eastern boundary of I/BC/07 was moved to Husky Lakes; the adjustment of the Bluenose-West zone meant that it now included some of the range of the Cape Bathurst and Tuktoyaktuk Peninsula herds as well as Bluenose-West range. Concerns were raised by the

GRRB that tags originally issued as part of a Total Allowable Harvest (TAH) for Bluenose-West caribou are now being used in an area with Cape Bathurst caribou, and this could be impacting the Cape Bathurst herd. The Tuktoyaktuk Peninsula herd has also started coming into the expanded area of I/BC/06 in the winter, where the tags can be used. It is difficult to tell which herd harvested animals in this expanded area of the I/BC/06 zone are from; Cape Bathurst, Tuktoyaktuk Peninsula, and some Bluenose-West herds all use this expanded area.

Data reported to ENR for 2017/18 showed 171 tags possibly used in Tuktoyaktuk Peninsula/Cape Bathurst area (134 of those have reported sex: 46 males, 75 females).

Predator populations

ENR collects samples from wolves harvested by hunters in the Inuvik Region (Table 4); samples are mostly from the winter season, when wolves tend to be hunted. In the past stomach contents were sampled, and of all the Inuvik region mainland wolf samples submitted, 68% of the stomach contents was caribou. ENR is now looking at a more long-term analysis using stable isotopes, which will provide information on more than just wolves’ most recent meal (e.g., will reveal more information about wolves’ year-round diet).

Table 4: Number of wolf carcasses/samples submitted to ENR by Tuktoyaktuk and Inuvik hunters, 2007–2017.

Year	Inuvik	Tuktoyaktuk
2007/2008	20	8
2008/2009	11	22
2009/2010	15	12
2010/2011	24	16
2011/2012	21	15
2012/2013	16	15
2013/2014	19	14
2014/2015	17	23
2015/2016	33	21
2016/2017	8	21
2017/2018	21	9
Total	205	176

Other scientific information

Overall, the scientific information indicates the following:

- During calving period, cows and bulls use different ranges.
- Summer range – cows and bulls tend to be more mixed and found in same areas.
- During fall migration, there is little difference in the movements of cows and bulls, although bulls will go further south.
- There are some differences in winter range used between cows and bulls; bulls tend to be farther south.
- In spring there is considerable overlap of range with some differences; cows are generally ahead of the bulls.
- Cape Bathurst caribou have tended to winter together with the Tuktoyaktuk Peninsula herd in recent years. However, the collar data showed 100% fidelity of cows to calving grounds in 2018.

Table 5: Criteria used to assess Cape Bathurst herd status in 2018⁴

Criteria	Community-Based Information	Scientific Information	Comments
Population size	<p>Tuktoyaktuk (WMAC): Noted that in the past 4 years they have seen more caribou than prior to 5 years ago, and last year there was more. Inuvik members noted it is the same as last year.</p> <p>Inuvik (GRRB): This is more for the biologists to say with the surveys they conducted this year. From preliminary results, it seems that the population is stable.</p>	Estimated number of adult caribou at least 1.5 years old in 2018 Rivest: 4,521 ± 875	<p>Estimated based on July post-calving ground survey.</p> <p>It is believed that the 2018 population is biased high because there were some bulls that did not clump up with the main group. The distribution pattern was not normal, with small groups of bulls not joining the herd.</p>
Population trend and rate of change	<p>Tuktoyaktuk (WMAC): Community members are seeing a few more caribou, and the caribou bunches/herds are getting bigger compared to last year.</p> <p>Inuvik (GRRB): From preliminary results, it seems that the population has increased.</p>	There is no significant increase per year between 2005 and 2018 (confidence interval [CI] -3 to 10%).	<p>Trend analysis is based on Rivest estimates:</p> <p>2015: 2,524 ± 284 2012: 2,447 ± 350 2009: 2,925 ± 1,252 2006: 2,039 ± 319 2005: 3,566 ± 1,373</p>
Productivity and recruitment	<p>Tuktoyaktuk (WMAC): Community members observed there are a good number of calves with cows,</p>	No new information since 2017.	2017 recruitment survey included both Cape Bathurst

⁴ This table is populated with information presented to the ACCWM to assess herd status in 2018 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

	including older calves (yearlings). Calves were seen in April this year; in the past calves weren't seen until May. The reindeer are usually calving in April, but this was caribou that we were seeing.	In 2017, there were a high number of cows with calves in early April. Estimated number of calves per 100 cows in 2017: 48.2 ± 3.8 (95% CI)	and Tuktoyaktuk Peninsula herds.
Adult composition	Tuktoyaktuk (WMAc): Community members are seeing lots of lone bulls in July/August, but later in August these bulls start mixing with the cows and calves. There are fewer community observations because people were not able to get out this fall due to bad weather.	No new information since 2015. There is only one bull-to-cow ratio for Cape Bathurst (2015) so the trend is unknown, but the 2015 results are considered normal. Estimated number of bulls per 100 cows in 2015: 43 ± 4.6 (SE)	The bull ratio is monitored because a bull-dominated harvest was recommended.
Body condition and health	Tuktoyaktuk (WMAc): Community members observed the young bulls had 1–1.5 inches of fat in March; most caribou harvested are healthy; one caribou harvested was sick with pneumonia; one caribou harvested had tapeworms (looked like white rice); some non-typical antlers seen recently – flat and twisted, really wide; in July the bulls were already fat and had big antlers, and some bulls lost their velvet early this year; bulls had 2.5–3 inches of fat by end of July, and by August they were almost obese. Inuvik (WMAc): Community members observed that not many of the caribou had nose bots.	On average, condition was 'fair' for bulls and 'good' for cows in the 2017/2018 harvest season. Average back fat in 2017/2018 season was 1.42 cm (range 0 to 4 cm) for cows and 0.71 cm (range 0 to 2 cm) for bulls.	Scientific information based on harvester-reported samples for Tuk Peninsula and Cape Bathurst herds. Condition information was reported for 70 cows and 34 bulls; back fat information was reported for 80 cows and 26 bulls in the 2017/2018 season.

<p>Harvest levels</p>	<p>Tuktoyaktuk (WMAC): Harvesters noted that fewer people were able to get out for the fall harvest (boating season) this year because of the weather; the first harvesters out see the most during both the fall boat harvest and snow machine harvest after freeze-up; it is harder to harvest by ATV because the caribou are becoming more startled from the noise, so now you have to park your bike and walk about ½ km to get within range. The season change for zone I/BC/06 is helping encourage bull harvest; human conservation measures have had an impact. Some people hunt without a tag or in the closed zone. Some people are wasting meat (i.e., killing caribou and only taking the hind quarter and leaving the rest); sale of dry meat has slowed down on social media since last year, but there is still some ongoing that is not advertised.</p> <p>Inuvik (WMAC): Community members stated this year all the tags were filled. The HTC increased the per household allotment from 3 to 5 to encourage harvest; there is concern about people selling dry meat on Facebook; CBMP should be able to provide</p>	<p>I/BC/07 is a closed zone for Cape Bathurst. 171 I/BC/06 tags possibly used in TP/CB area in 2017/2018 (134 of those have reported sex: 46 males, 75 females).</p>	<p>In 2014/15, the I/BC/06 area was enlarged and now includes some of the winter range of the Tuk Peninsula and Cape Bathurst herds. Some of the I/BC/06 tags are now being used on these herds.</p>
------------------------------	---	--	--

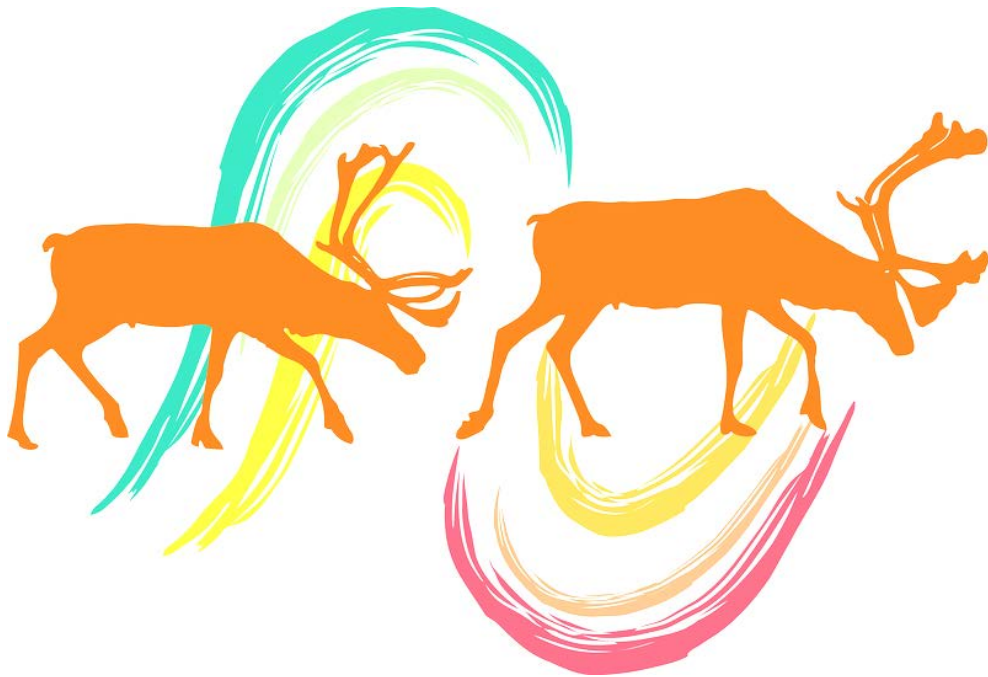
	<p>harvest data. There was a community harvest last year; 25 caribou were taken, which was a mix with mostly bulls.</p> <p>Inuvik (GRRB): There is poaching of Cape-Bathurst caribou on the ITH.</p>		
Predator populations	<p>Tuktoyaktuk (WMAC): Community members think there are always predators around (grizzlies, wolverines, wolves); there are lots of golden and bald eagles and every year you see more. A few years back a bald eagle was observed taking a calf; this year there are far more grizzly bears, some sows with 4 cubs and lots with 3 cubs; the by-law restricts hunting females with cubs so that makes it hard to harvest.</p> <p>Inuvik (WMAC): Community members observed lots of small grizzly bears.</p>	<p>Tuktoyaktuk and Inuvik submitted 30 wolves in the 17/18 season.</p> <p>Of the wolf stomach contents analyzed, 68% was caribou.</p>	<p>Changes in wolf harvest do not necessarily reflect changes in wolf abundance.</p>
Range and movement patterns	<p>Tuktoyaktuk (WMAC): Community members observed that the caribou move all over and can switch herds; the caribou are moving further up into the bush because the snow levels are lower; small caribou herds are being seen near small muskox herds in May, so they are sharing the same feeding areas near Mason River area. Inuvik members observed in the spring of 2018 that there were a few bunches seen</p>	<p>In 2018, 16 CB collars were still active from 2017 and all returned to CB calving ground.</p>	

	<p>near the Inuvik-Tuktoyaktuk Highway and then not as many seen during the summertime.</p> <p>Inuvik (GRRB): People used to see caribou around Inuvik when growing up (around 30 years ago). Now there aren't. The Cape Bathurst caribou hang out around Husky Lakes in winter.</p>		
Environment and habitat	<p>Tuktoyaktuk (WMAC): Community members noted that there was rain last December that caused a lot of ice – the ptarmigan were slipping around; more slumps and landslides, including landslides right near the caribou trails; the snow levels are lower and the caribou are moving further up into the bush; creeks are plugged up by beavers, so there is overflow and creeks are widening; last few years have been far fewer bugs (warble flies, etc.) so the caribou are staying where there is better food and not running around as much; had a cold spring and summer, lots of rain and wind.</p> <p>Inuvik (WMAC): Community members noted there was rain on the snow this winter.</p> <p>Inuvik (GRRB): Climate change is changing a lot of things. There is more</p>	<p>ENR is not currently conducting any range work on the Cape Bathurst range.</p> <p>There were very few fires in the 2018 season.</p>	

	<p>thawing; it's warm and wet. It used to be colder (a long time ago). Now, it's still 2–3 degrees in September. Lots of landslides around Caribou Hills north of Inuvik.</p>		
<p>Human disturbance</p>	<p>Tuktoyaktuk (WMAC): Community members stated there are lots of helicopters and planes flying around at the end of June/early July up the peninsula past Campbell Island; caribou are more startled by noise (i.e., ATVs) than they used to be. Inuvik members stated there is concern about the Inuvik-Tuktoyaktuk Highway now that it is open and there is a lot of traffic and the caribou will leave the area; the caribou seen near the highway in spring 2018 didn't seem bothered.</p> <p>Inuvik (GRRB): The highway makes it easier to poach Cape Bathurst caribou. Numbers seems to have gone up, but there are still concerns about poaching along the ITH.</p>	<p>The largest development in the range of the Cape Bathurst herd is the Inuvik – Tuktoyaktuk Highway that opened in November 2017 and passes through the winter range of the herd.</p>	

BLUENOSE-WEST CARIBOU

– *ORANGE STATUS* –



Tuktuvialuk (Inuvialuktun, Siglitun dialect)
Vadzaih (Teet'it and Gwichya Gwich'in)
ʔedə (K'áhsho Got'ıne, Dela Got'ıne)
ʔehdaıla Goʔekwé (Délıne Got'ıne)

Understanding Current Bluenose-West Herd Status

The ACCWM met on November 22, 2018 to review information pertaining to the status of the Bluenose-West caribou herd. Prior to that, member boards reviewed information available and held discussions in preparation for the annual status meeting. During status meeting discussions about Bluenose-West caribou, up-to-date scientific knowledge was provided by Environment and Natural Resources (ENR-GNWT) biologists. Community knowledge was provided from three regions: the Inuvialuit Settlement Region (ISR), the Gwich'in Settlement Area (GSA), and the Sahtú Settlement Area (SSA).

The 2019 Management Setting

At the start of the 2018 status meeting, a roundtable was held to give participants an opportunity to provide a brief update on some of the management actions and developments that arose in their region over the course of the last year. During the roundtable there were a number of management topics raised that could have implications for Bluenose-West caribou and their habitat, including:

- **Divergent management systems (tags/community management plans):** While each of the member boards seeks to ensure the viability of the herd, divergent management systems have the potential to increase tension, highlighting the need for structures that build trust between organizations, communities, and member boards.
- **Species At Risk Assessments:** COSEWIC has assessed barren-ground caribou as Threatened. The federal SARA listing has not been done yet. Depending on listings, work on recovery planning and identification of critical habitat may need to happen.
- **Draft Caribou Management Strategy (2018–2022):** ENR-GNWT awaiting Cabinet review and approval; will then be submitted for public/broader review and approval.
- **A rise in signs of climate change:** There are more landslides, slumping, and warmer temperatures; the impacts on caribou are hard to predict.
- **Change to ISR hunting regulations:** WMAC (NWT) introduced a season change to harvest regulations to encourage more bull harvesting in 2017.
- **Community-led conservation planning:** The SRRB adopted a community conservation planning approach, and Colville is in the process of developing a caribou plan.

An additional management issue raised by the GRRB is that the boundary change between Cape Bathurst and Bluenose-West hunting zones could be resulting in harvests of Cape Bathurst caribou.

Status Decision 2018

Management actions are based on these phases of the population cycle, using approximate levels or “thresholds” as a guide. Thresholds for the herds were determined by the ACCWM based on known historic highs and lows, with input received from community and technical experts in a consensus-based process. **However, it is not only the threshold value that is used**

to determine the colour zone – the determination of herd status takes into account all available information.

According to the process outlined in the Management Plan, numerous criteria are used to make an annual status decision. Information considered by the ACCWM in making the 2018 decision is summarized in Table 2 below.

Based on the information provided, the ACCWM determined the Bluenose-West herd status colour zone to be **orange (intermediate and decreasing)** in November 2018. Community members in both the Inuvialuit and Sahtú observed more calves than in previous years, suggesting that the population may be moving towards a yellow status; for the moment, however, the ACCWM decided to apply the precautionary principle and maintain the previous year's status designation. This decision recognizes that the herd size appears to be stable and that ongoing conservation actions are needed to help the Bluenose-West herd recover.



IN 2019/20
the Bluenose-West caribou population status is
ORANGE: intermediate and decreasing

Presentations Given at the 2018 Status Meeting

Both scientific and community knowledge helped to inform the 2017 status decision; further details on some of the relevant survey methods are included in **Appendix D**. ENR provided current scientific information; the data included here were presented at the meeting. The TNNPMB presented on some of the future research that is planned within the park.

Some community information was provided on each of the ten monitoring criteria. The following outlines regional approaches to gather information:

Inuvialuit Settlement Region, NWT – Information provided for this region was summarized from public meetings held in Inuvik, Paulatuk, and Tuktoyaktuk with representatives from WMAC (NWT). Paulatuk is the main community in the ISR that encounters and harvests Bluenose-West caribou, so their comments represent the bulk of the data summarized in the monitoring table for this herd. Representatives of the WMAC (NWT) participated in the status meeting.

Gwich'in Settlement Area, NWT – The Gwich'in Renewable Resources Board held a community meeting about Cape Bathurst and Bluenose-West caribou in Inuvik. Five Gwich'in

community members attended and shared information at that meeting; it is included in the table as “Inuvik (GRRB)”. GRRB representatives participated in the status meeting.

Sahtú Settlement Area, NWT – Input from Colville Lake was provided on behalf of Behdzi Ahda First Nation (BAFN) by David Codzi during the public portion of the status meeting. Two SRRB representatives participated in all of the status meetings.

Representatives of other regions did not provide information specific to Bluenose-West monitoring, as people living in those areas do not regularly encounter or use these caribou.

The 2018 status meeting was documented in notes that were as close to verbatim as possible. As a result, we have been able to include representative quotations from meeting participants; these are indented from the main text and presented in an italicized, gray font. They have been edited for clarity or brevity as necessary, and named speakers were given opportunities to review and edit how their meeting input has been included.

Inuvialuit Community Knowledge Presentation

Larry Carpenter (WMAC-NWT)

The majority of the Inuvialuit public input came from the community of Paulatuk, where they report seeing caribou in their region year-round now. This was not the case in the past when they had to go all the way to Anderson River. In general, the population seems to be increasing compared to the 1990s, with lots of cows with calves.

The changing weather conditions can be hard on the caribou. It was cold with rain and snow throughout the summer, and freeze-up was early this year. Some caribou were seen to be very skinny in early August, and the effects of rain and ice during winter were visible on the caribou. For example, abrasions on the nose and legs were present, but the animals were otherwise considered to be healthy. The cold weather meant that there were fewer bugs and as such the caribou didn't travel to the coast to avoid them.

The bad weather also impacted the harvesters, as they were unable to travel on the land as much as they would have liked. Harvesters did manage to get out in the spring and reported hunting fewer cows than bulls compared to the past.

Community members reported concerns about predators and human disturbance from mining activity. The predator populations are going up, especially wolves and grizzly bears. Generation Mining flew their helicopters throughout the summer, and although they travelled with local monitors to avoid impacts on the caribou, it was felt that the noise could be an added disturbance on an already stressed population.

Gwich'in Community Knowledge Presentation

Édouard Bélanger (GRRB)

The GRRB held a public workshop on October 3, 2018 but as noted previously, there were not a lot of participants. At the workshop most of the talk was around concerns, with little information regarding what was happening on the land. Specifically, there were concerns regarding the impacts of the ITH and the potential for poaching. There were also concerns about the fairness of the Inuvialuit receiving significantly more tags than the Gwich'in and about the fact that some communities in the Sahtú aren't using tags at all.

Harvesters used 13 of 22 available tags. These tags were requested by all four communities. The fact the Porcupine Herd didn't come near the Dempster highway in 2018 meant that hunters had to travel further to access caribou and may have chosen to preferentially hunt the Bluenose-West caribou for this reason.

Tuktut Nogait National Park Management Board Presentation

Tom Nesbitt (TNNP management board member)

This presentation highlighted the current research in the TNNP, for which the results should be available in the near future. Researchers are currently studying forage quality in the core calving area of the park. They are using the landsat maps and ground truthing via drones to try to develop a signature for the vegetation within the core calving ground. With that signature, they should be able to use the landsat images to go back decades to see how the quality of food has changed over time. Researchers hope that we can soon better understand how the quality of food is changing, where the best food is, and how this impacts the caribou population. This work is being done by Parks Canada within Tuktuk Nogait National Park and does not only include calving grounds.

Sahtú Community Knowledge Presentation

David Codzi and George Barnaby (SRRB)

The presentation on community knowledge from the Sahtú focused on the development of community conservation plans, such as the one that Colville Lake is developing. The SRRB is working with Colville Lake to develop a plan for managing caribou that fits with their traditional values. It was noted that in the past, when there were large herds that were easily accessible, people would come from all over to harvest the caribou. As numbers dropped, families would stick to their traditional lands and try to limit their hunt. This is what people are doing now. One of the challenges the new plan faces is convincing ENR and the neighbouring communities that the hunt can be managed without the use of tags. It was explained that the issue is with the idea that tags imply ownership of the caribou. People hold the right to hunt as one of the most important aspects of their treaty.

Over the last couple years, we've seen lots of changes. More landslides, more erosion. More shifts to our waterways. More shifts to migratory times. More snow crusts. More wolves. More bears. The community slowed down on the hunting. Only one group went out on the barrens. They have a difference of opinion on the

methods for the population numbers. They want to see how the numbers came out. They only go out for personal or family food. Trying to drop the cost of living, so people don't need to go out as much. Our people rely on caribou; it's a symbiotic relationship. If we don't have a relationship with caribou, they won't come around anymore. The relationship has to be respectful, no hitting caribou with sticks, no axes, no burning caribou. Any time there is hunting people check the area out for cleanliness: did anything get left behind? They tried to stop people from selling dry meat to make money. They are clamping down on it. Caribou are free; no one owns them, we don't tag them. We have told our hunters not to advertise where they are. We've asked people to come and tell us when they are on our lands and we watch that they don't overhunt. We make sure that the hunters are managed.

— David Codzi

The community is trying to balance supporting hunters to be on the land while trying to support them to hunt alternative species like moose and muskox, both of which seem to be more prevalent than in the past.

Presentation on Scientific Information

Tracy Davison (ENR)

ENR's most recent post-calving ground survey was conducted this year. In 2018, the post-calving population survey results were used to calculate the size of the Bluenose-West herd by using the Rivest method instead of the historically utilized Lincoln-Peterson. Of the two population estimation methods, ENR and the boards agreed at the 2016 meeting that the Rivest is the preferred estimation method as it takes into account group size along with the data from collars and photo surveys.

The population survey results (the number of adult caribou) were: Total Adult Population Estimate: 21,011 ± 4,602

Estimates place the Bluenose-West herd status well within the orange zone at the low end of the population estimates confidence interval, as the threshold between the orange and red zones for this herd is 15,000 animals.

Population trend and rate of change

The 2018 Rivest population estimate of 21,011 ± 4,602 (95% CI) caribou represents that between 2005 and 2018 the herd experienced a non-statistically significant decrease of 2% per year (CI -4 to 1%).

Rivest population estimates (with 95% confidence intervals) as well as minimum counts for the period from 1986 to 2018 are shown in Table 6 and Figure 7.

Table 6: BNW Rivest population estimates (2000–2018).

Year	Rivest Estimate
2018	21,011 ± 4,602
2015	21,535 ± 5,136
2012	32,326 ± 15,482
2009	21,773 ± 4,884
2006	28,461 ± 7,431
2005	26,228 ± 5,878
2000	118,472 ± 45,177

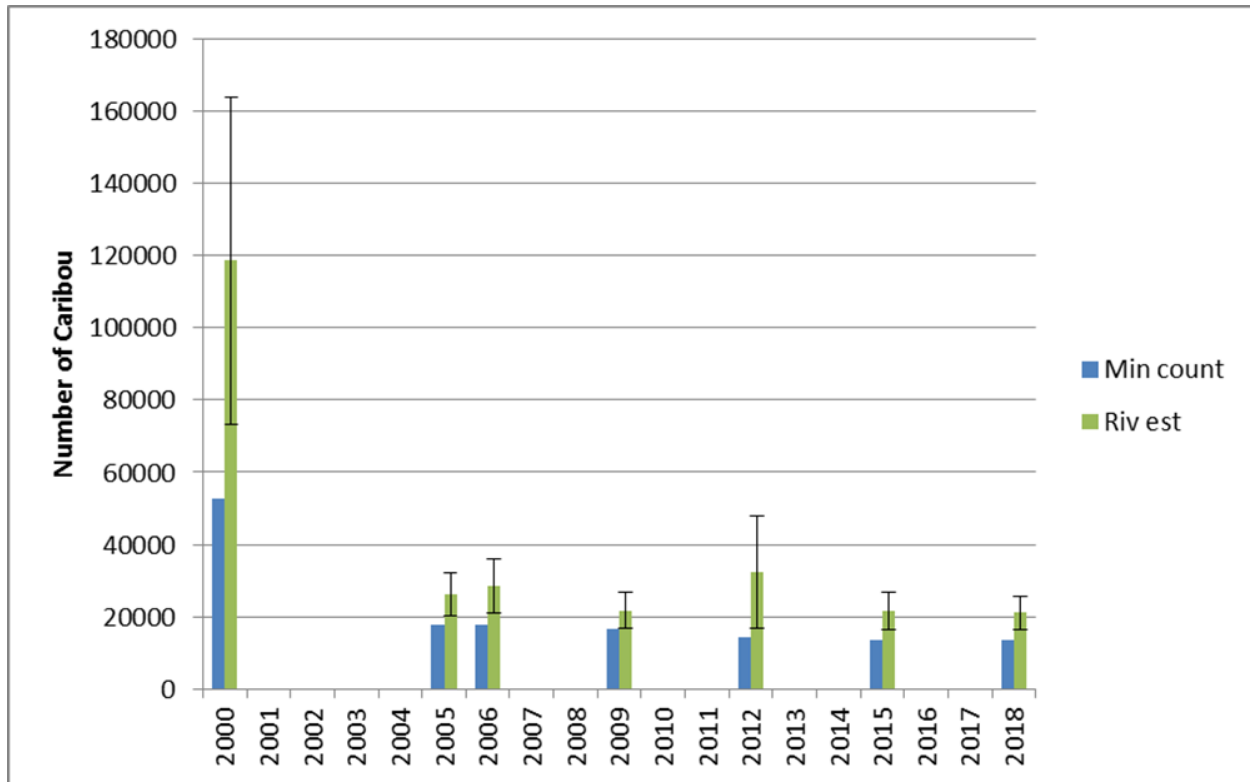


Figure 7: Bluenose-West herd Rivest population estimates from post-calving surveys since 2000. Minimum counts are included for comparison purposes.⁵

Productivity and recruitment

No new data on productivity and recruitment was provided. Data from previous years was presented and is summarized below.

Recruitment surveys show the number of calves that have survived their first winter to be ‘recruited’ into the adult population. This can vary greatly from year to year; in harder winters, fewer calves will survive. Generally, ratios of greater than 30 calves per 100 cows are considered reasonable.

In 2017 a recruitment survey was conducted for the Bluenose-West caribou herd, and a good ratio of 34 ± 2.8 calves per 100 cows was found. Recruitment survey data presented during the status meeting is shown in Figure 8. In the years 1983-1994, “Bluenose” includes Cape Bathurst, Bluenose-West and Bluenose-East.

Calf-to-cow ratios can be impacted by the harvesting of females. For example, if a large proportion of cows are harvested and the calves are not, then the number of calves per 100 cows left in the herd will be inflated and will be an inaccurate reflection of actual calf survival. Good harvest data, including the sex of the animals, date of harvest, and location, is needed to better assess the impact of this harvest on the calf-to-cow ratios.

⁵ Earlier years of survey results are available in *Taking Care of Caribou* and the ENR technical report.

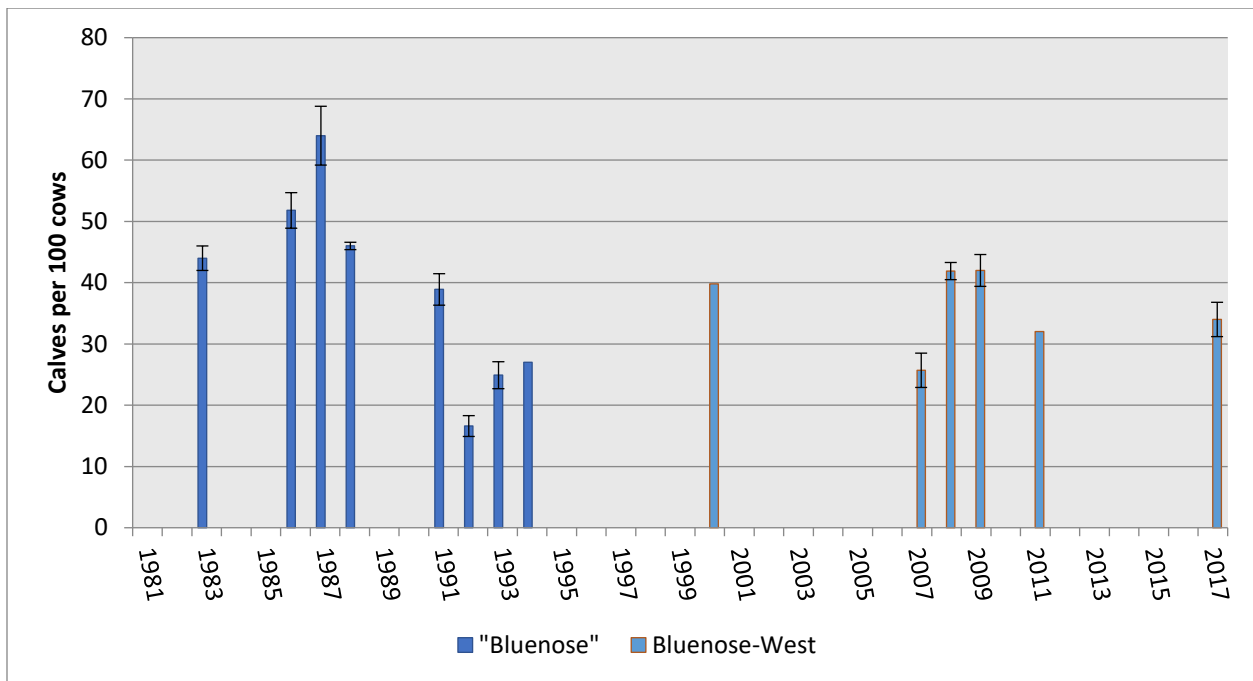


Figure 8: Recruitment estimates for Bluenose-West caribou, 1981–2017.

Adult composition

No new data on productivity and recruitment was provided. Data from previous years was presented and is summarized below.

The last fall composition survey conducted in 2009 found a bull-to-cow ratio of 70 bulls per 100 cows.

Body condition and health

ENR monitors body condition and health in barren-ground caribou by working with harvesters. Harvesters are asked to measure back fat, and to rate the body condition of the caribou they harvest as Excellent, Good, Fair, or Poor. These ratings are translated to a numerical value between one and four, with 1 = Poor and 4 = Excellent, so they can be averaged. Scientific information is based on harvester reports and samples for the Bluenose-West herd.

Condition information was reported for 6 cows and 8 bulls; back fat information was reported for 9 cows and 8 bulls in the 2017/18 season. The back-fat measurements indicate that cows were of good condition and the males lower when sampled.

Results for average body condition ratings for Bluenose-West herd are presented in Table 7 and Figure 9. Please note that samples were submitted from I/BC/06 harvests, since the change of zone boundary in 2014 means Inuvik and Tuktoyaktuk harvesters were mainly accessing Tuktoyaktuk Peninsula and Cape Bathurst caribou only Paulatuk samples are included since the 2014/2015 season.

Table 7: Results from hunter-harvest body condition sampling for Bluenose-West caribou.

Season	Average Condition Code (number of samples)	
	Female	Male
2017/18*	4.7 (6)	2.1 (8)
2016/17*	n/a	2.7 (6)
2015/16*	2.00 (1)	1.25 (4)
2014/15*	3.29 (17)	3.05 (19)
2013/14	2.6 (11)	3.1 (21)
2012/13	2.4 (14)	2.6 (29)
2011/12	3.0 (1)	(0)
2010/11	2.4 (5)	3.0 (23)
2009/10	2.2 (12)	2.5 (22)
2008/09	1.0 (7)	2.8 (6)
2016/17	n/a	2.7 (6)

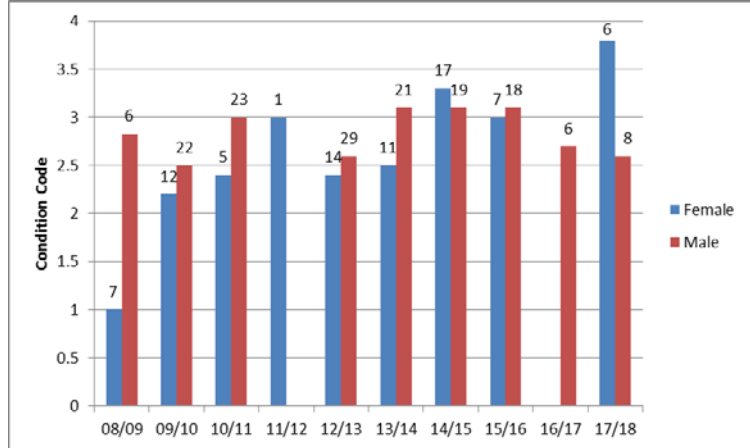


Figure 9: Average condition codes for the Bluenose-West herd, assessed by hunters on a scale of 1–4 with number of samples noted at the top of the bar.

* Includes only samples from Paulatuk since 2014/2015 because based on collar data, the change of the harvest zone boundary in 2014 means Inuvik and Tuktoyaktuk harvesters were mainly accessing Tuktoyaktuk Peninsula and Cape Bathurst herd caribou.

Back fat measurements for the Bluenose-West caribou herd are presented in Table 8 and Figure 10 below.

Table 8: Results from hunter-collected back fat and health sampling for the Bluenose-West herd combined.

Season	Back Fat in cm (number of samples)	
	Female	Male
2017/18*	1.35 (9)	0.52 (6)
2016/17*	n/a	1.79 (6)
2015/16*	2.00 (1)	0.13 (4)
2014/15*	2.21 (17)	2.94 (20)
2013/14	1.77 (11)	2.39 (25)
2012/13	1.66 (17)	1.30 (36)
2011/12	0.75 (2)	1.00 (1)
2010/11	2.01 (9)	3.31 (25)
2009/10	0.70 (12)	1.20 (22)
2008/09	0.00 (5)	2.40 (6)

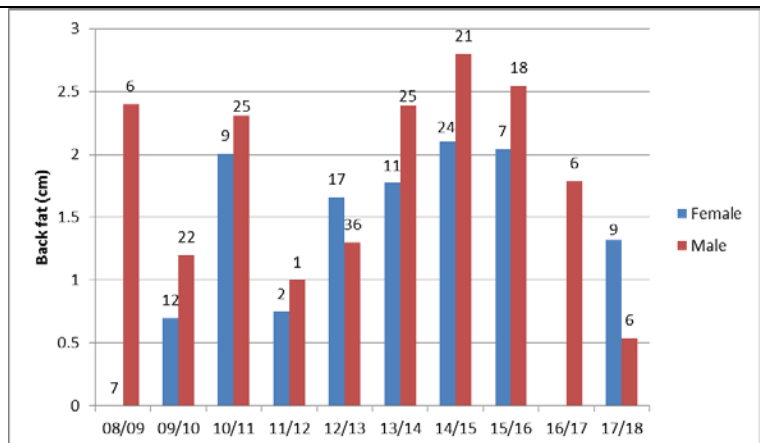


Figure 10: Average reported back fat measurement (in centimeters) for the Bluenose-West herd, with number of samples noted at the top of the bar.

* Includes only samples from Paulatuk since 2014/2015 because based on collar data, the change of the harvest zone boundary in 2014 means Inuvik and Tuktoyaktuk harvesters were mainly accessing Tuktoyaktuk Peninsula and Cape Bathurst herd caribou.

Harvest levels

A tag requirement was put in place for the Bluenose-West herd in the Gwich'in Settlement Area and Inuvialuit Settlement Region in 2007, and in the Sahtú Settlement Area in October 2009, following the boards' decision of a 4% Total Allowable Harvest (TAH) limit. Based on the 2006 (Lincoln-Peterson) population estimate of 18,050, the herd TAH was set at 722 animals. This TAH was shared between regions according to approximate historical use and by agreement of the GRRB, SRRB, and WMAC (NWT) with the Minister of GNWT. Harvest allocations to each region are: 22 Gwich'in (3%), 345 Inuvialuit (48%), and 350 Sahtú (48.5%), with five held back unallocated each year. This recommendation also included a bull-dominated harvest with a target of 80% bulls to encourage herd recovery.

Table 10 includes the harvest data collected to date by ENR, Inuvik Region using tag returns since 2007.

Table 9: Harvest data for Bluenose-West collected by ENR, Inuvik Region since quota implementation in 2007.

	Season ^a										
	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15 ^d	15/16	16/17	17/18
Aklavik	0	0	0	0	0	11	0	3	0	0	5
Inuvik	33	17	52	41	8	41	0	73	42	94	79
Tuktoyaktuk	37	63	14	17	24	27	12	75	75	95	87
Paulatuk ^b	198	150	230	239	279	261	150	97	171	72	122
Ulukhaktok	0	0	0	0	3	0	0	0	0	0	0
Sachs Harbour	0	0	0	0	0	0	0	9	0	0	0
	268	230	296	297	314	340	162	254	288	261	293
Gwich'in	2	1	13	22 ^c	22 ^c	0	0	3	5	4	12

^a Season changed to Sept 1 to Aug 31 in 2010, and to Oct 1 in 2013 and back to 1 July in 2017

^b Extra tags transferred to Paulatuk from communities after a certain date

^c Tags misplaced, assumed all used

^d Boundary change between I/BC/06 and I/BC/07

Predator populations

ENR collects samples from wolves harvested by hunters (Table 10); samples are mostly from the winter season, when wolves tend to be hunted. In the past stomach contents were sampled, and of all the Inuvik region mainland wolf samples submitted, 68% of the stomach contents was caribou. ENR is now looking at a more long-term analysis using stable isotopes, which will provide information on more than just wolves' most recent meal (e.g., will reveal more information about wolves' year-round diet).

Table 10: Number of wolf carcasses/samples submitted to ENR by Paulatuk hunters, 2007–2018.

Year	Paulatuk	Colville Lake	Fort Good Hope	Unknown
2017/18	1	7	n/a	n/a
2016/17	7	n/a	n/a	n/a
2015/16	4	4	3	4
2014/15	26	n/a	n/a	n/a
2013/14	15	30	2	2
2012/13	11	21	6	8
2011/12	12	19	2	0
2010/11	16	22	3	1
2009/10	1			
2008/09	n/a			
2007/08	3			
Grand Total	95	96	16	15

Table 11: Criteria used to assess Bluenose-West herd status in 2018⁶

Criteria	2018 Community-Based Information ⁷	Scientific Information ⁸	Comments
Population size	<p>Paulatuk (WMAC): Community members noted there is caribou in their region year-round.</p> <p>Tuktoyaktuk (WMAC): Noted that in the past 4 years they have seen more caribou than prior to 5 years ago, and last year there was more.</p>	Estimated number of adult caribou at least 1 years old in 2018 Rivest: 21,011 ± 4,602	Estimated based on July post-calving ground survey

⁶ This table is populated with information presented to the ACCWM to assess herd status in 2019 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

⁷ Bluenose-West caribou usually migrate through two settlement areas/regions and are typically harvested by four communities: Aklavik, Inuvik, Tsiigehtchic, and Tuktoyaktuk. In 2018, community-based information was documented in the following ways: 1. The Gwich'in Renewable Resources Board (GRRB) held a community meeting in Inuvik, and 2. The Wildlife Management Advisory Council (WMAC, (NWT)) held community meetings in Inuvik, Paulatuk, and Tuktoyaktuk; of these communities, Inuvik and Tuktoyaktuk are the communities that mostly encounter and harvest Bluenose-West caribou.

⁸ All scientific information and comments were provided by Environment and Natural Resources (ENR) (GNWT) unless otherwise noted.

	<p>Inuvik (WMAC): Members noted it is the same as last year.</p> <p>Inuvik (GRRB): This is more for the biologists to say with the surveys they conducted this year. From preliminary results, it seems that the population is stable.</p> <p>Colville Lake (Sahtú): We have a difference of opinion on numbers, but we are working through that.</p>		
Population trend and rate of change	<p>Paulatuk (WMAC): Community members noted the population seems to be increasing compared to the 1990s. We have caribou year-round now. In the 1990s we had to travel across the Anderson River to get caribou, but now for the past 8 years you don't have to go that far; you still have to go further inland to get caribou, but not as far as in the 1990s.</p> <p>Tuktoyaktuk (WMAC): Community members are seeing a few more caribou and the caribou bunches/herds are getting bigger compared to last year.</p> <p>GRRB: The population has increased in the past due to changing the survey method. This means that the TAH should increase to reflect 4% of the updated population estimate provided by ENR.</p>	There is no significant decrease per year between 2005 and 2018 (confidence interval [CI] -4 to 1%).	<p>Trend analysis is based on Rivest estimates.</p> <p>2015: 21,535 ± 5,136 2012: 32,326 ± 15,482 2009: 21,773 ± 4,884 2006: 28,461 ± 7,431 2005: 26,228 ± 5,878</p> <p>TAH based on 4% of 2006 LP population estimate 17,781.</p>
Productivity and recruitment	Paulatuk (WMAC): Community members observed everything was behind schedule. We saw a lot of young ones and fresh	No new information since 2017.	

	<p>calves; you see cows with calves just about anywhere you go.</p> <p>Tuktoyaktuk (WMAC): Community members observed there are a good number of calves with cows, including older calves (yearlings). Calves were seen in April this year, but in the past calves weren't seen until May. The reindeer are usually calving in April, but this was caribou that we were seeing.</p>	<p>In 2017, there were a moderate number of cows with calves in early April.</p> <p>Estimated number of calves per 100 cows in 2017: 32</p>	
Adult composition	<p>Paulatuk (WMAC): Community members observed that a lot of cows and calves were seen in the flats; saw a lot of young bulls around Falaize Lake area (beginning of September).</p> <p>Tuktoyaktuk (WMAC): Community members are seeing lots of lone bulls in July/August, but later in August the bulls start mixing with the cows and calves. There are fewer community observations because people were not able to get out this fall due to bad weather.</p>	<p>No new information since 2009.</p> <p>There is only one bull-to-cow ratio for Bluenose-West (2009) so trend is unknown, but the 2009 result is considered high.</p> <p>Estimated number of bulls per 100 cows in 2009: 70</p>	<p>The bull ratio is monitored because a bull dominated harvest was recommended.</p>
Body condition and health	<p>Paulatuk (WMAC): Community members observed the caribou by the coast were very skinny in the beginning of August this year. There were some fatter ones further out, up in the hills by Billy Lake area; saw rain effects on caribou this year (the rain was heaviest in December/January) – in March/April we saw abrasions from the ice on noses and legs (their shins); sometimes you see a</p>	<p>Condition of bulls was on average 'good' and cows were on average 'excellent' in the 2017/2018 harvest season.</p> <p>Average back fat in 2017/2018 season was 1.32 cm (range 0 to 2 cm) for cows and</p>	<p>Scientific information based on Paulatuk harvester-reported samples for BNW herd. Sample size was low. Condition information was reported for 6 cows and 8 bulls; back fat information was</p>

	<p>caribou with its lungs stuck to the ribs. Otherwise it is healthy.</p> <p>Tuktoyaktuk (WMAC): Community members observed the young bulls had 1–1.5 inches of fat in March; most caribou harvested are healthy; one caribou harvested was sick with pneumonia; one caribou harvested had tapeworms (looked like white rice); some non-typical antlers seen recently – flat and twisted, really wide; the bulls in July were already fat and had big antlers, and some bulls lost their velvet early this year; bulls had 2.5–3 inches of fat by end of July, and by August they were almost obese.</p> <p>Colville Lake (Sahtú): A lot of the caribou do not have much fat on them, suggesting they have trouble grazing.</p>	0.54 cm (range 0 to 1 cm) for bulls.	reported for 9 cows and 6 bulls in the 2017–2018 season.
Harvest levels	<p>Paulatuk (WMAC): Community members stated there was a lower harvest this summer due to the weather – we were not able to go out as much as we wanted; we try not to harvest cows at any time. We wait for the bulls in the spring. Many more bulls are harvested than cows; one harvester has only taken bulls for 10 years. We don't harvest in October/November because of the rut (Oct), stink (Nov); in the past, cows were harvested but this is not our practice anymore; there is a decrease in local harvesting because of conservation efforts; despite the numbers, we have never</p>	<p>Total harvest uncertain.</p> <p>We do not know the bull-to-cow ratio of the harvest. There is a target of 80% bull harvest.</p>	<p>TAH tag returns in Inuvik Region 2017/2018:</p> <p>Inuvialuit: 345 Quota; 293 harvested</p> <p>Gwich'in: 22 quota; 12 harvested.</p> <p>Sahtú: 350 quota; estimated less than 20 from Fort Good Hope harvested. Total harvest unknown.</p>

	<p>overharvested. We are natural conservationists; we only harvest bulls 3 months out of the year; the community harvest will happen again this year for Elders and single parents and we will target bulls; if a harvester can't take a bull, they will take a dry cow.</p> <p>Inuvik (GRRB): Nihtat RRC: 12/22 tags used for the Gwich'in this year. All 4 communities in the GSA asked for tags this year. All tags were given out, but some hunters didn't make it to the caribou because they were too late in the year. With the porcupine moving west and not coming to the Dempster Highway, tags requests are increasing. The Inuvialuit get 345 tags for the BNW. We agree with this because it is their main source of food. However, we would like more tags. The population has increased in the past due to changing the survey method. This means that the TAH should have increased following a 4% TAH.</p> <p>Colville Lake (Sahtú): The community as whole has reduced the hunt and we are trying to lower the cost of food so that people don't need to hunt as much. We believe that the caribou won't come around if we don't hunt them and don't follow the traditions of respect towards the caribou.</p> <p>We don't have numbers but we do know that people are hunting</p>		<p>TAH based on 4% of 2006 LP population estimate 17,781.</p>
--	--	--	---

	<p>less. There are a lot of other animals in the area that we are not used to seeing. People are shooting moose 2 or 3 times per month which may offset the caribou harvest. Similarly, we try to promote hunting other animals like muskox, which are growing in numbers in the region.</p> <p>Tuktoyaktuk (WMAC): Harvesters noted that fewer people were able to get out for the fall harvest (boating season) this year because of the weather; the first harvesters out see the most during both the fall boat harvest and snow machine harvest after freeze up; it is harder to harvest by ATV because the caribou are becoming more startled from the noise; now you have to park your bike and walk about ½ km to get within range. The season change for zone I/BC/06 is helping encourage bull harvest; human conservation measures have had an impact. Some people hunt without a tag or in the closed zone. Some people are wasting meat (i.e., killing caribou and only taking the hind quarter and leaving the rest); sale of dry meat has slowed down on social media since last year, but there is still some ongoing that is not advertised.</p> <p>Fort Good Hope (Sahtú): In the past they gave tags, but they didn't use them because that wasn't their law. Word is getting around to not to bother the</p>		
--	--	--	--

	<p>caribou; people are hunting other things like moose now.</p> <p>Traditionally when there are lots of caribou it was okay for everyone to come, but when they are low it is important that only the local harvesters should have access to those animals. In the past, the high level of access meant that outsiders were overharvesting. It is a problem that we have to deal with now. It is up to the traditional governments to control this. We are cutting down on the sale of caribou meat by providing employment in the communities.</p> <p>Colville Lake (Sahtú): We have asked people not to advertise the location of caribou on the land.</p>		
<p>Predator populations</p>	<p>Paulatuk (WMAC): Community members observed the wolf numbers are up. The wolves were really healthy. Normally in the summer the wolves don't have much fat but they did this year; grizzly bears are up (saw a mother with 3 cubs again this year). A grizzly bear was harvested and was really fat – even had stomach fat. The community is maxing out their grizzly bear tags. In general, there have been more eagles, except this past year we saw fewer eagles (there was less salmon and bad weather). We saw no eagles at the fishing site; wolverine numbers haven't changed – you always see tracks.</p> <p>Tuktoyaktuk (WMAC): Community members think there</p>	<p>Paulatuk submitted 1 wolf in the 17/18 season.</p> <p>Of the wolf stomach contents analyzed from the Inuvik Region mainland, 68% was caribou by weight (in studies during 2006–2010).</p>	<p>Changes in wolf harvest do not necessarily reflect changes in wolf abundance.</p>

	<p>are always predators around (grizzlies, wolverines, wolves); there are lots of golden and bald eagles and every year you see more. A few years back a bald eagle was observed taking a calf. This year there are far more grizzly bears; there are some sows with 4 cubs and lots with 3 cubs; the by-law restricts hunting females with cubs so that makes it hard to harvest.</p> <p>Fort Good Hope (Sahtú): There are lots of bears and wolves. There are a lot of wolves and the packs are big.</p> <p>Colville Lake (Sahtú): This year there are more grizzly bears. They are staying out of the den and they are hunting longer. The snow is getting crustier and the wolves can get around on it easier.</p> <p>Fort Good Hope (Sahtú): There are more bears along the Mackenzie, in areas that we haven't seen them before.</p>		
<p>Range and movement patterns</p>	<p>Paulatuk (WMAC): Community members observed the caribou usually come down here, but last year and this year you see the movements go further south from Paulatuk; the caribou migrated east early this year. The first week of August they were already crossing George Creek; the caribou never came up to the coast, probably because they didn't need to escape the mosquitoes or cool off because the weather was so cool and rainy; in March and April, the</p>	<p>Most collared cows return to their calving ground – 149 of 151 cows returned (2010 to 2018).</p> <p>One Bluenose-East collar moved to the Bluenose-West calving grounds in 2018.</p>	

	<p>caribou weren't where they were supposed to be (due to ice). They were gone – only old tracks.</p> <p>Tuktoyaktuk (WMAC): Community members observed that the caribou move all over and can switch herds; the caribou are moving further up into the bush because the snow levels are lower; small caribou herds are being seen near small muskox herds in May, so they are sharing the same feeding areas near the Mason River area.</p> <p>Inuvik members observed in the spring of 2018 that there were a few bunches seen near the Inuvik-Tuktoyaktuk Highway and then not as many seen during the summertime.</p> <p>Inuvik (GRRB): People used to see caribou around Inuvik when growing up (around 30 years ago). Now there are none.</p> <p>Fort Good Hope (Sahtú): We need to monitor in more areas as caribou are in places where they may not have been monitored before.</p>		
<p>Environment and habitat</p>	<p>Paulatuk (WMAC): Community members noted this year we had bad weather – it was cold with rain and snow through the summer. June had a few good days; green-up about the same time. There was an extended spring thaw; no berry picking this year due to weather (a cold spell in July killed the aqpiqs). Cranberries are late. Lots of</p>	<p>There were very few fires in the 2018 season.</p> <p>Parks Canada/TNNPMB is currently developing a caribou forage availability study for Tuktuk Nogait National Park.</p>	

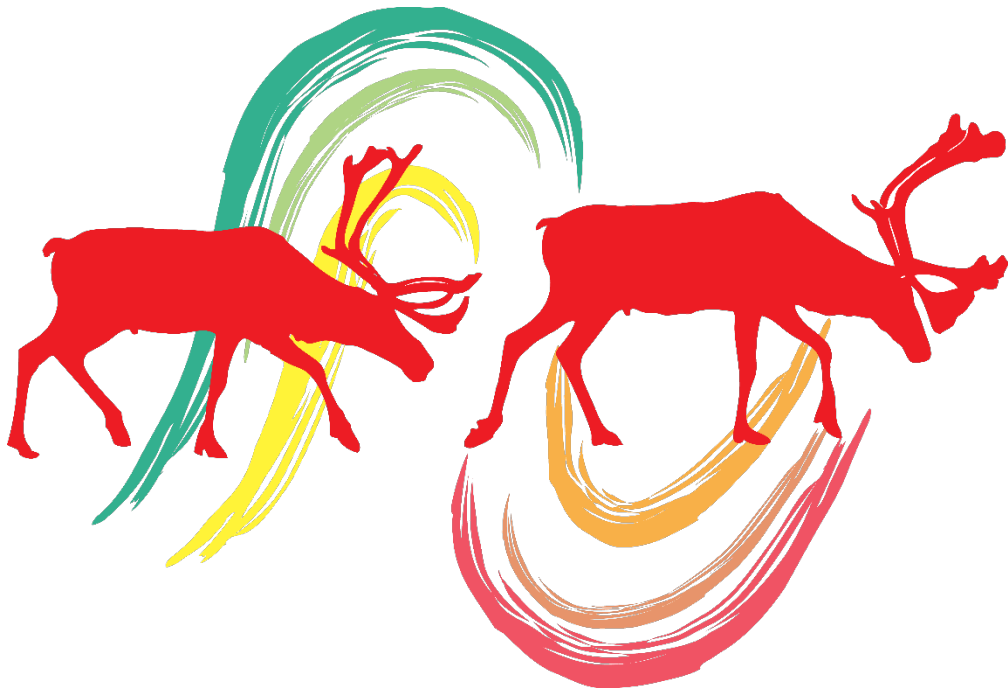
	<p>blueberries; there were icing events this year (December/January) – there was a 3-inch layer of ice; there was a lot more slumping and erosion noticed out on the land; the north-facing snowbanks melted despite the cold in the Rat Lake area. Lots of green foliage. Arctic cotton was growing a lot and purple flowers [lupines]; the freeze-up is already here this year (mid-September).</p> <p>Tuktoyaktuk (WMAC): Community members noted that there was rain last December that caused a lot of ice – the ptarmigan were slipping around; more slumps and landslides, including landslides right near the caribou trails; the snow levels are lower and the caribou are moving further up into the bush; creeks are plugged up by beavers, so there is overflow and creeks are widening; last few years have been way less bugs (warble flies, etc.) so the caribou are staying where there is better food and not running around as much; had a cold spring and summer, lots of rain and wind.</p> <p>Inuvik (GRRB): Climate change is changing a lot of things. There is more thawing; it’s warm and wet. It used to be colder (a long time ago). Now, it’s still 2–3 degrees in September.</p> <p>Colville Lake (Sahtú): Lots of landslides, waterways shifting, vegetation is sliding into the</p>	<p>Once finalized, this map will be used in the future to monitor changes in forage quality and availability in TNNP.</p>	
--	---	---	--

	<p>water as the banks collapse, and there are concerns about the increase in mercury in the water; more snow, lots of crust. It is getting warmer; there were more caribou when it was cold.</p>		
<p>Human disturbance</p>	<p>Paulatuk (WMA): Community members stated one company, Generation Mining, flew their helicopters during the summer. They heard it every day as far as Egg Island. One community member flew as a wildlife monitor; most of the time flew low level; submitted reports to HTC and EISC. The vast majority of the caribou weren't congregating when they flew. Saw mainly young bulls, when they passed caribou they didn't budge (the muskox spooked though). They saw very few caribou as the ENR surveying was going on at the same time, so they stayed out of that area; there was collaring done by ENR in March and a photo survey was flown in July.</p> <p>Tuktoyaktuk (WMA): Community members stated there are lots of helicopters and planes flying around at the end of June/early July up the peninsula past Campbell Island; caribou are more startled by noise (i.e., ATVs) than they used to be.</p> <p>Inuvik members stated there is concern about the Inuvik-Tuktoyaktuk Highway now that it is open and there is a lot of traffic and the caribou will leave the area; the caribou seen near the</p>	<p>Summer 2018 Generation Mining conducting a Magnetotelluric survey near Paulatuk.</p> <p>TNNPMB/Parks Canada has agreed to minimize over-flights during calving and post-calving.</p>	

	<p>highway in spring 2018 didn't seem bothered.</p> <p>Inuvik (GRRB): With the new ITH, the access to BNW has increased a lot for Tuktoyaktuk (year-round access). It is ok because there is a tag system, but it could allow an increase in poaching; the development of monitoring plans will help address these pressures.</p> <p>Colville Lake (Sahtú): We are asking outsiders to let the community government office know when they are on the land and to get permission to go hunting on our lands.</p>		
--	---	--	--

BLUENOSE-EAST CARIBOU

– RED STATUS –



Tuktuvialuk (Inuvialuktun, Siglitun dialect)
Tuktut (Inuinnaqtun, Kugluktuk, Western Kitikmeot)
ʔedə (K'áhsho Got'íne, Dela Got'íne)
ʔehdaɣla Goʔekwé (Délíne Got'íne)
Sahti ʔekwò (Tłıchq, Wek'èezhìi)

Understanding Current Bluenose-East Herd Status

The ACCWM met on November 22, 2017 to review information pertaining to the status of the Bluenose-East caribou herd. Prior to that, member boards reviewed information available and held discussions in preparation for the annual status meeting. During status meeting discussions about Bluenose-East caribou, up-to-date scientific knowledge was provided by ENR and Government of Nunavut Department of Environment (GN-DOE) biologists, and community knowledge was provided primarily by representatives from three regions: Wek'èezhìi (Tłı̄chq̄), the Sahtú Settlement Area, and the Western Kitikmeot region of Nunavut.

The 2019 Management Setting

At the start of the 2018 status meeting, a roundtable was held to give participants an opportunity to provide a brief update on some of the management actions and developments that arose in their region over the course of the last year. During the roundtable there were a number of management topics raised that could have implications for Bluenose-East caribou and their habitat, including:

- **Species At Risk Assessments:** COSEWIC has assessed barren-ground caribou as Threatened. The federal SARA listing has not been done yet. Depending on listings, work on recovery planning and identification of critical habitat may need to happen.
- **Draft Caribou Management Strategy (2018–2022):** ENR-GNWT awaiting Cabinet review and approval; will then be submitted for public/broader review and approval.
- **Increase in predator population:** Representatives from all of the regions mentioned that there is increasing concern about the level of predation.
- **Kugluktuk HTO initiatives:** Between 2007 and 2018, the KHTO led initiatives to reduce harvest pressure on the Bluenose-East caribou herd such as:
 - Education (public meetings, workshops, posters)
 - Stopping organized community hunts on caribou
 - Promoting harvesting of alternate species (e.g., muskox)
 - Stopping caribou sport hunts
 - Active involvement in interjurisdictional meetings
- **Community-led conservation planning:** The KHTO Integrated Community Caribou Management Plan includes a local plan for managing the harvest allocation. Additional changes in Nunavut regulations that could influence caribou include: increased moose hunts, no beneficiary tag requirement for grizzly bears, no tags or season requirement for wolf harvesting, and an increased muskox TAH to offset caribou harvesting restrictions.⁹ In 2017 a community conservation plan was put into effect in Délı̄nq̄ to guide peoples' actions towards Bluenose-East caribou,¹⁰ and a community conservation plan for caribou was being developed for Colville Lake at the time of the meeting.

⁹ The Kugluktuk management plan is available from the Kugluktuk Angoniatit Association (Hunters and Trappers Organization), kugluktuk@kitikmeothto.ca.


¹⁰ The Belare Wı̄le Gots'ę̄ ʔekwé̄ plan is available from the Lands, Resources and Environment Department of the Délı̄nq̄ Got'ı̄nq̄ Government.

Status Decision 2018

According to the process outlined in the Management Plan, numerous criteria are used to make a status decision. The information considered by the ACCWM in making the 2018 decision is presented below and summarized in Table 3 at the end of this section. Additional historic information can be found in two companion reports available from ACCWM members and on the ENR website.¹¹

Management actions are based on these phases of the population cycle, using approximate levels or “thresholds” as a guide. Thresholds for the herds were determined by the ACCWM based on known historic highs and lows, with input received from community and technical experts in a consensus-based process. **However, it is not only the threshold value that is used to determine the colour zone – the determination of herd status takes into account all available information.**

Based on the information provided, the ACCWM determined the Bluenose-East herd status colour zone to be **red (low)** in November 2018. This decision recognizes the worsening population number as the herd can no longer be classified as orange (intermediate and decreasing). The forthcoming 2019/20 actions will be based on this determination. The herd size continues to be low, and there are concerns about the low adult survival rates leading to a steep decline in the population. There was limited community data on the status of the herd as a result of the herd remaining far from each of the communities throughout the year. As such, it was felt that it was best to apply the precautionary principle and downgrade the status of the herd based on the population numbers presented by the Government of Northwest Territory, Department of Environment and Natural Resources (ENR).



In 2018/19

the Bluenose-East caribou population status is

RED: low

¹¹ Davison, T. 2016. Technical Report on the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds: Companion Report to ‘Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground Caribou Herds Management Plan’. Department of Environment and Natural Resources, Government of the Northwest Territories. File Report No. 150. 81 pp.

Advisory Committee for Cooperation on Wildlife Management. 2014. We Have Been Living with the Caribou All Our Lives: A report on information recorded during community meetings for ‘Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan’. Yellowknife, NT. 196 pp.

Presentations Given at the 2018 Annual Status Meeting

Both scientific and community knowledge helped to inform the 2017 status decision; further details on some of the relevant survey methods are included in **Appendix D**. ENR provided current scientific information at the status meeting; the data included here were presented at the meeting.

Community information was provided on each of the ten monitoring criteria. The following outlines regional approaches to gathering information:

Western Kitikmeot Region, NU – Kugluktuk information was documented and shared by Larry Adjun and Amanda Dumond of the KHTO during the meeting. A representative from NTI was also present during the status meeting.

Sahtú Settlement Area, NWT – Sahtú information was provided by Walter Bezha of the Délı̨nę Got'ı̨nę Government (DGG) SRRB staff, and members also participated in part or all of the status meetings.

Wek'èezhìı̨ (Tłı̨chǫ), NWT – WRRB and TG representatives attended the status meeting but did not provide new data, as the herd did not enter the region and local hunters were not able to harvest any Bluenose-East caribou.

The 2018 status meeting was documented in notes that were as close to verbatim as possible. As a result, we have been able to include representative quotations from community members as well as from the status meetings; these are indented from the main text and presented in an italicized, gray font. They have been edited for clarity or brevity as necessary.

Sahtú Community Knowledge Presentation

Walter Bezha (SRRB & Délı̨nę Got'ı̨nę Government)

As the Bluenose-East herd did not come near any of the Sahtú communities, this presentation focused on the Belare wílé Gots'é ʔekwé (Délı̨nę's caribou conservation plan). Walter explained that being able to write and understand his own language helps him to understand the complexity of the plan, which isn't always evident in English.

The Dene principles

What you need to know is that people in town are doing things their own way; we just don't see it. The new plan is trying to solve all the things that were infringing on treaty rights.

One of the big ones is that this comes back to respect. We don't talk about caribou. Same thing that we don't call our grandparents by their names, we call them 'grandfather' out of respect. I don't have to say 'caribou' to talk about harvesting, we can talk about us. We harvest them. The other principle is Dene Ts'ı̨ı̨. Why didn't

he say it was bad? Now he asks? Who is Dene if this person isn't? Who is this person my grandfather was talking about? He has respect for the wildlife, he has a creator, he has a moral dene code to live by. Think about the Canadian constitution and their "reasonable person." Remember to thank someone when you take things.

The other part of the plan is that we are all related. In the Sahtú if you look at your family tree, you will see that we are all related. And sharing comes from that we are all one family.

The other major part of the plan is to hunt like your grandfather. The knowledge that the grandfathers have that we have to bring forward. Their knowledge is connected to certain areas, or certain lands. —Walter Behza

Review and change

Belare wílé Gots'é ʔekwé is meant to be a living document. It is reviewed and changed as conditions change. The Déljñę Community Government can look at different indicators than the ENR. At the same time, they can choose to support initiatives that reduce impacts on caribou. The example was given that it would be better to spend funds on harvesting fish than on another caribou survey.

Enforcement

Enforcement is done socially. While there are quotas set and definitions in the law, the first method for dealing with people who do not follow the plan is to get leadership and familiars involved. If the actions continue, ENR is brought in only as a last resort.

Awards

Belare wílé Gots'é ʔekwé provides recognition for people who follow the plan and its principles. Awards are given to those who hunt the way their grandfathers do.

Self-regulation

If one Bluenose-East Caribou is shot in Déljñę, everyone would know. As such, the leaders and community are able to track the hunt, ensuring that the harvest is within an acceptable limit.

Kugluktuk Community Knowledge Presentation

Larry Adjun (KHTO)

The Kugluktuk community knowledge presentation focused mainly on the data presented in that status table (see Table 12 below). A number of initiatives are underway to both limit impacts on the Bluenose-East herd and to help better understand what factors may be controlled to help improve conditions for the herd. For example, the Government of Nunavut (GN) has funding for a pilot project to study wolf populations in the region and has a incentive of \$300 for each wolf that is harvested.

Hunters were urged to hunt species other than caribou. The KTHO received money to study muskox and is working with harvesters to support a steady and healthy muskox harvest. They are currently running a sample kit collection program with the GN and University of Calgary to help see what diseases there are in caribou and muskox. They also help pay for hunters' gas.

Hunters are accustomed to reporting their harvest for all species, as this is something they did before the introduction of the tag system. For this reason, the KTHO is confident in their harvest report numbers and that hunters are following the no-hunting zone rules and dates.

Lastly, the prevalence of grizzly bears in the region was highlighted. People are seeing them closer to the community and in higher numbers than ever before.

Tłı̄chq̄ Community Knowledge Presentation

Jody Pellissey (WRRB), Joline Husky (Tłı̄chq̄ Government)

No presentation from the Tłı̄chq̄ Communities. In the past the TG and the WRRB would hold joint community meetings. Last year most of the harvest was from McKay Lake, so it was felt that if community meetings were held this year they would only have received information about the Beverly/Ahaik herd.

Presentation on Scientific Information

Jan Adamczewski (ENR)

Population size and rate of change

ENR's most recent calving ground survey was conducted this year. ENR switched from post-calving ground surveys (still used for Bluenose-West and Cape Bathurst herds) to calving ground surveys for the Bluenose-East herd in 2010.

The 2018 population estimate of 19,294 ± 4,729 (95% CI) caribou represents that between 2015 and 2018 the herd experienced a statistically significant decrease of 50%. Earlier years of survey results are available in *Taking Care of Caribou* and in the ENR technical report.

Year	Estimate
2018	19,294 ± 4,729
2015	38,592 ± 4,733
2013	68,295 ± 18,041
2010	102,704 ± 39,965

In 2018 the estimated number of breeding cows was 11,675 ± 2,040 (95% CI), down from 17,396 ± 2308 (95% CI) in 2015. The percentage of breeding females is high at almost 80% of the 13,988 ± 2,333 adult females.

In a stable herd, cow survival rates are in the 82–85% range. In 2013–2015 it was at 71%, and it is likely that the survival rate is similar in 2015–2018. Similarly, calf survival rates in a stable herd are 30–40:100. ENR reports that while the average survival rate is in this range, at 30:100, this is not high enough when coupled with the poor rates of survival for adults. One positive indicator is the pregnancy rate, which is 94% in 2014–2018. In a stable herd the pregnancy rate is at least 80%.

Adult composition

In October 2018, ENR found that there were 38.0 \pm 5.7 bulls:100 cows, slightly less than in previous surveys. The number of bulls per 100 cows was determined by scientists four times between 2009 and 2017, and there was little change between the four years of information (37–44 bulls to 100 cows each year). Bull:cow ratios of 60–70:100 cows were reported in the early 1980s when NWT herds were last increasing rapidly; lower ratios are more typical of stable or declining herds. Steady bull-to-cow ratios in a period of cow decline would indicate that bulls are likely to be declining at a similar rate to that of cows. The number of bulls is naturally lower than the number of cows, and bulls are able to mate with many cows within the same season.

When asked why ENR’s data was indicating that adult survival rates were so low, Jan responded that they were working with their statistician to analyse when and where collared females die. So far they can see that there is very little mortality on the calving ground; They die primarily on the summer range, and this is from predators. In June 80% of females were produced. By late October only 25% are left.

Harvest levels

According to ENR, harvest levels were at 15 bulls taken in the winter of 2016–2017 and 10 bulls in 2017–2018. As the herd generally stayed away from areas that are easily accessed by hunters, people tended to focus their hunt on the Beverly herd, which can be accessed via the winter roads to the mines.

Predator populations

ENR had very little new information on predators, although it was noted that they are recording many more grizzly bears than wolves (44 grizzly bears and 9 wolves).

Table 13: Criteria used to assess Bluenose-East herd status in 2018 ¹²

Criteria	Community-Based Information	Scientific Information	Comments
Population size	<p>Kugluktuk: The population is still on a slow decline.</p> <p>Sahtú & Tłı̄chų: Data is limited as the BNE herd stayed far from the communities. As such, there are no comments on the indicators here and below.</p>	<p>Estimated number of adult caribou at least 1.5 years old in 2018: 19,294 \pm 4,729.</p> <p>Estimated number of breeding cows 11,675 \pm 2,040.</p>	<p>Kugluktuk: ENR should extend the range of surveys further from the collar locations.</p> <p>ENR: Population estimates are based on June calving ground survey. The October composition survey was used to estimate sex ratio.</p>

¹² This table is populated with information presented to the ACCWM to assess herd status in 2018 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

<p>Population trend and rate of change</p>	<p>Kugluktuk: The herd is moving farther south and further west of Kugluktuk. Not close to the coast this year.</p>	<p>Estimated 19–20% annual rate of decrease 2015 to 2018; same rate of decline 2010–2013 and 2013–2015.</p>	<p>Kugluktuk: Caribou are far from community during spring, summer, and fall 2018. Difficult to make observations.</p> <p>ENR: Herd declined by half in 2015–2018. High adult and calf mortality do not indicate a stable population, though pregnancy rates do look better this year.</p> <p>Estimated herd size: 2018 = 19,294 ± 4,729 2015 = 38,592 ± 4,733 2013 = 68,295 ± 18,041 2010 = 120,880 ± 13,398</p> <p>June calving ground photo surveys, number of breeding cows ± 95% CI:</p> <p>2018 = 11,675 ± 2040 2015 = 17,396 ± 2,308 2013 = 34,472 ± 4,364 2010 = 51,757 ± 11,092</p>
<p>Productivity and recruitment</p>	<p>Kugluktuk: Not many twins. Difficult to determine cow-to-calf ratio.</p>	<p>Percent breeding females June 2018 on calving grounds: 83%. Pregnancy rate of captured cows 2014–2018: 94% (46/49). Calf-to-cow ratio April 2018, 37.5 ± 2.5:100. Calf-to-cow ratio Oct. 2018, 25.7 ± 3.4:100.</p>	<p>Kugluktuk: Caribou are far from community during spring, summer, and fall 2018. Difficult to make observations.</p> <p>ENR: Average March calf-to-cow ratio 2014–2018: 30.1:100. 2018 results suggest good initial productivity (June), poor calf survival first 4–5 months (October).</p>

<p>Adult composition</p>	<p>Kugluktuk: Large herds, so difficult to determine bull-to-cow ratio.</p>	<p>Bull-to-cow ratio Oct. 2018, 38.0 ± 5.7:100.</p>	<p>Kugluktuk: Caribou are far from community during spring, summer, and fall 2018. Difficult to make observations.</p> <p>ENR: Slightly lower than bull-to-cow ratios from 2009, 2013, 2015 of 42-43:100. Increasing herds in NWT in early 1980s had ratios of about 65:100.</p>
<p>Body condition and health</p>	<p>Kugluktuk: Caribou were observed to be fairly healthy; the bulls were fat.</p>	<p>No new information – minimal harvest in North Slave Region last 2 winters.</p>	<p>ENR: Délı̄ne and Kugluktuk may have information.</p> <p>Délı̄ne: 21 health monitoring kits submitted to ENR in 2016.</p>
<p>Harvest levels</p>	<p>Kugluktuk: Very low at this time compared to last year; 49 (30 males, 19 females) reported to date, Nov 8. Some tags still signed out.</p> <p>In 2017/18, 174 were harvested.</p> <p>Sahtú: Zero caribou were harvested in Délı̄ne.</p> <p>Wek'èezhii: No authorization cards were used.</p>	<p>Total reported harvest in N Slave region NWT – winter 2016–2017, 15 bulls; winter 2017–2018, 10 bulls.</p>	<p>Kugluktuk: Caribou are far from community during spring, summer, and fall 2018. Harvest levels of moose and muskox have increased.</p> <p>Community implemented a no-hunting zone from June 1 to July 1 for the BNE Herd. TAH of 340.</p> <p>ENR: Bluenose-East caribou have been in remote areas last 2 winters in NWT in N Slave region; most N Slave hunters have hunted Beverly/Ahiak caribou in east on mine</p>

			<p>winter roads. DGG reported the harvest of 7 but are stating they are boreal caribou.</p> <p>Wekweèì (Tìjchq): If we take everything now, it will be gone for generations.</p> <p>Wek'èezhii: 750 TAH allocated between a number of regions and indigenous organizations.</p> <p>Déljne (Sahtú): Maximum harvest threshold: 150.</p>
Predator populations	<p>Kugluktuk: Lots of wolves, grizzly bears, wolverines. Grizzly bears with twins, triplets. Predator tracks constantly heading west.</p> <p>GN is providing funding for predator carcasses. The price for wolverines has stayed the same while the price for wolves has increased.</p> <p>Déljne: There has been an increase in grizzly bear and wolf sightings.</p>	Limited information on numbers. June 2018 calving ground survey: 44 grizzly bear sightings, 9 wolves.	<p>ENR: Continued trend of more grizzly bears than wolves seen on Bluenose-East calving grounds 2010–2015.</p> <p>Kugluktuk: No tags needed for grizzly bear hunt. Most of the grizzlies that are killed are subadult males shot in the community.</p> <p>Raptor studies are underway to understand impacts from predation on caribou.</p>
Range and movement patterns	<p>Kugluktuk: Spring, west of Kugluktuk. Summer/fall, still very far.</p>	Fidelity of Bluenose-East collared cows to calving ground 2008–2017: 97–98%.	ENR: Some years Bluenose-East have mixed a lot with Bathurst caribou to the east.

	<p>Wekweèti (Tłıchǫ): There used to be caribou, but now there are not even tracks.</p>	<p>Herd wintered on own 2017–2018; little mixing with other herds. Very late spring 2018 movement to calving grounds.</p>	
<p>Environment and habitat</p>	<p>Kugluktuk: Cool summer, fewer bugs, fair amount of rain, moist land, good eating. Caribou farther inland, not on coast, like to face south wind.</p> <p>Wekweèti (Tłıchǫ) Forest fires and climate change have changed the land so that caribou don't come around anymore.</p>	<p>There were very few fires in the 2018 season. Fairly wet summer in NWT generally.</p>	<p>Délıne (Sahtú): 2016–2017: Lots of ice around Port Radium made it hard to reach the herd.</p> <p>Délıne (Sahtú): Hardly any mosquitoes; lots of sand flies earlier than usual.</p>
<p>Human disturbance</p>	<p>Kugluktuk: Last few seasons, not close to Kugluktuk, except for aircraft, i.e., surveys. Proposed roads and mines in the areas far to the east.</p>	<p>Very limited, no active mines.</p>	<p>ENR: Tundra Copper exploration on calving grounds – not active last 3 years.</p>

Appendix A: List of ACCWM Working Group Members

The ACCWM formed a working group to draft the Action Plans that accompany the *Taking Care of Caribou* Management Plan. The Working Group included representatives of the following organizations:

- ʔehdzo Got'Inę Gots'ę Nákedı (Sahtú Renewable Resources Board)
- Dehcho First Nations¹³
- Department of the Environment, Government of Nunavut
- Environment and Natural Resources (ENR), GNWT
- Gwich'in Renewable Resources Board
- Inuvialuit Game Council
- Kitikmeot Regional Wildlife Board
- Kugluktuk Hunters and Trappers Organization (Kugluktuk Angoniatit Association)
- Nunavut Wildlife Management Board
- Parks Canada Agency
- Tłı̄chq̄ Government
- Tukturnogait National Park Management Board
- Wek'èezhìi Renewable Resources Board
- Wildlife Management Advisory Council (NWT)

¹³ The Dehcho First Nations organization is part of the Working Group, but has had very limited involvement. There is an outstanding invitation for them to join the ACCWM.

Appendix B: Terms of Reference for the ACCWM Annual Status Meeting

Background

Taking Care of Caribou: The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan outlines a long-term framework for management actions that are based on a herd's status. The ACCWM is responsible for determining herd status each year and recommending appropriate management actions based on that status. This is done at an annual status meeting, normally held in late November. Management and action planning are based on a harvest year of July 1 to June 30.

Purpose of the Annual Status Meeting

The purpose of the annual status meeting is to:

- Assess the population status of the herd,
- Determine the management (colour) zone that applies to the herd based on the assessment, and
- Recommend management actions for the following year.

Financial Considerations

The individual boards of the ACCWM are responsible for expenses related to their members' participation, and the administrative costs of convening meetings, as outlined in their Memorandum of Understanding (2016). Individual boards of the ACCWM will cover the expenses of their members' travel to and participation in the annual status meeting. They will take turns hosting the meeting, and will cover the costs for the meeting room and other associated costs of hosting the meeting. Host boards may seek supplementary funding to cover these costs as needed. All other participants of the annual status meeting are responsible for costs they may incur in their participation.

Host Requirements

The meeting chair/host party shall provide secretariat services to the Committee for the hosted meeting. For further clarity, secretariat services include, but are not limited to, organizing a meeting, preparing a meeting agenda, coordinating preparation of background information, taking notes, and preparing meeting minutes and correspondence.

Meeting Preparation

Preceding the annual status meeting, the following steps will take place:

1. A meeting date will be set by the ACCWM and communicated to all partners.
2. Researchers, community members, and other interested parties may be invited to present information and/or participate as appropriate, eight weeks prior to the status meeting.

3. Eight weeks prior to the meeting, member boards will collect, compile, and coordinate monitoring information to be shared with other boards. Other agencies and organizations that may also have information will be approached at this time (e.g., PCA, GN, etc.). Member boards use this information to populate the monitoring table.
4. Four weeks prior to the meeting, parties need to confirm attendance at the meeting. Regionally populated versions of the monitoring table are then distributed to confirmed attendees. This will include all information available from community monitoring, traditional knowledge work and scientific monitoring, and will include harvest information.
5. There is an expectation that each member board will come to the annual status meeting prepared to discuss herd status and propose management actions through consensus.

Meeting Format

The annual status meeting will be organized into two working sessions, with the following steps taking place during those sessions:

1. Public information and comment meeting
 - Review available information from each region
 - Receive presentations, summary reports, etc.
 - Review and discuss actions that were implemented in the preceding year
 - Review and evaluate implementation of actions under communications strategy
 - Introduce and discuss actions that are proposed for the upcoming year
2. In-camera meeting of the ACCWM and support staff
 - Finalize monitoring table, based on all regional input
 - Collectively review and discuss all available community-based information (including traditional knowledge) and scientific information
 - Member boards deliberate to determine herd status, considering all information that was presented during the public information and comment meeting
 - Evaluate implementation of priority actions in Action Plan from previous year
 - Review recommended management actions based on status and prioritize actions for coming year
 - At the conclusion of each meeting, the participating members shall determine the chair/host and date of the next meeting

Meeting Deliverables:

1. Written summary of the meeting, including proposed status decisions for three herds, the populated monitoring table, and a rationale for the status decision for review and consideration by each member board
2. Recommendations for prioritized, status-appropriate management actions and revised Action Plans
3. Revised communications actions as needed
4. Determination of the confidentiality of the information

Following the annual status meeting, the chairs of the member boards present these deliverables to their respective boards for review and consideration. Each member board then follows the process laid out in their land-claim agreements to determine whether they support, oppose, or accept the recommended status and associated actions with comments or revisions.

Within 30 days, the ACCWM representatives will each meet with their individual member boards (via teleconference or in person) to formalize their board's position regarding the status decision and recommended actions. Each member board then communicates their position to the Minister; other ACCWM member boards are copied on this correspondence. The ACCWM then submits updated Action Plans for implementation. In Nunavut, the Kitikmeot Regional Wildlife Board will communicate their position regarding status and actions to the Nunavut Wildlife Management Board for a decision (NWMB). The NWMB then will forward their decision and recommendations to the Department of Environment Minister for approval prior to implementation.

Amendments to Annual Status Meeting Terms of Reference

This Terms of Reference will be reviewed from time to time as the ACCWM member boards may determine. Any member board may propose amendments at any time, but amendments proposed within three months of the annual status meeting shall not be reviewed by the ACCWM until after the meeting. The board proposing the amendment(s) has a responsibility to forward them to all member boards. Boards shall have 90 days to provide comments. Once approved by all the member boards, the amended Terms of Reference shall supersede any previous versions.

Appendix C: Communication Plan

This communication plan is a living document. Its current version reflects the knowledge and understanding of the ACCWM during the first round of action planning in 2015 and early 2016. It is expected that it will evolve as the ACCWM and its member boards continue to implement *Taking Care of Caribou* and the associated Action Plans. This communication plan addresses the specific context of managing these caribou herds in the NWT and Nunavut, which includes a diversity of Indigenous and non-Indigenous cultures and languages, and various types of wildlife management institutions. This plan focuses on formal communications while recognizing that a great deal of communication takes place in informal ways in the north (for example, one-on-one conversations, phone calls, etc.).

Goals and Objectives

Clear principles and methods for communication will help 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.

Taking Care of Caribou describes communications about caribou stewardship as being accessible and active, as well as two-way between knowledge holders and wildlife managers.

Our goals are for communications about Action Plan implementation to be regionally appropriate. Communications should also be timely so that no one is left guessing as to what decisions have been made, what events are planned, what herd status and monitoring results are, and what activities and actions are underway. Successful communications should help support decision-making, and help build awareness and understanding of who the ACCWM is, as well as its mandate and those of its member boards. When sharing information with the public, our goal is to be consistent and make materials clearly identifiable and related to *Taking Care of Caribou*.

Communication objectives may change as management actions are implemented, depending on the type of ideas and information being shared. Many objectives are interconnected and some communications will touch on multiple objectives. Our overall objectives are: announcing and sharing information; building awareness; increasing community and partner participation; and education. Below are some examples of the types of information that may be shared for each of these objectives as *Taking Care of Caribou* is being implemented:

Announcing and Sharing Information

- ***Taking Care of Caribou*** Management Plan, Community Engagement Report, Technical Scientific Report
- Herd-specific Action Plans
- Decisions made by wildlife managers
- Meetings or public events
- New programs and information on how to participate
- Changes to policy or regulations
- Newly completed reports or reviews
- Perspectives and knowledge
- Partner, community, or organizational discussions, concerns, or activities with regard to the caribou

Building Awareness

- ACCWM, mandate and members
- Newly implemented programs
- Successful events held
- Recognition of partnerships and teamwork

Increasing Community and Partner Participation

- Motivating harvesters to participate in sampling programs
- Encouraging the public to follow management decisions
- Recruiting people to help plan events
- Recruiting people to participate in meetings or events related to management actions
- Requesting partner feedback or participation on working groups
- Requesting funding support for management actions

Education

- ACCWM, mandate and members
- Management and Action Planning processes
- The colour-coded herd status
- Any voluntary or regulated limits on harvesting, such as changes to regulations
- Rationale for harvest regulations (e.g., why harvesting mostly bulls rather than cows may be preferable)
- What is being researched or monitored and why
- Results of research or monitoring programs
- Impacts of current or proposed land-use activities to caribou and ways to mitigate impacts
- Educational themes, such as promotion of respectful hunting and butchering practices, information about caribou diseases and human health risks, and other themes described in ***Taking Care of Caribou***. (Note: other education-specific activities are included in the Education section of the management actions table in this document).

Responsibilities

An Education and Communication Working Group will help prepare official communications about *Taking Care of Caribou* and the implementation of management actions that come from the ACCWM as a committee to the public, or that come from ACCWM member boards on behalf of the ACCWM to their regional communities. Such official communication is a different type of communication than when community organizations or individuals contact their HTC, RRC, or ACCWM member board, for example.

The ACCWM and the Education and Communication Working Group need to ensure that overall messaging about the ACCWM and its member boards as well as situational messaging are pre-approved. The ACCWM and its Working Group also need to consider their communication objectives, both long-standing and situational, when considering messaging. In addition, the Education and Communication Working Group should also track input given to the ACCWM and ACCWM responses to those inputs. For example, this may include feedback regarding a potential product from a target audience.

The individual boards of the ACCWM will each be responsible for delivering the prepared communications within their regions as scheduled. They will be required to assist the Education and Communication Working Group by giving timely feedback and direction regarding what methods, messages, and audiences will be appropriate for meeting communication objectives in their regions.

While communication will span both formal and less formal methods, overall it will rely on teamwork and cooperation to successfully deliver common messaging about *Taking Care of Caribou* and associated actions.

Target Audiences

For every type of communication method used in implementing management actions, care will need to be taken to determine the specific audience and to target communications appropriately. Several examples of possible target audiences for communication include:

- Youth and schools
- Harvesters
- Proponents and developers
- Regulators
- Air carriers
- Visitors
- Potential funders

A further task of the Working Group will be to consider how to incorporate languages into communication messaging to ensure that it is regionally appropriate. It is expected that the ACCWM and the Education and Communication Working Group will be responsible for developing messaging that can be adapted by member boards to regional situations with local languages incorporated according to individual board protocols. The Working Group and ACCWM can be a forum for sharing best practices in using local languages.

Timing and Frequency

For *Taking Care of Caribou* to be successful, it is important that communications are timely and appropriately paced. There need to be regular annual communications of the work of the ACCWM. There will also need to be communications that are responsive to decisions between annual status meetings, including responses to urgent situations. The Education and Communication Working Group can help respond through assignments from the ACCWM to prepare materials in these different situations. The Education and Communication Working Group can also make recommendations to the ACCWM regarding timing and frequency.

Again, the individual boards of the ACCWM have a high level of responsibility in ensuring that communications and reviews of draft products prepared by the Working Group are done in a timely fashion and are appropriate for their region.

Methods

There are many communication techniques which may be used depending on the particular message and the intended audience. The Education and Communication Working Group, with feedback from regional partners, will need to consider what each target audience encounters, reads, listens to, watches, and engages in, to help place messages where they will be seen and accessed, and to ensure that communications are in a suitable format for the chosen audience. Visual messaging that helps the public easily recognize *Taking Care of Caribou* communications should be used in products prepared by the Education and Communication Working Group. For example, communications may include a recognizable logo with “*Taking Care of Caribou*” as the tagline.

Examples of possible communication methods that were suggested by community members during public engagements for *Taking Care of Caribou* include:

- Posters
- Fliers and brochures
- Radio announcements and programs
- School visits
- Presentations, such as at HTC or RRC meetings
- Newsletters
- Promotional materials (e.g., items such as caps, T-shirts, mugs, bumper stickers, magnets, cloth grocery bags, etc.)
- Internet and social media, such as organization websites, Facebook pages, YouTube feeds, podcasts
- Letters to the Editor
- News stories, columns, and reports
- Press releases and press conferences
- Written or in-person briefings to airlines or developers
- Community events, such as on-the-land gatherings, sight-in-your-rifle events, etc.
- Word of mouth

- Music
- Exhibits and public art
- Books or other reading material, such as education modules
- Television (e.g., cable stations can show PowerPoint ads for a low cost; purchased ad time can also be used to convey messages)
- DVDs, such as hunter training videos
- Theatre plays or skits
- Storytelling

The annual status meeting of the ACCWM and its Working Group is another opportunity for face-to-face communication between representatives of management agencies, community members, the public, and scientists.

Resources

Successful communications will depend on the availability of resources, including staff, funds and other resources, such as technical equipment needed for various media types. Adequate funding will need to be sought out and budgeted for to ensure that full opportunity is provided for dialogue about the status of herds and management actions being considered or underway. Care should be taken to look for opportunities for partnerships and donated resources that might be available for communications needs (e.g., in editing, translating, printing, publishing, and disseminating information).

Evaluation

Each year, the ACCWM will meet to review implementation of the Action Plan(s). Part of this review will include an evaluation of communications made to and from the ACCWM, Plan partners, and the public. It is important to evaluate how well communications were carried out and how well they worked in meeting communication goals and objectives. A template for evaluation can be built from the list of objectives and should also include consideration of the Education and Communication Working Group process and its interactions with and responsiveness to direction from the ACCWM. The communications plan itself will also be reviewed for possible revisions at that time. Good communication would mean that groups effectively participated to share knowledge, and that they worked together to discuss and implement actions and built trust and confidence in management processes. As with the Management Plan, an adaptive management approach will be taken to ensure communications are effective as *Taking Care of Caribou* is implemented.

Appendix D: Background to Some Survey Information Used in the Action Plans

Scientific Knowledge: Background to post-calving survey methods

The post-calving ground survey method is used to obtain a population estimate for the Cape Bathurst herd. The first survey of this kind was done in 1986. Radio collars are deployed on caribou in March throughout the caribou range. These collars are then used to find groups of caribou in July during post-calving. On hot days with little wind when the bugs are harassing the caribou, the caribou will form large groups on the tundra. These groups are photographed from a small airplane and the number of 1+ year old caribou can be counted on the photographs.

There are two different methods to calculate a population estimate and the associated confidence interval using the information collected from the post-calving survey: Lincoln-Peterson and Rivest. Both methods use the number of collars and the number of caribou counted on the photographs in their estimate calculations. The Lincoln-Peterson method adjusts the number of caribou counted on the photographs by a ratio of collars deployed to collars located during the survey. If all collars are found, the population estimate remains the minimum count as it assumes all animals can be located near a collared caribou. The Rivest method takes into account the probability of finding a group based on group size and number of collars; this method will always result in an estimate higher than the minimum count.

Switching population estimates: from the Lincoln-Petersen to the Rivest method

Estimates from both population estimation methods have been included here for comparison purposes; however, ENR and the boards agreed at the 2016 meeting that the Rivest is the preferred estimation method. In the past, the Lincoln-Peterson method had consistently been used to estimate the population size of the Bluenose-West herd. In the future, the Lincoln-Peterson estimate will also be provided. There are several reasons for switching to the Rivest method, including:

- Other jurisdictions are using Rivest estimates to estimate population size
- The Rivest method always provides confidence intervals
- The Lincoln-Peterson method tends to have a bias towards low estimates
- Larger confidence intervals resulting from the Rivest method may be more realistic measures of uncertainty; the Lincoln-Peterson method may not represent actual uncertainty

It is important to note that under ideal survey conditions, where there is adequate grouping of animals and most or all collars are found, the two methods produce very similar estimates.

Traditional and Community Knowledge: 2018 community engagement or survey methods

Traditional knowledge and community knowledge (TKCK) make important contributions to the annual status assessment and decision. In order to compare this type of information from year to year and across different regions, it is important to have as much consistency as possible in how it is documented and compiled.

In 2017 the ACCWM Working Group developed a slide show and list of questions that could be used as a template for conducting community engagement at public meetings and documenting discussions about caribou. Some of the regions adopted this format for their engagement; others used different tools, such as surveys and targeted exercises, at smaller meetings or in expert focus groups. Details on how engagement was achieved in each region can be obtained from the individual member boards.

We hope to find ways to support methods and approaches that can be adapted to best suit each region, but to also ensure that we are using rigorous methods that produce reliable, accurate and comparable information and are appropriate for including/bridging Indigenous knowledge and science. In 2018 we plan to review current best practices in this field of research.

Appendix E: Determining Allocations and Total Allowable Harvests

In areas of Nunavut and the NWT that have land-claims agreements, when strict conservation measures are needed, a Total Allowable Harvest (TAH) is established. The TAH is based on what is considered to be an acceptable percentage of the herd to harvest, considering where it is in its population cycle, whether cows or bulls are harvested, and associated risks to the herd. This means that as a herd's status changes, the TAH will change.

Harvest allocations are an agreed-upon set percentage of how the total harvest from a herd is shared between groups. Agreements about allocations are based on harvest levels and according to the requirements of regional legislation and of land-claims agreements. Priorities for harvest allocations are laid out in *Taking Care of Caribou* (p. 48).

The ACCWM recognizes that it is important to work collaboratively when discussing a TAH for shared herds. With the exception of the TNNPMB, each ACCWM member may, if circumstances require, set a TAH for their region; allocation is then done within the region according to what is outlined in individual land claims. Within this setting, 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.