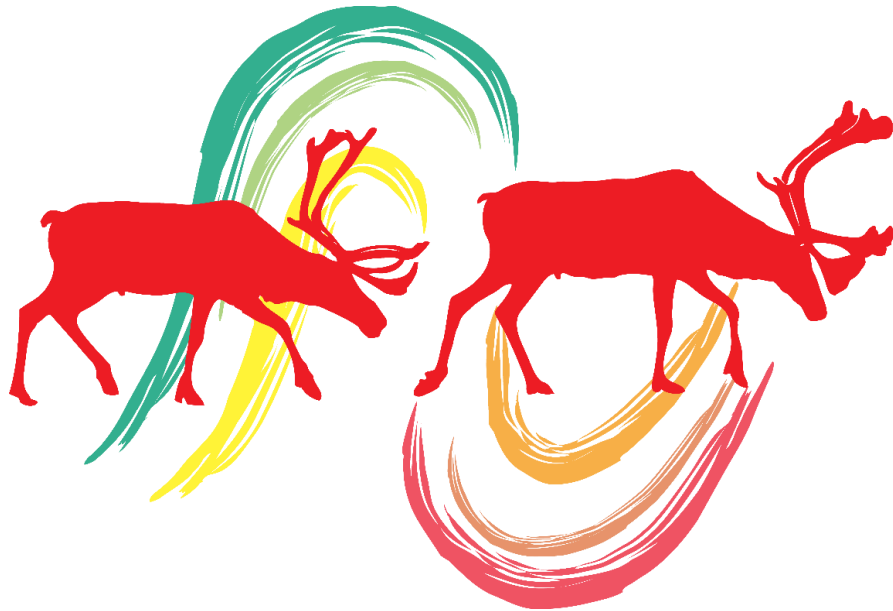


**ACCWM Annual Status Meeting Summary
November 23–25, 2021**

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



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

June 2022

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About the ACCWM

The Advisory Committee for Cooperation on Wildlife Management was established to exchange information, help develop cooperation and consensus, and make recommendations regarding wildlife and wildlife habitat issues that cross land-claim and treaty boundaries. The committee consists of Chairpersons (or alternate appointees) of the Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, ʔehdzo Got'jne Gots'è 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 2021 Management Setting.....	11
Status Decision 2021	12
Presentations Given at the 2021 Annual Status Meeting.....	13
Presentation on Scientific Information	14
Gwich’in Community Knowledge Presentation.....	21
Inuvialuit Community Knowledge Presentation.....	21
Table 6: Criteria used to assess Cape Bathurst herd status in 2021	22
Bluenose-West Status Assessment.....	42
Understanding Current Bluenose-West Herd Status.....	43
The 2021 Management Setting.....	43
Status Decision 2021	44
Presentations Given at the 2021 Status Meeting	45
Inuvialuit Community Knowledge Presentation.....	47
Sahtú Community Knowledge Presentation	49
Tuktut Nogait National Park Management Board Presentation	50
Presentation on Scientific Information	51
Table 12: Criteria used to assess Bluenose-West herd status in 2021	57
Bluenose-East Caribou	70
Understanding Current Bluenose-East Herd Status	71
The 2021 Management Setting.....	71
Status Decision 2021	72

Presentations Given at the 2021 Annual Status Meeting.....	74
Tłıchq Community Knowledge Presentation.....	75
Kugluktuk Community Knowledge Presentation.....	76
Sahtú Community Knowledge Presentation	76
Presentation on Scientific Information	78
Table 15: Criteria used to assess Bluenose-East herd status in 2021.....	80
Appendix A: List of ACCWM Working Group Members	85
Appendix B: Terms of Reference for the ACCWM Annual Status Meeting	86
Appendix C: Communication Plan	89
Appendix D: Background to Some Survey Information Used in the Action Plans.....	94
Scientific Knowledge: Background to post-calving survey methods.....	94
Traditional and Community Knowledge: 2018 community engagement or survey methods	95
Appendix E: Determining Allocations and Total Allowable Harvests	95

Tables

Table 1: CB Rivest population estimates (2000–2021).....	14
Table 2: Results from hunter harvest body condition sampling for Tuktoyaktuk Peninsula and Cape Bathurst caribou combined.	17
Table 3: Results from hunter-collected back fat and health sampling for the Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined.....	18
Table 4: Results from marrow fat sampling for the Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined.	18
Table 5: Number of wolf carcasses/samples submitted to ENR by Tuktoyaktuk and Inuvik hunters, 2007–2018.....	20
Table 6: Criteria used to assess Cape Bathurst herd status in 2021.....	22
Table 7: BNW Rivest population estimates (2000–2021).....	51
Table 8: Results from hunter-harvest body condition sampling for Bluenose-West caribou.....	53
Table 9: Results from hunter-collected back fat and health sampling for the Bluenose-West herd combined.	54
Table 10: Results from marrow fat health sampling for the Bluenose-West herd combined.	54
Table 11: Number of wolf carcasses/samples submitted to ENR by Paulatuk hunters, 2007–2019.	55
Table 12: Criteria used to assess Bluenose-West herd status in 2021	57
Table 13: BNE population estimates (2000–2018).	78
Table 15: Criteria used to assess Bluenose-East herd status in 2021.....	80

Acronyms Used in This Plan

ACCWM (WG)	Advisory Committee for Cooperation on Wildlife Management (Working Group)
CI	Confidence Interval
DGG	Déljñę Got'jñę Government
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
KAA	Kugluktuk Angoniatit Association
NWMB	Nunavut Wildlife Management Board
NWT	Northwest Territories
PCA	Parks Canada Agency
RRC	Renewable Resource Council
SE	Standard Error
SRRB	Sahtú Renewable Resources Board
TAH	Total Allowable Harvest
TG	Tłjchq Government
TNNPMB	Tuktut Nogait National Park Management Board
WEMP	Wildlife Effects Monitoring Plan
WMAC (NWT)	Wildlife Management Advisory Council (Northwest Territories)
WRRB	Wek'èezhii Renewable Resources Board
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 past 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), IGC, GTC, SSI, TG, DCFN, PCA (Western Arctic Field Unit), NTI and KHTO (KAA) 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

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.

categories of 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.

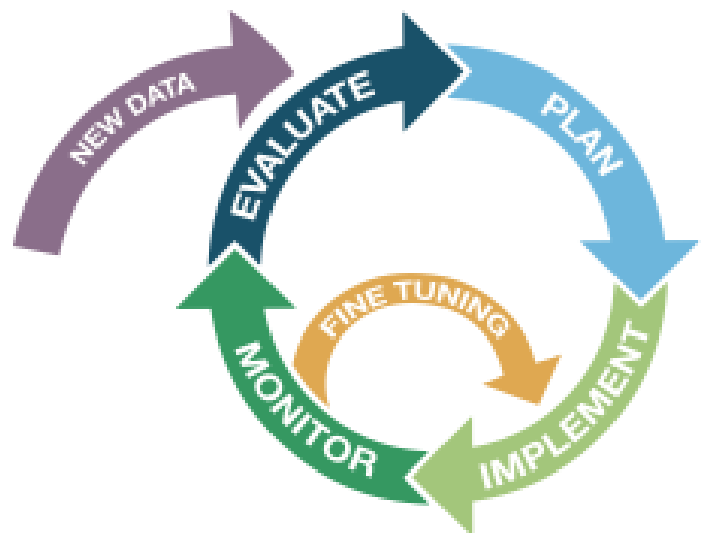
The ultimate goal of the ACCWM *Taking Care of Caribou Process* (the Management Plan, Annual Status Meeting Activities, Meeting Summary and the Action Plans) is to ensure that there are caribou for today and for future generations.

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).

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

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

Sharing Perspectives: Naming Caribou

Each Indigenous region in NWT and Nunavut has a traditional name for barren-ground caribou. Some within the Bluenose-East range include: tuktuvaluk, tuktuṭ, ʔedə, ʔekwé, and ʔekwò in Inuvialuktun, Inuinnaqtun, K'áhsho Got'İne/Dela Got'İne, Délİne Got'İne, and Tłıchq 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, Délİne has suggested ʔehdaıla Goʔekwé as an appropriate Délİne Got'İne term for barren-ground caribou within the Bluenose-East range. Similarly, the Tłıchq term Sahtı ʔekwò more clearly describes caribou within the area of Sahtı (Great Bear Lake).

While it is acknowledged and respected that the use of correct Indigenous names can help to convey traditional understandings of caribou, as 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 toward 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, Tłı̄chǫ 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 (GWNT-ENR), 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.

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:

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



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.

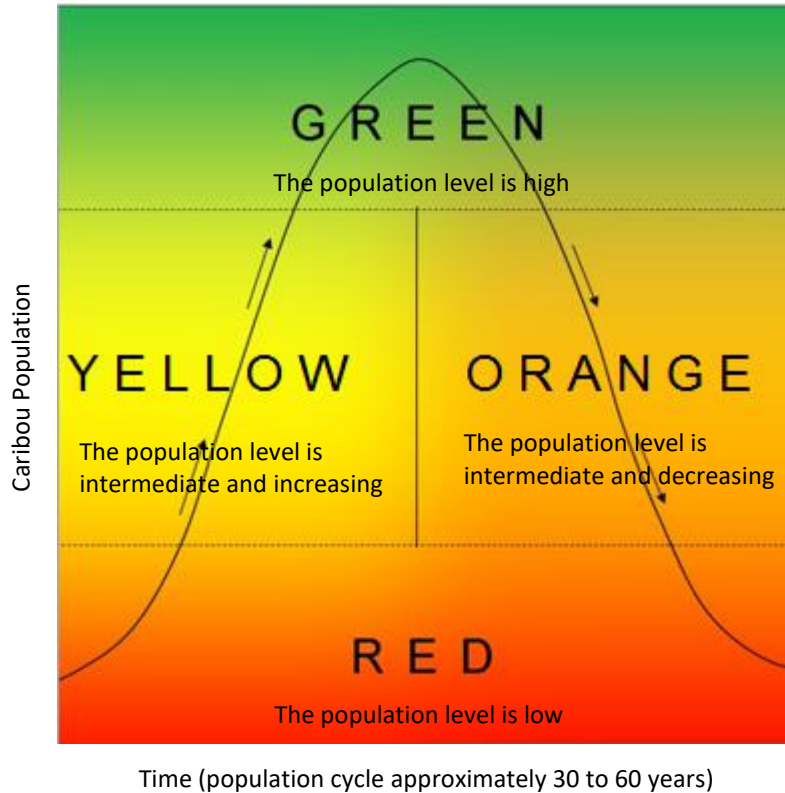


Figure 2: Phases of the population cycle with the colour-coded "traffic light" approach used in the Management Plan and associated Action Plans.

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 RRCs, 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

– *YELLOW STATUS* –



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

Understanding Current Cape Bathurst Herd Status

The ACCWM met on November 17th, 2021 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, 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 2021 Management Setting

At the start of the 2021 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 past year.

Within the range of the Cape Bathurst caribou, people shared positive comments from community members with respect to weather and conditions for the caribou. The summer of 2021 was a wetter, cooler season, limiting insect harassment. 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 undertaken yet. Depending on the listings, work on recovery planning and identification of critical habitat may need to happen.
- **Caribou Recovery Strategy:** The NWT Barren-ground Caribou recovery strategy recommends objectives for the conservation and recovery of caribou. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences on the species and its habitat.²
- **Completion of the ITH:** The highway opened in November 2017 and may be leading to increased access to Cape Bathurst caribou on their winter range and problems with dust on vegetation. ENR is using existing collars and monitoring data 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.
- **COVID-19:** The global pandemic has had impacts to air travel and has caused changes to how much time harvesters have spent on the land. The pandemic has also impacted the ability of member boards to conduct in-person consultation and interviews, as well as impacted ENR's ability to conduct aerial surveys.

² https://www.nwtspeciesatrisk.ca/sites/enr-species-at-risk/files/barren-ground_caribou_recovery_strategy_final_8april2020.pdf

Status Decision 2021

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 3 along with the approximate thresholds for the Cape Bathurst (CB) herd.

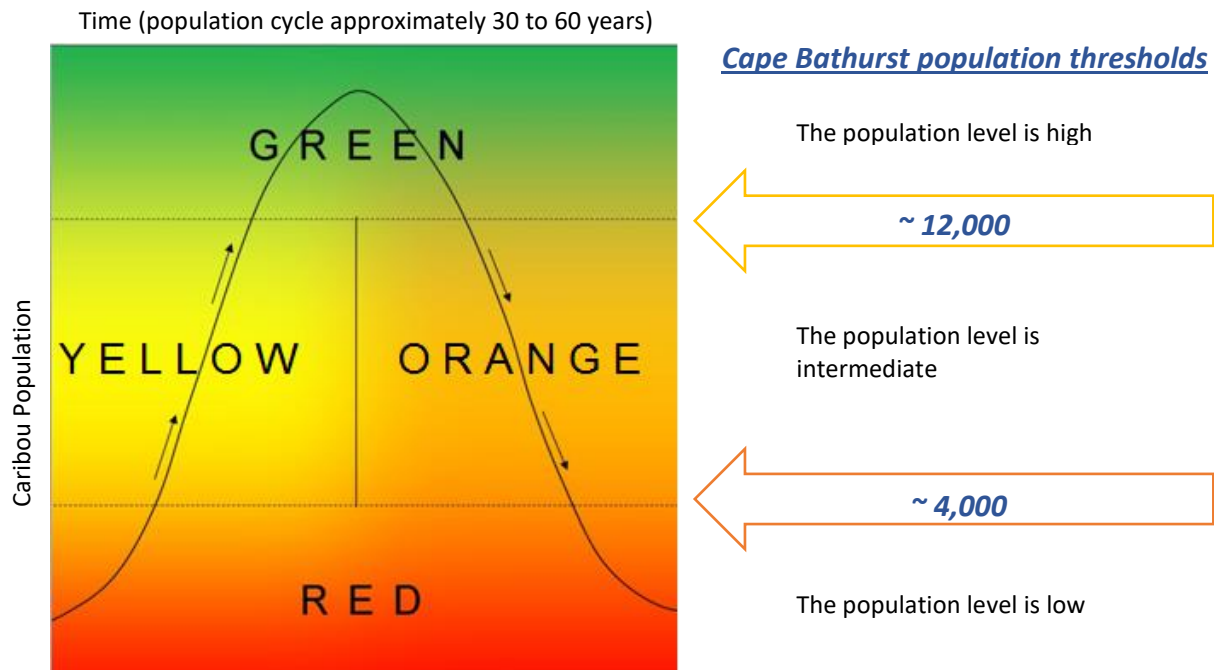


Figure 3: Phases of the population cycle with the colour-coded "traffic light" approach used in the Management Plan and associated Action Plans with defined Cape Bathurst population thresholds.

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 2021 decision is summarized in Table 6 below.

Based on the information provided, the ACCWM determined the Cape Bathurst herd status colour zone to be **Yellow (intermediate and increasing)** in November 2021. The ACCWM noted that the population continues to be slowly recovering based on the community observations presented. This was the second year in a row where community knowledge indicated that the status of the herd was improving. This year there was a population survey that also indicated that the herd's numbers are increasing. Based on the available information, the ACCWM felt that there was sufficient evidence for status of the herd to be maintained at **Yellow (intermediate and increasing)**.



In 2022/23

the Cape Bathurst caribou population status is

Yellow: intermediate and increasing

Presentations Given at the 2021 Annual Status Meeting

Both scientific and community knowledge helped to inform the 2021 status decision; further details on some of the relevant survey methods are included in **Appendix D**. ENR provided the most recent 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 (ISR), NWT – Information provided for this region was summarized only from the public meeting held in Tuktoyaktuk and Inuvik during a community tour with representatives from WMAC (NWT)

Gwich'in Settlement Area, NWT – The Gwich'in Renewable Resources Board conducted interviews with harvesters. Few Gwich'in participants harvest from this herd, so the Gwich'in Renewable Resources Board's (GRRB) 2021 community-based information is sourced from interviews with only four hunters (three from Inuvik and one from Tsiigehtchic).

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.

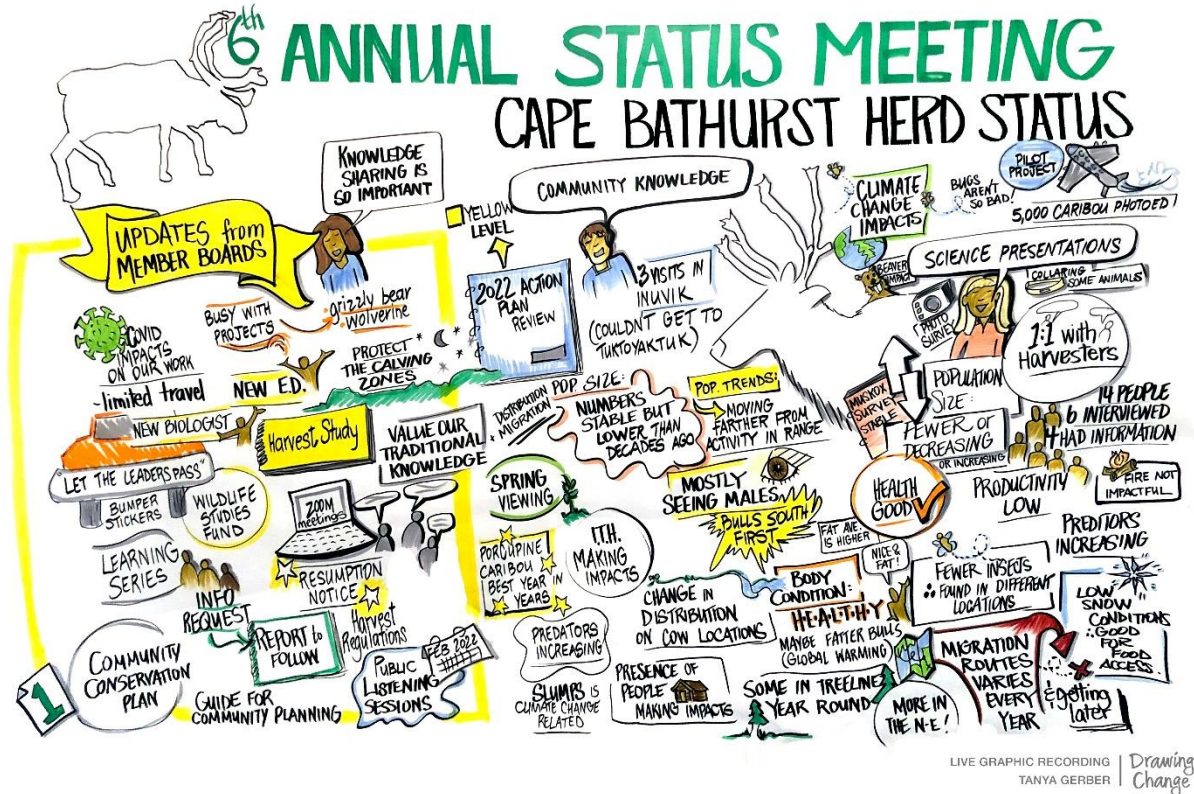


Figure 4: Graphic recording of the Cape Bathurst Knowledge presentations. Credit: Tanya Gerber

Presentation on Scientific Information

Tracy Davison (ENR Inuvik)

ENR’s most recent post-calving ground survey was conducted in 2021. 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 method. 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 estimate for the previous survey, done in 2018, was 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 one influences the statistics. This year, there was a lot higher rate of aggregation happening. One group had over 3000 caribou.

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

Adult Population Estimate: 4,912 ± 562 (95% CI)

Table 1: CB Rivest population estimates (2000–2021).

Year	Rivest Estimate
2021	4,912 ± 562
2018	4,521 ± 875
2015	2,524 ± 284
2012	2,447 ± 350
2009	2,925 ± 1,252
2006	2,039 ± 319
2005	3,566 ± 1,373
2000	13,612 ± 5,245

ENR tested an alternate survey method that came about through discussions with community members. A fall transect survey does not utilize data from collars like the post-calving survey does. ENR’s pilot project was based on the methods used to count muskoxen and Peary caribou. One of the issues with this method is that there is mixing with Bluenose West Caribou at this time. Additionally, the Bluenose West Caribou in this survey area were moving at the time of the survey and this may impact the survey results.

The results of the fall transect survey were $3,324 \pm 930$ (95% CI).

This survey method does not result in as reliable of an estimate as the post-calving survey. It was noted that at the time of the survey, while the Cape Bathurst caribou are relatively stationary and less likely to be double counted, they are also likely to blend into the landscape. As such, ENR does not advise using this survey method for estimating the population.

Population trend and rate of change

The 2021 Rivist population estimate of $4,912 \pm 562$ caribou (95% CI) is higher than the previous 2018 estimate. A trend analysis of the 2005-2018 counts shows a 6% increase in population per year. The herd has been relatively stable between 2005 and 2015 at low numbers.

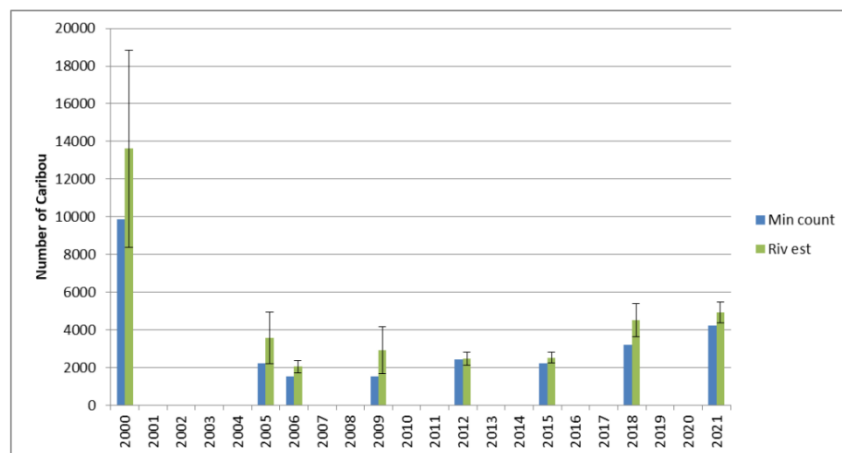


Figure 5: Cape Bathurst herd Rivist population estimates from post-calving surveys since 2000. Minimum counts are included for comparison purposes.

Rivist population estimates (with 95% confidence intervals) as well as minimum counts for the period from 2000 to 2021 are shown in Table 1 and Figure 5.

Productivity and recruitment

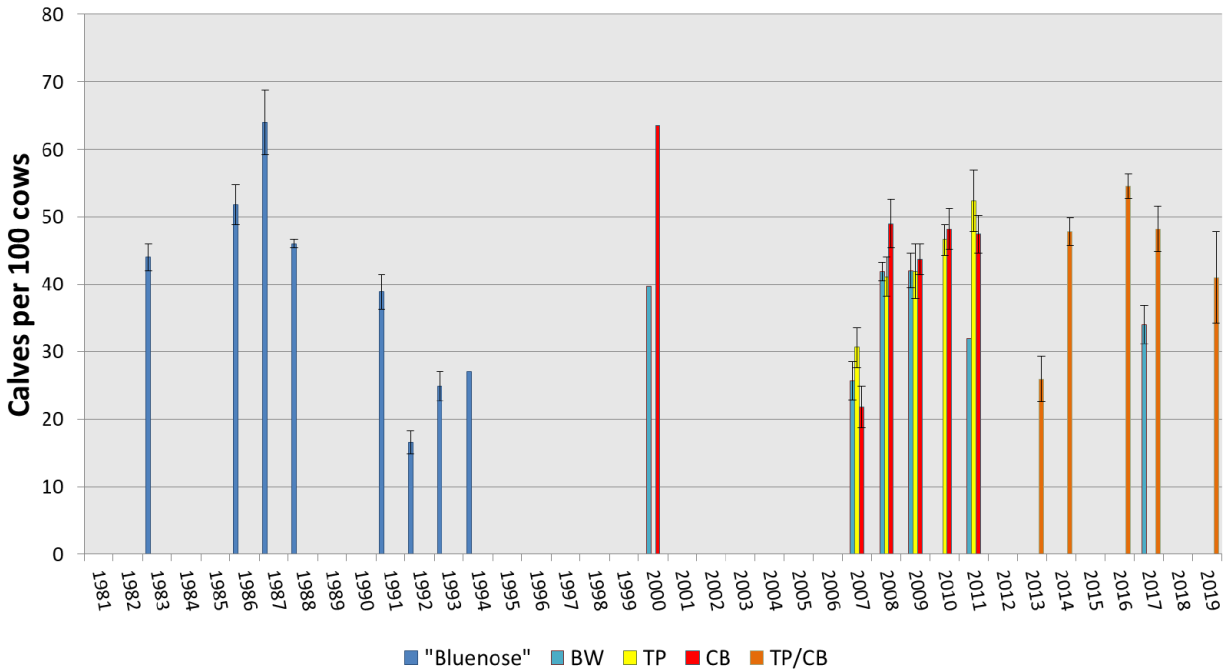
During collaring, biologists collect blood samples. They were able to collect samples from 24 caribou and found that 96% were considered pregnant based on the level of progesterone found in the blood. This is considered a good pregnancy rate for this herd.

A recruitment survey was completed in 2019. This data was presented at the 2019 ACCWM meeting. The 2020 survey was cancelled due to COVID-19.

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 good.

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 41 ± 6.7 (95% CI) calves to 100 cows was found. Recruitment estimates (number of calves per 100 cows) over time are shown in Figure 6



. 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 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.

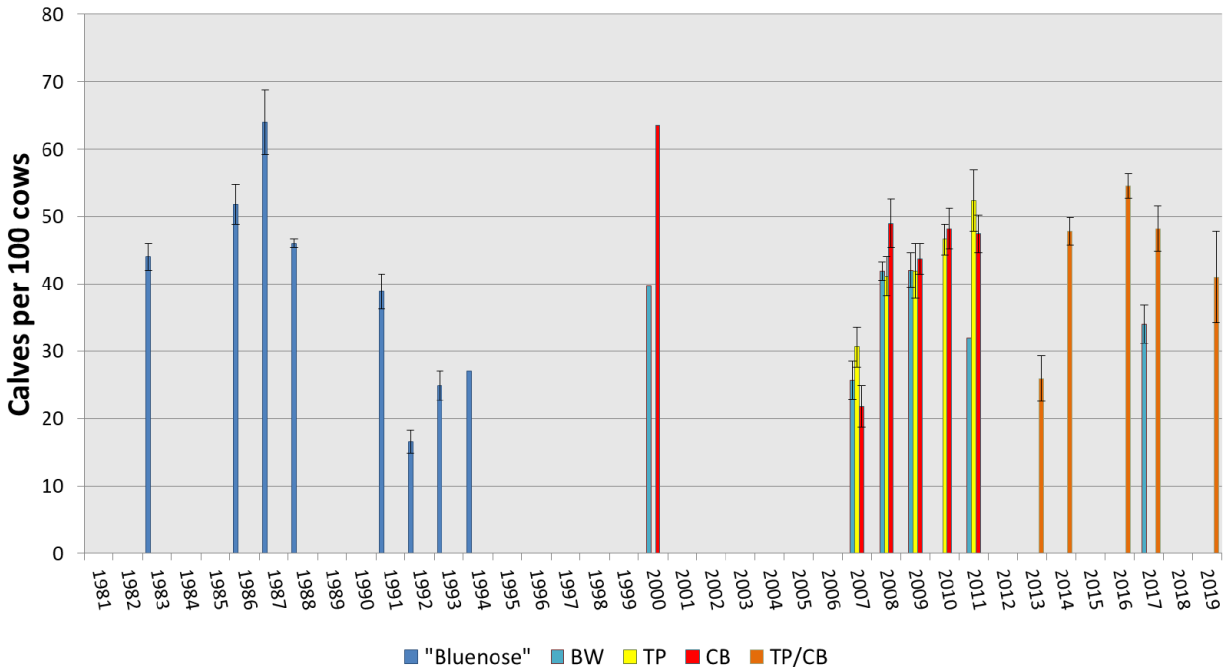


Figure 6: Recruitment estimates (calves per 100 cows) for the Tuktoyaktuk Peninsula (TP), Cape Bathurst (CB), and “Bluenose” barren-ground caribou herds, 1983–2019.

Adult composition

No new data on adult composition was provided. A survey was attempted in the fall of 2021 but was cancelled due to weather and the lack of available helicopters. 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. The 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
2020/21*	3.2 (55)	2.9 (19)
2019/20*	2.7 (83)	2.4 (44)
2018/19*	3.1 (32)	2.9 (34)
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)

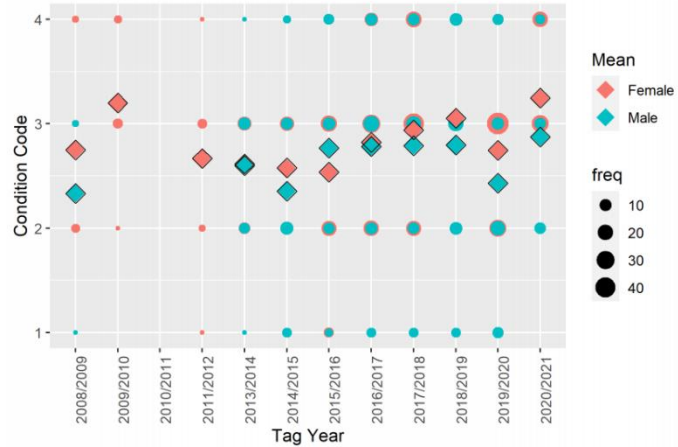


Figure 7: Average condition codes for the Tuk Peninsula/Cape Bathurst herds, assessed by hunters on a scale of 1–4 with number of samples noted at the top of the bar.

* 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 55 cows and 19 bulls; back fat information was reported for 55 cows and 19 bulls in the 2020/21 season. The back-fat measurements indicate that cows were in good condition and the males were lower when sampled. The average back fat in 2020-2021 was better than in the previous couple of years.

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
2020/21	2.13 (55)	1.90(19)
2019/20	1.42(68)	0.95(56)
2018/19*	1.28 (32)	1.24 (34)
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)

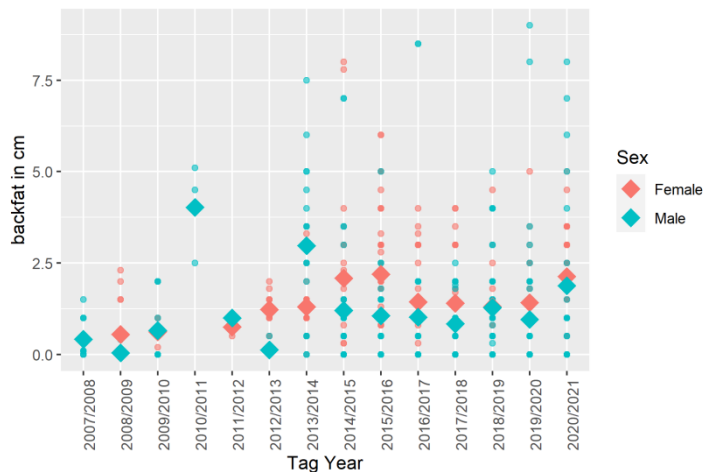


Figure 8: Reported back fat measurement (in centimeters) and average (diamond). Includes: I/BC/08 harvests plus from 14/15 to present harvest by Inuvik and Tuktoyaktuk harvesters

2008/09 0.8 (11) 0.00 (7)

* 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.

Table 4: Results from marrow fat sampling for the Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined.

Season	Marrow Fat % (Number of samples)	
	Female	Male
2020/21	90.2(55)	89.9 (19)
2019/20	90 (68)	82 (56)
2018/19*	88.8 (32)	89.7 (34)
2017/18*	86.7 (77)	84.7 (37)
2016/17*	85.8 (73)	82.3 (50)
2015/16*	78.4 (24)	84.5 (16)
2014/15*	89.3(27)	87.4(30)
2013/14	90.0(21)	90.7(9)
2012/13	92.1 (16)	88.8(3)
2011/12	92.88(3)	93.1(1)
2010/11	0	92.0 (4)
2009/10	91.1 (11)	88.2(13)
2008/09	87.8(17)	89.0(10)

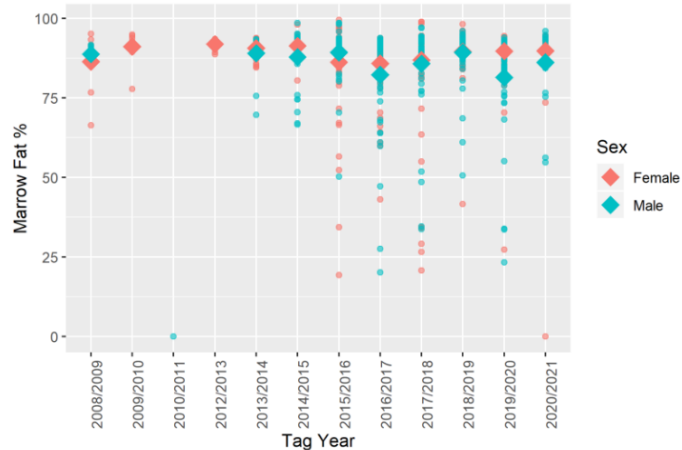


Figure 9: Marrow fat percent and average (diamond). Includes: I/BC/08 harvests plus from 14/15 to present harvest by Inuvik and Tuktoyaktuk harvesters.

Results for average body condition ratings for Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined are presented in Table 2 and Figure 7.

Back fat measurements for Tuktoyaktuk Peninsula and Cape Bathurst caribou herds combined are presented in Table 3 and Figure 8. Marrow fat measurements are shown in Table 4 and Figure 9. Marrow fat observations for 2020/21 showed that the males were lower than females.

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 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, which 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 the 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 2020/21 showed 141 tags possibly used in Tuktoyaktuk Peninsula/ Cape Bathurst area. Sex was reported for 74 of the caribou harvested (55 females and 19 males)

Predator populations

ENR collects samples from wolves harvested by hunters in the Inuvik Region (Table 5); 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 at that time, 68% of the stomach contents were 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).

Other scientific information

- 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.
- Cape Bathurst caribou have tended to winter together with the Tuktoyaktuk Peninsula herd in recent years. In 2020, 14 Cape Bathurst collared cows were still active from the 2018 deployment and 12 returned to Cape Bathurst calving ground while two went to Tuktoyaktuk Peninsula calving ground, and one Tuktoyaktuk Peninsula collared cows moved to Cape Bathurst calving ground.
- 97% of collared Cape Bathurst cows have returned to the same calving grounds year after year between 2010 and 2021.
- The largest habitat disturbance is the new highway. Now that it has been open for a couple of years, ENR is using the collars and monitoring data to assess any impacts. This will be presented when complete.
- The Cumulative Effects project is ongoing; initial steps to map all current disturbance in the range show that there is a low human footprint on the range (less than 0.4% of the range)
- 2021 was a very quiet year for fire disturbance

Table 5: Number of wolf carcasses/samples submitted to ENR by Tuktoyaktuk and Inuvik hunters, 2007–2018.

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
2018/2019	29	0
2019/2020	14	9
2020/2021	15	6

Gwich'in Community Knowledge Presentation

Steve Anderson (GRRB)

This presentation focused mainly on the data presented in the monitoring criteria table (see Table 6 below). Community data was limited as only three harvesters from Inuvik and one in Tsiigehtchic provided data to the GRRB. 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.

Overall, harvesters are indicating that the population is stable or slightly decreasing and that there was a mix of both positive and negative indicators. For example, average body condition was good, but productivity is said to be low.

It was noted that while only seven of 33 tags were used, harvesters feel that it is good to have these tags a backup for years when the Porcupine herd is not accessible.

Inuvialuit Community Knowledge Presentation

Jim Elias & Rosemin Nathoo (WMAC-NWT)

Rosemin's portion of this presentation focused mainly on the data presented in the monitoring criteria table (see Table 6 below), while Jim provided a firsthand accounts and details gathered in conversation with other harvesters. Rosemin noted that they primarily focused on harvesters in Inuvik and Tuktoyaktuk. WMAC-NWT did three rounds of public meetings in Inuvik and then followed up with more harvesters who were more active. There was a high level of detail that was provided in the responses from the harvesters and the Imaryuk guardians. The data from each community differs as they see the caribou at different times. The Inuvik harvesters tend to see more males when they are in the Anderson River and Husky Lakes areas. As the harvesters from Tuktoyaktuk are closer to the calving grounds, they tend to see more cows.

According to the harvesters in Inuvik, the population numbers are stable but at a low. The harvesters commented that it is important to take the distribution of the herd into account when discussing population as this impacts the number and quality of observations. For example, when they were kids, they could get caribou near town but now they must go ten times as far.

Rosemin noted that in both workshops there were concerns about the cabins being built at Husky Lakes and the increase in boat traffic. When the caribou come down in late summer and early fall they wait to cross the ice at Husky Lakes, otherwise they have to go all the way around the lake. There were also concerns that at the crossing points there are too many hunters. They are not overhunting but this does lead to more stress when the caribou are migrating.

Jim agreed with the point about the increase in boats and cabins on the lake. He also noted that every year there is less ice on the lakes. People are having to wait until mid-November to cross on skidoo, when they used to be able to do it in October.

Jim talked about growing up on the land in the 1970s and how things have changed. For example, in October, the caribou would come from east. They stayed all winter before heading back. Now they come the other way and then all head back east. In the 70s, “the hills were moving,” but now all the herds are small.

Rosemin commented that the information from the workshops agreed with Jim’s observations; the groups are smaller and are travelling differently with some caribou staying year-round. Basically, caribou are staying more to the north and east. The cabins and the highway might be a barrier to them.

According to Jim, they are seeing the effects of climate change all around the lakes. There has been an increase rain and permafrost melt, leading to slumping all over the region. The slumping is correlated with an increase in the number of willows sprouting up in new areas. These willows accumulate the snow, and that snow stays longer into the spring.

Rosemin note that the population trends were looking good based on the discussions in the Tuktoyaktuk workshop. Jim agreed, noting that the timing of the migration was different but that the caribou are in good shape with both the young bulls and cows all having a lot of fat.

Table 6: Criteria used to assess Cape Bathurst herd status in 2021³

Criteria	Community-Based Information ⁴	Scientific Information ⁵	Comments
Population size	Inuvik (WMAC-NWT): <ul style="list-style-type: none"> Highly related to distribution, range and migration routes. Less caribou in Inuvik’s usual hunting areas (see Range and Distribution notes) than there were before the ITH was built. 	Estimated number of adult caribou at least 1.5 years old in 2021 Rivist: 4,912 ± 562 (95%CI)	Estimated based on July post-calving ground survey

³ This table is populated with information presented to the ACCWM to assess herd status in 2020 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

⁴ Bluenose-West caribou usually migrate through two settlement areas/regions and are typically harvested by four communities: Aklavik, Inuvik, Tsiigehtchic and Tuktoyaktuk. Community-based information was documented in the following ways:

- 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.
- Few Gwich’in participants harvest from this herd, so the Gwich’in Renewable Resources Board’s (GRRB) 2021 community-based information is sourced from interviews with only four hunters (three from Inuvik and one from Tsiigehtchic).

⁵ All scientific information and comments were provided by Environment and Natural Resources (ENR) (GNWT) unless otherwise noted.

	<ul style="list-style-type: none"> • From what knowledge holders observed, numbers are stable but still low -- much lower than they were decades ago. • Need to travel 10 times the distance (more due east) to get caribou than in their childhoods. • Observation: Last community hunt they filled was about four years ago in early December. Saw a herd of about 3000, cows, calves and bulls mixed up. The group separated into two, with cows and bulls separating. Haven't seen that many together since. It was around Old Man Lake, Jonas Lake, Urquhart. • Observation: About two years ago, from the south end of 500 Lake to Abutuk was trampled, a big herd had been there a week before. By the time the harvester got there, the herd was back east, but the whole area was trampled. Ran into a small bunch of about 50, but other hunters said about a week before there were maybe 5000 caribou around 500 Lake. That's when the ice was not quite formed, people were still hesitant to cross. It was fall time, early November, when it was still kind of dangerous to travel. <p>GRRB:</p>		
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	<ul style="list-style-type: none"> • Few or same • “Same for about 10 years.” • “Usually, I see 50 caribou between Husky Lakes and Sitidgi Lake. This year I only saw five.” 		
Population trend and rate of change	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • About the same numbers as the past few years, not seeing less; hard to give comment on overall herd population from area of observation. • At a camp on the southern basin of Husky Lakes and crossing up to Indian Lake when it freezes – see more caribou in springtime, seem to be moving south toward Sitidgi creek. • Seems stable otherwise – always get scattered herds in his area. Pretty consistent numbers. • Decades ago, there were thousands of caribou accessible very close to Inuvik – year-round, could get caribou right outside of town behind the water tower or toward the airport. This stopped when seismic activity began around Inuvik. • Observation: many years ago, there was seismic activity around Parsons Lake – this was the first time this knowledge holder noticed the caribou stopped coming. There were big camps, about 500 people, and seismic 	Between 2005 and 2021 the herd shows an increasing trend of 6% per year (95%CI of 2% to 9%)	Trend analysis is based on Rivest estimates 2021 4,912 ± 562 2018 4,521 ± 875 2015 2,524 + 284 2012 2,447 + 350 2009 2,925 + 1,252 2006 2,039 + 319 2005 3,566 + 1,373

	<p>machines running everywhere. The following year, not even one caribou showed up. Normally that was the rutting/wintering area. They went back across Husky Lakes and never came back – only in small numbers, not like they used to see. That’s when they started noticing the caribou numbers decline. Used to be able to hunt caribou year-round around Sandy Hills.</p> <ul style="list-style-type: none"> • Now there are many fewer caribou than there used to be – you have to go ten times farther to harvest. They’re staying further east, away from the road, on the other side of Husky Lakes, toward Anderson River. Harvesters still see and harvest them; they just have to go farther due east. • They see males a lot in their part of the range, in the treeline. • One knowledge holder flew on August 30, 2021, by chopper all the way to Baillie Island, by North Star Harbour, and only saw one caribou on the way out, one on the way back. Saw lots of muskox though. • About 5-10 years ago, one harvester went to Baillie Island three years in a row from late April to early May, trying to hunt polar bear, grizzly bear and 		
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	<p>geese. Used to go to North Star Harbour and Middle Lake – would see lots of cows and calves – all scattered here and there. There’s so many muskox around there now. Was very surprised to fly over this August and not see caribou.</p> <ul style="list-style-type: none"> • Others flew often (for DFO work) in that area and saw many caribou. • One harvester was out all fall and got one caribou – there were a few more around, but females so he didn’t harvest them. About the same number accessible to him as last winter; probably a little more this year than last year – hardly saw any last year. <p>GRRB: About the same as past years.</p>		
<p>Productivity and recruitment</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • On the Inuvik end, they see caribou in winter after bulls and cows have separated, and before they’ve dropped. Hard to comment on proportion of cows because of time of year observing them. • Inuvik harvesters typically hunt in the winter when cows have not yet given birth, so it is difficult to comment 	<p>Pregnancy rate of captured cows 2021: 23/24 (96%).</p> <p>Last recruitment survey was 2019 so no current information available.</p>	<p>Pregnancy based on serum progesterone.</p> <p>2019 recruitment survey included both CB and Tuktoyaktuk Peninsula herds Estimated number of calves per 100 cows in 2019: 41 ± 6.7 (95% CI).</p>

	<p>on productivity or trends in productivity.</p> <p>GRRB: Few</p>		
Adult composition	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • Always get cows coming by first, then bulls behind them. Don't know if they're pregnant because they haven't dropped yet. • One hunter saw the odd cow here and there with young ones, but mostly in the area where he goes they are bulls. Out of the treeline toward Husky Lakes is when you start running into cows. After mating season, they separate, so we see mostly bulls in the Miner River area. • Probably about 50/50 between cows and bulls • Cows and bulls will separate, migrate and overwinter in different areas, at different times. Cows and calves last seen hanging around Urquhart; a big mixed herd was observed four years ago with cows, calves, and bulls. Bulls are observed around Husky Lakes and the treeline. Cows don't follow bulls into the treeline like they used to; before the ITH, the 	<p>There is only one bull to cow ratio for CB (2015) so trend is unknown but the 2015 results is considered normal.</p> <p>Estimated number of bulls per 100 cows in 2015: 43 ± 4.6 (SE)</p>	

	<p>bulls would come down first and the cows behind them. Now the cows seem to stay on the barrens.</p> <ul style="list-style-type: none"> • Around Caribou Lakes, only see bulls, almost never cows • North Caribou Lake and Woodbridge Lake area used to be cows and bulls – now only see bulls – cows don’t follow into the trees anymore • Cows stay over at Uruqhart Lake and 500 Lake, they hang out and winter there, in Miner River country. The treeline starts behind Dennis Creek and Old Man Lake – that’s as far as cows and calves go in the winter now. • From this time of year through to Jan/Feb, see lots of migration through Miner River towards North Caribou Lake all the way to Kuugalik – all the bulls go into the trees. <p>GRRB:</p> <p>Nothing to report.</p>		
<p>Body condition and health</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • A hunter got three last winter, looked nice and fat and healthy, no disease. • Healthy: probably due to 	<p>The condition of both bulls and cows was on average ‘good’ in the 2020/2021 harvest season.</p>	<p>Scientific information based on harvester reported samples harvested in range of the Tuk Peninsula</p>

	<p>global warming, good access to vegetation, seem to be in better shape.</p> <ul style="list-style-type: none"> • Bulls are putting fat on earlier too, in February they're already getting fat again. By April/May, seeing two inches of fat already on older bulls. • One harvester got one bull this fall at Husky Lakes with close to four inches of fat. • Haven't seen Brucellosis or disease in them for a while now. Used to see Besnoitia quite a bit in the bulls, don't see it as much anymore – it used to be really bad under the fur • Suggest handing out the ENR parasite handbook again. People sometimes throw meat away because they don't know what they're seeing – most meat is fine if you cook it, even if there are parasites. <p>GRRB:</p> <p>Healthy, no disease, decent amount of fat.</p>	<p>Average back fat in 2020/2021 season was 2.06 cm (range 0 to 4.5 cm) for cows and 1.11cm (range 0 to 6 cm) for bulls.</p> <p>The average Condition code was 3.2 for cows and 2.6 for bulls (range 2 to 4). The average percent marrow fat for cows was 91% (range 74 to 95%) for cows and 84% (Range 55 to 94%) for bulls</p>	<p>and CB herds. In 2020/2021 season, condition information was reported for 46 cows and 18 bulls, back fat information was collected for 54 cows and 19 bulls, and Marrow fat information collected for 47 cows and 19 bulls.</p>
<p>Harvest levels</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • So much focus on Porcupine herd this year – about 40 tags left over from last year because pressure was focused on 	<p>I/BC/07 and G/BC/02 are closed zone for CB.</p> <p>A total of 141 I/BC/06 tags were possibly used in the wintering</p>	

	<p>Porcupine – alleviated pressure on other herds.</p> <ul style="list-style-type: none"> • Suggest asking for observations with harvest study rather than just harvest counts • Suggest putting ACCWM questions in tag kits, get HTC's to hold on to them until time to send them in. • Better to do hunts – community hunts– in the fall because that's when you'll get bulls. Hunting in winter, more likely to get cows – dry cows can be pregnant. More people go out this time of year because it's easier to travel with skidoo. More education is needed. Would be easier to do a fall hunt because of access with the highway. • HTC used SCARF funding to educate young hunters last year; don't chase them, proper techniques to skin and process caribou. • Less pressure from Inuvik; Inuvik hasn't filled that quota in years, they've been harvesting from the Porcupine caribou instead, which are accessible and abundant. • Many went to Aklavik instead last winter to harvest caribou. IHTC hasn't used the portion 	<p>area of the Cape Bathurst herd in 2020/2021 – (74 of those have reported sex: 19 males, 55 females)</p>	
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	<p>of tags allocated for the community hunt. They haven't actually filled the quota for years.</p> <ul style="list-style-type: none"> • Concern was expressed about harvest pressure further north at crossing points over Husky Lakes – at the fingers – too much traffic there, not letting them cross – prevents access to Inuvik hunters, because the caribou are stopped and turned around at their main migration points because there are too many people and boats. Suggestion to let the leaders pass. • Most harvests are recorded in Inuvik – 98%. Just a very small portion not reporting <p>Tuktoyaktuk (WMAc-NWT):</p> <ul style="list-style-type: none"> • Only reporting is with tags because harvest study paused. • Much more being harvested than being reported because of poaching & selling. • Less harvested on Tuk Pen this fall • Good sample returns in tag zone • Need enforcement for tag attachment <p>GRRB:</p> <ul style="list-style-type: none"> • Low. 		
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	<p>On the topic of harvest practices, we received a report of people chasing caribou on snow machines.</p>		
<p>Predator populations</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • A hunter saw hardly any predators in his area usually, no bear tracks around ever - just some wolverine. Increase in wolverine this last season. Wolf numbers in general perhaps climbing. Pack sizes increasing at least • Inuvik might harvest the most wolves in the winter season – shows in last harvest data – this winter lots of wolves harvested. Will never run out of wolves. • A lot of people go out for meat– just a select group of people who hunt predators. Less predator harvesters than caribou harvesters – less people with those skills, less economically feasible with fur prices down. • This spring was a pretty good year for bear harvest for Inuvik, quite a bit of bears out there. Sometimes they come out a little later, harder to get out to Richards Island to harvest. Lot of bears seen and passed up – lots of small bears, 	<p>Tuktoyaktuk submitted six wolves and Inuvik submitted 15 wolves in the 20/21 season.</p>	<p>A change in wolf harvest does not necessarily reflect changes in wolf abundance.</p>

	<p>give them a few years to grow.</p> <ul style="list-style-type: none"> • Middle Husky Lakes area still a lot of damage done to cabins, sign bear population is still high • More bears and wolves • Wolves – nobody hunts wolves over on the east side – wonder if they’ve moved east, getting killed there? • Wolf incentive is good, would like to see it continue, but it should match what they’re getting in Sahtu • Eagles carry young ones away – crows peck at young ones too – foxes can also predate on calves <p>GRRB:</p> <ul style="list-style-type: none"> • Increasing • “Lots of wolverines last winter. Most I’ve seen in a long time. Not many wolves.” 		
<p>Range and movement patterns</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • Right now there are bunches of caribou from Kugaaluk to North Caribou Lakes – observed about 20. • They’re all in the barrens right now. • Seems like there are still caribou on Tuk Pen. • Discussion about impacts of Inuvik Tuktoyaktuk Highway (ITH). Before 	<p>In 2020, 14 CB collared cows were still active from the 2018 deployment and 12 returned to CB calving ground where two went to TP calving ground, and one TP collared cows moved to CB calving ground. Between 2010 and 2021, 97% of collared</p>	

	<p>ITH, caribou were always in and around Storm Hills and Caribou Hills – seems like they’re gone now with the highway, potentially stayed/moved farther east</p> <ul style="list-style-type: none"> • Would be good to see trends –harvest data collected – to see if distribution has changed after highway • If they’re not coming here, they’re grazing somewhere else – what kind of effect will that have? Reindeer now grazing where caribou used to be. • Much less caribou than long ago – less habitat, less space to graze. There will probably be less wolf/bear dens in the area because of that, too. • Observed at least one wolf den this year by Parsons that wasn’t returned to. • They don't cross to the west side of Husky Lakes anymore, probably because of the road, too much traffic • There are some caribou in the treeline year-round – some are woodland • Migration routes affected by harvesting pressure – too many boats, folks at fingers, 	<p>CB cows (184 records) returned year after year to calving ground.</p>	
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	<p>don't let them cross – need to let the leaders pass (like Gwich'in do with Porcupine caribou). Caribou come down to the treeline still though.</p> <ul style="list-style-type: none"> • Last year: end of April, beginning of May, there were quite a few bulls coming from Bonneville Point and crossing toward 500 Lake – lots crossing Husky Lakes. Some people saw quite a few around Ration Hills, Rough Hills – only bulls (not unusual for that season) • When you go further north, toward Anderson River side, you start seeing a lot of caribou. Probably because there's too much traffic here, road, skidoos, boats, and cabins. • All those cabins around Aginalik (on Husky Lakes) – like a barrier, a fence – caribou used to cross there too, now there are so many cabins that caribou avoid it altogether. More cabins, at least five new ones per year, since the road opened – plus tent frames. Including tent frames, approximately 100 camps from Tutsi Bay to Sitidgi, right where the caribou migration route was. • They mix with reindeer 		
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	<p>sometimes; one knowledge holder herds the reindeer every year at Jimmy Lake and sees woodland and barren-ground cows and calves mixed with reindeer – they take off when the herders come near.</p> <ul style="list-style-type: none"> • Last year or two, the caribou never really reached Old Man Lake – just small bunches here and there. Last time they were around Urquhart, they were always cows and calves. • They always travel in the same general direction, but probably sniff out areas where there’s fresher food; the migration route is slightly different every year. Predators probably impact this too. • The ITH definitely has an impact on their range, shortens it. Before the ITH, the caribou used to migrate to Zed Lake, on the side of Parsons Lake, Bonnetplume Lake. Right where the ITH goes through the trees, they used to winter in that area. All times of year, caribou could be found in those trees. • Used to be so many caribou at Rough Hills too, would just sit on the highest hill, wait for caribou, and shoot 		
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	<p>down.</p> <ul style="list-style-type: none"> • Driving back at night, you could see them sleeping all over the ground – jumping over toboggan – when they get blinded by headlights they run anywhere. • One year, coming back from Tuk by Caribou Hills on the ice road, could see caribou tracks crossing into the Delta. Used to get caribou behind Blue Rogers’ in those lakes. During jigging time you could see them in the Delta. They like muskrat pushups, and eating salt off the ice. • Discussion about how caribou move east and west as well as north and south; wondering if some of them go all the way west to the mountains <p>GRRB:</p> <ul style="list-style-type: none"> • One person said that the caribou were not where they normally are, possibly due to reduced insect numbers this year. • Another reported that since construction of the Inuvik to Tuktoyaktuk Highway, caribou are no longer seen on the west side of the road. • One person requested that collar data be presented to community 		
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	members so that they can see how migration patterns are changing.		
Environment and habitat	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • Concerned about slumps. Some caribou get stuck in the mud when the banks drop – they go there to lick salt and minerals from the exposed permafrost and get stuck. Even moose get caught in there. • Whenever one observer sees moose at Husky Lakes, it's in the slumps. • Maybe the type of vegetation that regrows on the slumps is good food for caribou? • With later freeze-ups, maybe they won't even cross anymore, just stay in treeline. Last year there wasn't much snow, they never really came out of the trees last year. • Lots of slumping • Late freeze-ups and early break-ups • Last couple years not much snow: good for caribou to eat and get fat • Didn't have a January warm spell above 0 like in years past. It rained in Tuk but not here this past January. Five or six years ago, were getting warm spells in the middle of winter. One year it made a crust on the snow, really hard for 	There were very few fires in the 2021 season on the Cape Bathurst Range	

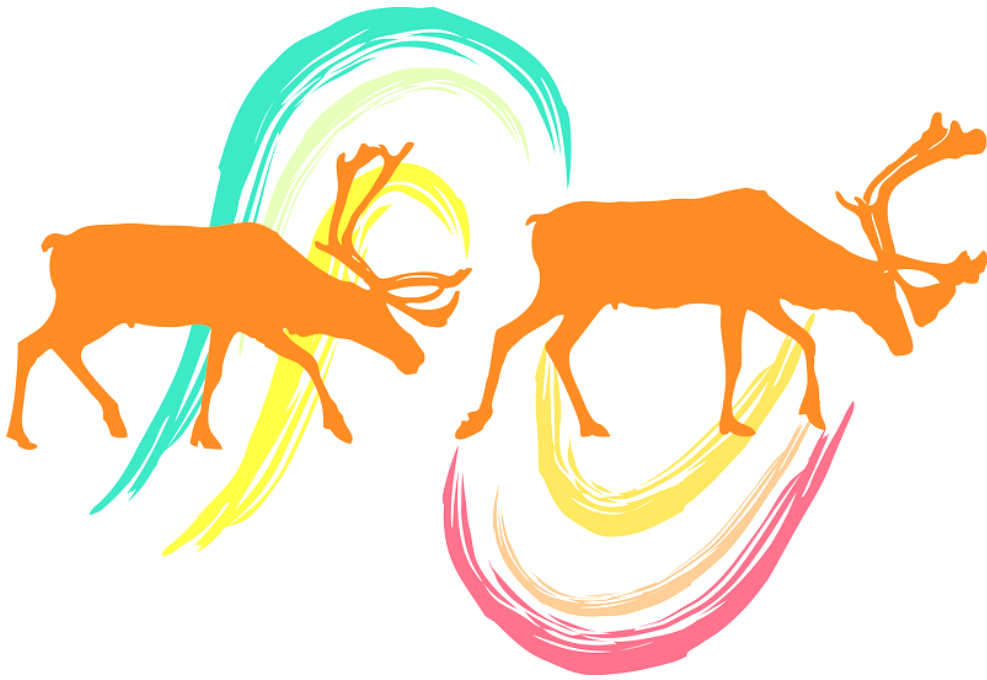
	<p>caribou. They were sliding on hills – the wind and rain hit the hills and glazed over – that year the caribou were in really poor shape. Later that spring with the bad rain-on-snow, went to Herschel Island and Philips Bay and saw dead caribou all over. Saw about 20 dead caribou on the ice near Herschel.</p> <ul style="list-style-type: none"> • This fall was the first time in a long time seeing fat ptarmigan. <p>GRRB:</p> <ul style="list-style-type: none"> • Warming earlier, lots of erosion and slumping, alders are moving into the tundra, moose are moving further north. There wasn't much snow last winter which should have helped the caribou. 		
<p>Human disturbance</p>	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • Husky Lakes - whenever [one observer] sees moose it's in those slumps - at Herschel Island, they were in the slumps • Maybe the type of vegetation that regrows on the slumps is good food for caribou? • Disagree with collaring – harassment of animals, too intrusive • More involvement from Inuvialuit to figure out 	<p>The Cumulative Effects project is ongoing, initial steps to map all current disturbance in the range show that there is a low human footprint on the range (less than 0.4% of the range)</p>	

	<p>how to count these animals without being too intrusive.</p> <ul style="list-style-type: none"> • Concern about ITH providing access for many new camps and cabins – see “range and movements” – in migration route • • Other than that, pretty quiet for activities in the range right now • More impact at Husky Lakes in the fall, because of easier access for fall hunting, boating activity • Starting to see younger generation going out there – not letting the leaders pass – concerned that they’ll keep moving the caribou farther away. • Suggestions for hunter education, teaching young about responsible harvesting • IHTC did get SCARF funding for an on-the-land education trip – community harvest • Suggestion to set dates on hunting season, start in December, let the caribou cross first then there would be lots for everyone. This is an issue to discuss at the HTC level. • Too much hunting for money – dry meat being sold under the table. • The caribou are far away, and gas is expensive, so many are turning to hunt 		
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	<p>moose instead</p> <ul style="list-style-type: none"> • Suggest including younger people in wildlife management meetings. School age, youth council. Community corporation has elders committee and youth network; IHTC has a youth representative. Important to get into schools. ENR hunter education handbook is good – we should develop one for our region. <p>GRRB:</p> <ul style="list-style-type: none"> • The caribou no longer follow their old migration patterns since the Inuvik to Tuktoyaktuk Highway was built. 		
Competitors	<p>Inuvik (WMAC-NWT):</p> <ul style="list-style-type: none"> • Observations of many muskox from Anderson River to Baillie Island • Spring during caribou surveys, muskox around Miner River – even this side of Tsiigehtchic, in the trees, there was a big group of them • Lots of muskox on Tuktoyaktuk Peninsula too. <p>GRRB:</p> <ul style="list-style-type: none"> • Nothing to report. 	<p>Muskox survey in March 2021 shows changes in muskox distribution from past surveys. This includes movement into range of the Cape Bathurst Population in the ISR as a whole appears stable.</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)
ʔehdaɣla Goʔekwé (Délıne Got'ıne)

Understanding Current Bluenose-West Herd Status

The ACCWM met on November 19th, 2021 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, 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 2021 Management Setting

At the start of the 2021 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 past year. During the roundtable, a number of management topics were 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. This highlights 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 undertaken yet. Depending on listings, work on recovery planning and identification of critical habitat may need to happen.
- **Caribou Recovery Strategy:** The NWT Barren-ground Caribou recovery strategy recommends objectives for the conservation and recovery of caribou. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences on the species and its habitat.⁶
- **A rise in signs of climate change:** There are more landslides, slumping, and warmer temperatures; the impacts on caribou are hard to predict.
- **Community-led conservation planning:** The SRRB adopted a community conservation planning approach, and Colville Lake is in the process of finalizing their caribou management plan.
- **COVID-19:** The global pandemic has had impacts on air travel and has caused changes to how much time harvesters have spent on the land. The pandemic has also impacted the member boards' ability to conduct in-person consultation and interviews, as well as impacted ENR's ability to conduct arial surveys.

⁶ https://www.nwtspeciesatrisk.ca/sites/enr-species-at-risk/files/barren-ground_caribou_recovery_strategy_final_8april2020.pdf

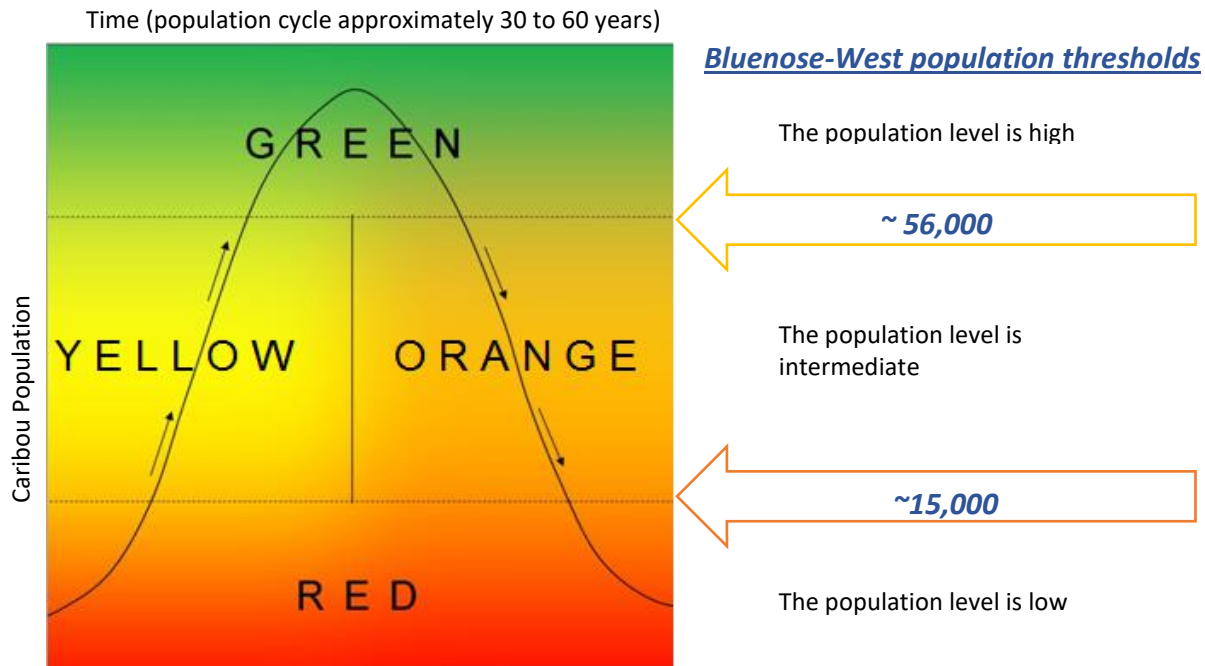


Figure 10: Phases of the population cycle with the colour-coded "traffic light" approach used in the Management Plan and associated Action Plans.

Status Decision 2021

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 10 along with the approximate thresholds for the Bluenose-West (BNW) herd.

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 2020 decision is summarized in Table 12 below.

Based on the information provided, the ACCWM determined the Bluenose-West herd status colour zone to be **orange (intermediate and decreasing)** in November 2021. Member Boards noted that while there are some positive factors described by both the community and scientific presentations, the lack of any indicators strongly showing signs of population growth pushed the ACCWM members to err on the side of caution 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 2022/23

the Bluenose-West caribou population status is
ORANGE: intermediate and decreasing

Presentations Given at the 2021 Status Meeting

Both scientific and community knowledge helped to inform the 2021 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 – 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.

Gwich'in Settlement Area, NWT – Few Gwich'in participants harvest from this herd, so the Gwich'in Renewable Resources Board (GRRB)'s 2021 community-based information is sourced from interviews with only two hunters (both from Inuvik).

Sahtú Settlement Area, NWT – Déljñę is the Sahtú community that primarily harvests ʔehdaɣla ʔekwé. Colville Lake is the Sahtú community that primarily harvests ʔədə. As such, the SRRB annually invites Déljñę and Colville Lake to provide direct presentations of community knowledge to the ACCWM. As part of the SRRB's ongoing Public Listening Session series (2020-2024), publicly available community and scientific information about status of ʔehdaɣla ʔekwé (Caribou Point or Bluenose East caribou, ʔədə (barren-ground caribou in the K'áhsho Got'jñę District or Bluenose West caribou), people, and planning for 2021 can be found in Déljñę and Colville responses to Information Requests, as well as Indigenous knowledge and science literature reviews. These are posted on the Déljñę 2021 PLS Public Registry at www.srrb.nt.ca.

Of note are the following planning updates from Déljñę and Colville Lake: As of October 2021, the Déljñę Got'jñę Government has approved a revised version of the Belare Wile Gots'é ʔekwé - Caribou for All Time plan that accounts for increased conservation concerns about ʔehdaɣla ʔekwé. Colville Lake has developed the Dehlá Got'jñę ʔədə Plan and Ts'jduweh ʔədə ʔeɣa (Ancient Caribou Plan). Expanded versions of these plans that address SRRB recommendations and the PLS "hot topics" for 2020 and 2021 (harvest regulation, predators, and competitors) will be considered by the SRRB at the Déljñę 2021 PLS in February 2021.

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.

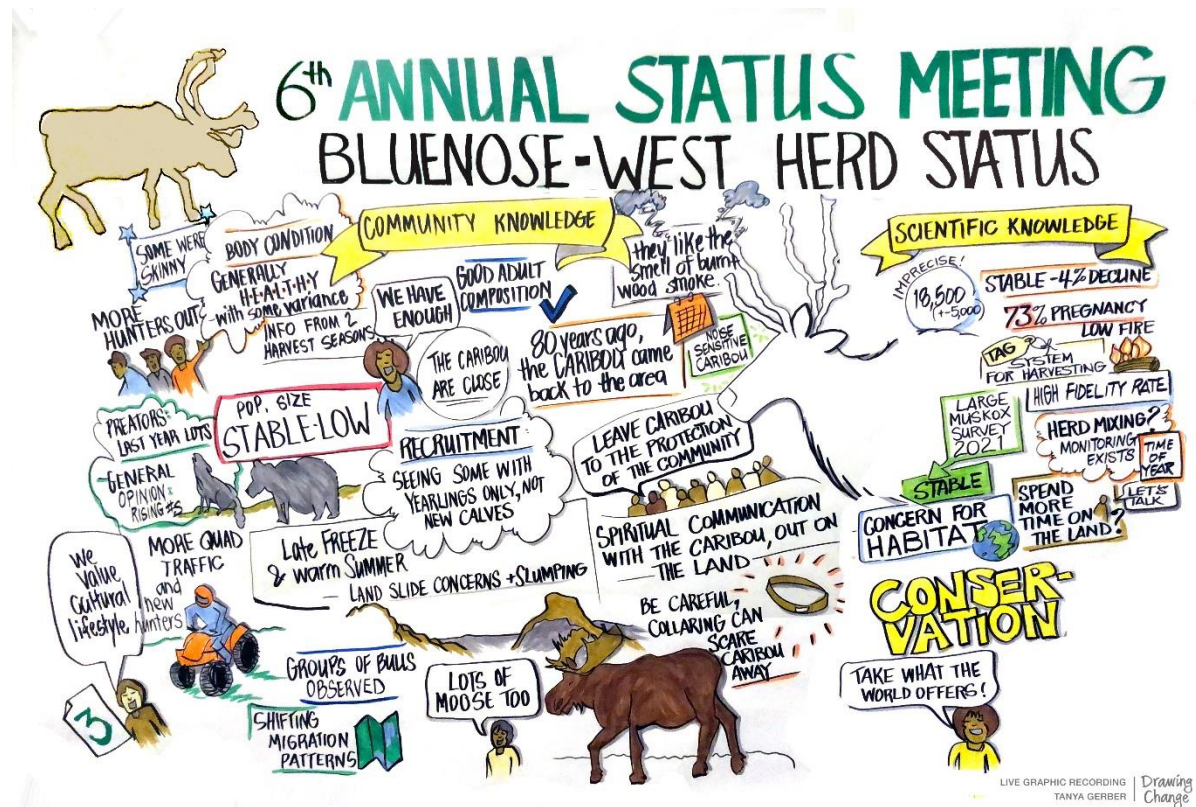


Figure 11: Graphic recording of the Bluenose-West Knowledge presentations. Credit: Tanya Gerber

Inuvialuit Community Knowledge Presentation

Rosemin Nathoo (WMAC-NWT), Larry Carpenter (WMAC-NWT), Ray Ruben (TTNMB, PHTC)

Rosemin advised that the Inuvialuit Community Knowledge collected by WMAC-NWT would cover the last two years as they had been unable to visit the community before the last ACCWM annual meeting due to Covid-19 restrictions. Rosemin presented the data that is included in Table 12 below. Ray Ruben provided additional local knowledge that is summarised in this section.

During the discussion of caribou body condition and health, Rosemin noted that there was a wide variety of observations ranging from hunters reporting obese caribou to some skinny ones. In the previous couple years, they had seen very skinny bulls in September. Rosemin commented that there had been fat bulls but just not in the last year. Ray added that the skinny bulls people are seeing are due to the age of the bulls; while there were observations of some skinny bulls, all the other ones were very healthy.

Ray commented that the spring harvest is nowhere a big as the fall harvest. They might get one or two caribou in the spring as this is not a good time to hunt them. They are too skinny at that time of year.

There continues to be a lot of slumping happening throughout the area. Community member also commented on changes in the climate, including a late freeze up, a warm summer, and no snow well into October. The warmer conditions cause the caribou to spend time looking for places to cool off. They are also eating some different vegetation. Ray commented that the increase in slumping is a concern as it impacts migration routes and may impact the availability of some important forage for the caribou.

This year the caribou migrated right behind the town. According to Ray, people were going out to watch the caribou go by in large numbers for the first time in many years. He also saw big groups of bulls travelling though. In the past they used to see 80-100 in a group, but it's been a long time and they're seeing more and more twins.

Jim Elias remarked that back in the Elan days (1970s), they were living close to the Anderson River, and they had to travel very far to find the caribou. "They had none for awhile in the 1970s. That's why we ended up with reindeer. Then the caribou came back in the late 70s." He noted that the herd got very big, so the moose left when the caribou came. He said that the caribou have population cycles and when it's their time, "somewhere down the road, they will come back".

Walter Bezha agreed that the best information comes from both hunters and elders. He noted that the cycle of harvests throughout the year is important as they prioritize hunting bulls they at their fattest. There are other times when the hides may be better. Walter also commented that as of five or six years ago there was no longer ice that would last through the summer. In the past, caribou could find ice patches to get away from the bugs in June. He warned that this will be true for the more northerly regions as well as the climate warms up.

Ray and Jim both remarked that they are already seeing changes. They have a long history of experience in the area that is allowing them to adapt the impact of climate change. Ray explained, "In the dog-team days we would go for a week or 10 days and we had to go the distance [to find caribou]." In those days they might get lucky and only have to go five kilometres. "Cycles and migration and routes and areas are always shifting. Today we learn to shift."

Gwich'in Community Knowledge Presentation

Steve Anderson (GRRB)

Steve Anderson provided a review of the information covered in Table 12. He noted they had a very small group of hunters providing information as the Porcupine Herd is still the more easily accessed caribou herd for Gwich'in hunters. This community knowledge data was collected through interviews with six harvesters and two RRC coordinators. Of the hunters providing information, none had made recent observations. One hunter commented on the BNW herd; two commented on the CB herd and provided comments that applied to both herds.

Sahtú Community Knowledge Presentation

Richard Kochon (BAFN)

The Sahtú Community Knowledge presentation was delivered by Richard Kochon of Behdzi Ahda First Nation (Colville Lake). He expressed that the data-collection process was still in development for their community. Additionally, the other representative of BAFN that normally presents at the ACCWM annual meeting were unable to attend. As such, Richard's presentation provided details on his own experiences and personal traditional knowledge. Richard expressed that caribou are very important for their community; They don't take them for granted. He trusts that the community will handle the management of the caribou, keeping them safe for a long time.

Speaking to his observation of predators, Richard remembered a time when he was hunting with his younger brother. He saw a caribou running out on the lake. It was being chased by a wolf. Seeing that the caribou was exhausted, running with its tongue hanging out, Richard's brother shot the wolf. They could see that the caribou was relieved. Richard explained that the caribou are happy when people stay on the land. They know that people hunt the wolves. "The caribou are happy for us. They always hang around our camps."

Richard told the group that he hopes that ENR will help people get on the land. In the past they have provided funding but it is expensive to go out these days. Being on the land is an important part of managing caribou; if this is left to others then they won't take care of the caribou properly.

The caribou have come and gone in cycles over the past 80 years. Richard observed that ever since the community had started using furnaces (rather than woodstoves), the caribou had stayed away. "Burning wood is good, they like that wood-burned smell. That is what the elders say. Where they burn wood, they like the smell of smoke. They like that so they go there."

According to Richard, there are a lot of other ways to take care of caribou. In Colville Lake they still hunt with snowshoes, this is seen as a good way to hunt as they can get right up to the caribou without stressing them. Another way to care for the caribou is to hunt moose rather than travelling long distances to find the caribou.

Richard expressed his hope that ENR would work with them on caribou: "All our life we stay around here. Once in while the ENR can come and stay with us for a year. They can live with us and stay with us to learn." The community wants to take on co-management like this.

They go hunting on the barren grounds every fall. Sometimes they are not able to harvest caribou, but it is still beautiful and allows them to spiritually communicate with the caribou. "The caribou are curious; they look at us. Our elders have spiritual communication with caribou, they seem like they are OK, they are dancing, so I just want to share that."

Lastly, Richard expressed his concern for the caribou that are being collared and his respect for the traditional knowledge coming from the surrounding regions:

“Choppers. They catch them – they are just loud and I start feeling for the caribou. They are just shaking. It would be like us if we had no gun and a grizz was chasing us, we would be scared to death... They did that around Délı̄ne, and then they moved. A few years ago, the biologists scared them maybe to death and they never go back to that place. We have to be careful about that. We have lots of TK and we can handle the management like that. I wanted to say that, thanks for listening. Inuvik, Tuk, and the Gwich’in, when they take care of [the caribou], I feel the caribou are in good hands.” – Richard Kochon

Tuktut Nogait National Park Management Board Presentation

Laurance Carter (Parks Canada), Tom Nesbitt (TNNP management board member)

Tom Nesbitt gave a brief description of the TNNPB and its mandate. He described how the agreement negotiated in 2001 established a decision-making process for the federal government, the park, the board, and ENR. The agreement compels the superintendent, acting as representative of the Minister, to participate in all TNNPB meetings.

Laurance Carter presented one of the major projects the park is working on, the Bluenose-West caribou forage project.

The goal is to more accurately map the habitat in the core calving grounds, and to develop a model for using the photos to interpret the old satellite data. This will allow Parks Canada to understand how the core calving grounds have changed over the past decades. There are factors such as bugs, temperature, precipitation, caribou movement patterns, and altitude, but now they are primarily looking at forage quality and availability.

Currently, their model is not sufficiently accurate. They plan to do more ground plots and move to a higher resolution satellite imagery database. The previous model was built using 5m resolution imagery while the new imagery will have a 50cm resolution. The hope is that by next year’s meeting they will be able to provide a significantly improved model system for analysing the caribou habitat.

Ray Rueben spoke about his community’s connection to the park and the project. Community members are heavily involved in interpreting data and in work on the ground. In his mind this is science and traditional knowledge working together perfectly.

Parks has tested using higher resolution imagery but has found that it doesn’t improve the results of the model.

Adam Bathe asked if the park was exploring how to better include TK in the predictive model. Laurence said there was nothing yet as most of the TK was used outside of the calculation.

Presentation on Scientific Information

Tracy Davison (ENR)

ENR's most recent post-calving ground survey was conducted in during 2021. 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 method. Of the two population-estimation methods, ENR and the boards agreed at the 2016 meeting that the Rivest is preferred as it takes into account group size along with data from collars and photo surveys.

The population survey results (the number of adult caribou) were: Total Adult Population Estimate: 18,440 ± 5211.

Table 7: BNW Rivest population estimates (2000–2021).

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.

Year	Rivest Estimate
2021	18,440 ± 5211
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

Population trend and rate of change

The 2021 Rivest population estimate of 18,440 ± 5,211 caribou (95% CI) represents that between 2005 and 2021 the herd experienced a non-statistically significant decrease of 2% per year (95%CI of stable to 4% decline).

Rivest population estimates (with 95% confidence intervals) as well as minimum counts for the period from 1986 to 2021 are shown in Table 7.

During this year's survey, 52 of the 68 collared caribou were sighted. Due to the conditions during the survey many of the caribou were not clumped up. This impacts the statistical functions that are used to estimate the total population. While ENR did take this into account the resulting population estimate is just not as precise.

Productivity and recruitment

During the collaring process, a blood sample is taken. The level of progesterone in these blood sample is an indicator of pregnancy. Of the 33 samples ENR collected, 73% indicated that the cow was pregnant. This is a moderate rate. It is not as high as the biologist would like to see but it is a better pregnancy rate than has been observed in the past.

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.

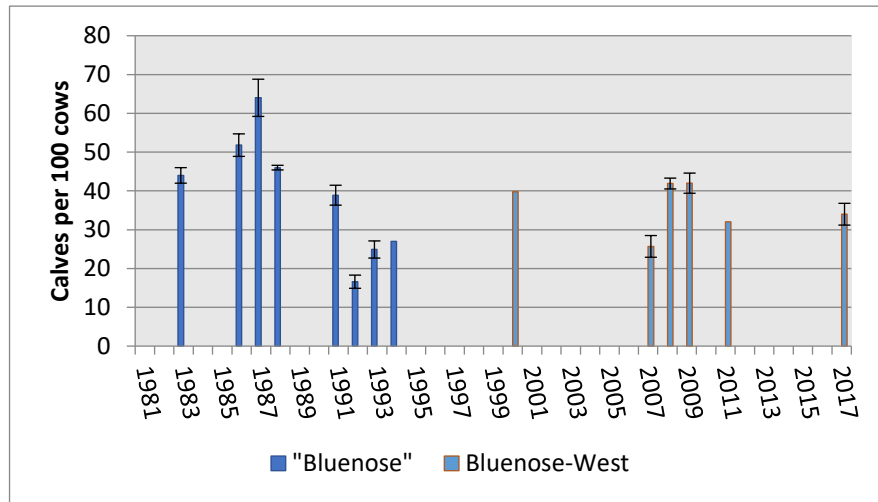


Figure 12: Recruitment estimates for Bluenose-West caribou, 1981–2017.

Recruitment survey data presented during the status meeting is shown in Figure 12. 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.

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.

No new scientific information was presented on this topic. Data from previous years is presented below.

Table 8: Results from hunter-harvest body condition sampling for Bluenose-West caribou.

Season	Average Condition Code (number of samples)	
	Female	Male
2019/20*	2.4 (10)	3 (3)
2018/19*	0	0
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)



Figure 13: 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.

Results for average body condition ratings data from previous years was presented and is summarized for the Bluenose-West herd in Table 8 and Figure 13. 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.

Back fat measurements for the Bluenose-West caribou herd are presented in Table 9 and Figure 14 below. Marrow fat measurements are shown in Table 10 and Figure 15. Marrow Fat observations for 2019/20 were in the healthy range.

Table 9: 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
2019/20*	2.04 (7)	2.55 (18)
2018/19*	0	0
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)

* 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.



Figure 14: Average reported back fat measurement (in centimeters) for the Bluenose-West herd, with number of samples noted at the top of the bar.

Table 10: Results from marrow fat health sampling for the Bluenose-West herd combined.

Season	Marrow Fat % (number of samples)	
	Female	Male
2019/20*	88 (6)	91 (15)
2018/19*	0	0
2017/18*	91 (9)	77 (12)
2016/17*	0	91 (7)
2015/16*	88 (6)	91 (15)
2014/15*	90 (26)	90 (23)
2013/14	90 (10)	91 (20)
2012/13	90 (19)	91 (31)
2011/12	93 (3)	93 (1)
2010/11	92 (8)	87 (19)
2009/10	89 (12)	88 (19)
2008/09	90 (7)	90 (8)

* 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.

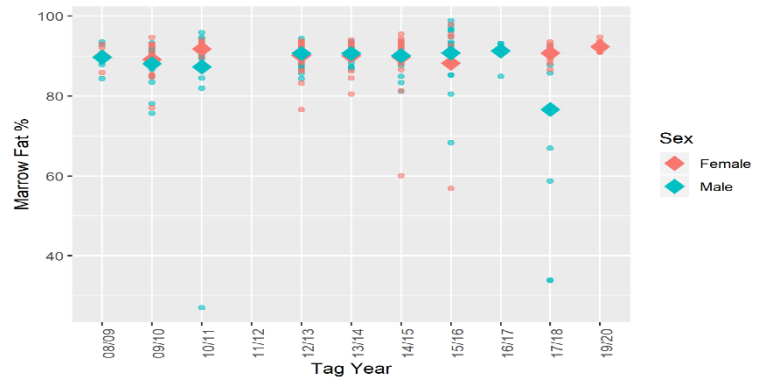


Figure 15: Marrow fat percent and average (diamond). Includes: I/BC/08 harvests plus from 14/15 to present harvest by Inuvik and Tuktoyaktuk harvesters.

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. The 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. The TAH was revised for the 2019/2020 season based on the 2018 estimate and set at 840 animals.

Harvest allocations to each region are: 34 Gwich'in (4%), 403 Inuvialuit (48%), and 403 Sahtú (48%). This recommendation also included a bull-dominated harvest with a target of 80% bulls to encourage herd recovery. ENR does not believe that the 80% target is being met.

The number of tags used for each region were: 254 Inuvialuit, 34 Gwich'in. There were no harvest numbers reported for the Sahtú region and there are no observations of changing harvest levels from previous years in Sahtú communities.

Predator populations

ENR collects samples from wolves harvested by hunters (Table 11; samples are mostly from the winter season, when wolves tend to be hunted. In previous years, stomach contents were sampled, and of all the Inuvik region mainland wolf samples submitted, 68% of the stomach contents were 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 11: Number of wolf carcasses/samples submitted to ENR by Paulatuk hunters, 2007–2019.

Year	Paulatuk	Colville	Fort Good	
		Lake	Hope	Unknown
2020/21	1	0	n/a	n/a
2019/20	0	0	n/a	n/a
2018/19	0	2	n/a	n/a
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	96	98	16	15

Other scientific information

- Collars are used to monitor whether the calves and cows return to the same calving grounds year after year. Between 2010 and 2021, 99% have gone back to the same place year after year, showing a very high fidelity rate.
- There were not many new fires in the Bluenose-West range.
- Industrial work is minimal in the Bluenose-West range. For the most part it is limited to a few helicopter flights, mostly by local communities and researchers in the range.

Discussion

Senwung Luk, legal council for BAFN, asked if ENR had considered alternatives to aerial surveys and if there are other ways that ENR has looked at to minimize disturbance to caribou. Tracey Davidson responded that ENR is actively looking at alternatives, their current procedures are designed to limit stress as much as possible, and they recognize there is always room for improvement.

Luk invited ENR to spend more time working with BAFN on the shared goal of reducing the need for collars and limiting the disturbance to caribou. Kevin Chan, the Sahtú regional biologist for ENR, mentioned that he had talked with the BAFN leadership about spending more time working with the community. They both pitched the idea of having ENR staff participate in the community harvest. This would allow them to see what challenges people face in using sample kits. At the same time, they could work together to see what questions community members want ENR to address.

Walter Bezha added that traditional knowledge confirms and complements what was being presented at the meeting. He said that they had harvested as many as five caribou for a healing camp on McGill Bay in July. Body condition and fat are very important indicators for harvesters. They don't harvest if caribou don't have fat; a lot of harvest is based on when they are prime. The harvest goes down when the herd numbers are down.

Walter also commented on the collaboration between ENR and BAFN; "Listen, to them you hear them struggle, if you go with you can learn from them by watching. I want to stress that, as that's such a big part of our conservation plan."

Table 12: Criteria used to assess Bluenose-West herd status in 2021⁷

Criteria	Community-Based Information ⁸	Scientific Information ⁹	Comments
Population size	<p>GRRB:</p> <ul style="list-style-type: none"> Less or same as past years <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> Seems to have been stable for a few years. Good stable numbers. New normal? Hunters all saying they got lots of caribou when they went hunting – just need to go far enough to reach them This past year was first in a long time that animals are 	Estimated number of adult caribou at least 1.5 year old in 2021 Rivist: 18,440 ± 5211 (95% CI)	Estimated based on July post-calving ground survey

⁷ This table is populated with information presented to the ACCWM to assess herd status in 2020 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

⁸ 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:

- 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.
- Few Gwich'in participants harvest from this herd, so the Gwich'in Renewable Resources Board (GRRB)'s 2021 community-based information is sourced from interviews with only two hunters (both from Inuvik).
- Déłıne is the Sahtú community that primarily harvests ʔehdaıla ʔekwé. Colville Lake is the Sahtú community that primarily harvests ʔədə. As such, the SRRB annually invites Déłıne and Colville Lake to provide direct presentations of community knowledge to the ACCWM. As part of the SRRB's ongoing Public Listening Session series (2020-2024), publicly available community and scientific information about status of ʔehdaıla ʔekwé (Caribou Point or Bluenose East caribou, ʔədə (barren-ground caribou in the K'áhsho Got'ıne District or Bluenose West caribou), people, and planning for 2021 can be found in Déłıne and Colville responses to Information Requests, as well as Indigenous knowledge and science literature reviews. These are posted on the Déłıne 2021 PLS Public Registry at www.srrb.nt.ca.
Of note are the following planning updates from Déłıne and Colville Lake: As of October 2021, the Déłıne Got'ıne Government has approved a revised version of the Belare Wıle Gots'é ʔekwé - Caribou for All Time plan that accounts for increased conservation concerns about ʔehdaıla ʔekwé. Colville Lake has developed the Dehlá Got'ıne ʔədə Plan and Ts'ıduweh ʔədə ʔeʔa (Ancient Caribou Plan). Expanded versions of these plans that address SRRB recommendations and the PLS "hot topics" for 2020 and 2021 (harvest regulation, predators, and competitors) will be considered by the SRRB at the Déłıne 2021 PLS in February 2021.

⁹ All scientific information and comments were provided by Environment and Natural Resources (ENR) (GNWT) unless otherwise noted.

	<p>coming close to the community</p> <ul style="list-style-type: none"> July, later in summer, herd of around 300 caribou was seen at Billy's Creek, then 1,000 caribou were observed over the hill; 1,000 then ended up across the bay. This was very exciting Saw a few young bulls here and there this fall (September) and most of winter – missed lots because weather impeded travel. <p>Paulatuk (WMAc-NWT) 2021:</p> <ul style="list-style-type: none"> Has been stable for a long while. People get what they need and have good access to caribou, easy to get them from about two hours from town. Local population is at level that sustains community 		
<p>Population trend and rate of change</p>	<p>GRRB:</p> <ul style="list-style-type: none"> Decreasing or same as last couple years. <p>Paulatuk (WMAc-NWT) 2020:</p> <ul style="list-style-type: none"> Leveled out currently. Leveled out trend for the past few years, been stable. They're always in the same place at the same times; we know where the caribou are. A lot of caribou, a lot of wolves. 	<p>Between 2005 and 2021 the herd shows a non-statistically significant decrease of 2% per year (95% CI of stable to 4% decline)</p>	<p>Trend analysis is based on Rivest estimates</p> <p>2021 18,440 ± 5,211</p> <p>2018 21,011 ± 4,602</p> <p>2015 21,535 ± 5,136</p> <p>2012 32,326 ± 15,482</p> <p>2009 21,773 ± 4,884</p> <p>2006 28,461 ± 7,431</p>

	<p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Still stable – small fluctuations only for the past decade. <p>Have caribou throughout winter – means numbers are pretty good</p>		2005 26,228 ± 5,878
<p>Productivity and recruitment</p>	<p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • Reports of cows seen with a young one and a yearling or two yearlings. • Lot of our hunters going up and not seeing young with cows – seeing many cows with yearlings, but not newborn calves • One observation last spring of a cow with two young – yearling and newborn. • Might have seen a couple cows with calves this last season. The year before they saw many cows with young ones but this year was so different – yearlings, not young ones. <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • See a lot of young ones, multiple calves with cows, good signs of growth. • Seeing larger/older calves with cows – it seems like calves are staying with their mothers longer – change in diet? • Seeing mostly cows and calves for a longer period in the fall. <p>GRRB:</p>	<p>Pregnancy rate of captured cows 2021: 24/33 (73%).</p> <p>Last recruitment survey was 2017 so no current information available.</p>	<p>Pregnancy based on serum progesterone.</p> <p>2017 recruitment survey estimated was 34 + 2.8 (SE) calves per 100 cows.</p>

	<ul style="list-style-type: none"> • Few • “In the past, I used to always see calves and cows. None in the past two years.” 		
<p>Adult composition</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • Fewer males than normal <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • Billy Creek observation of 300-animal herd – 2/3 bulls. One hunter did not see more bulls than previous year • Saw some groups of 10-11 bulls. Within treeline, thousands of bulls – until 1st week of October. Didn’t see huge movement from east to west of migrating cows – smaller groups, go farther to find them – sometimes you just don’t see them, they’re using different areas – other hunter said he saw them all over. • One hunter observed a herd of 30-40 cows. Another hunter observed a herd of 20 cows Mostly ran into herds of cows, other hunters ran into 3-4 bulls in a bunch. • Observed bulls coming for two days at Langton Bay – older ones then younger ones. <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Good mix, what sex is seen depends on time of year. • Mostly harvest bulls now, don’t do late fall cow 	<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>	

	harvest anymore – but bulls always come back at similar numbers every year		
Body condition and health	<p>GRRB:</p> <ul style="list-style-type: none"> • Healthy, no disease, not skinny <p>Paulatuk (WMAc-NWT) 2020:</p> <ul style="list-style-type: none"> • Other active hunters getting a lot of skinny bulls in September 2020. Some hunters got lucky and got some fat ones. • At the end of September/ early October 2020, some of the big bulls were literally skin and bones. Big bulls were skin and bones by then, not even rutting season yet. They shouldn't be that poor that time of year. Expect lots of fat then, but the fattest bull I got last year was 1 inch. 8/10 people who hunted with me, their bulls were like that. • Bigger horned bulls skinnier than smaller ones. (Mating earlier? Reindeer mate a month earlier – were they reindeer?) • Some good shape bulls to the west in September. Year before last, in 2019, on average condition was better than other years, but last year was terrible. • Disease: A few with sandpaper legs – Besnoitia. Got one whole body had tiny dots in the meat, can feel it like sandpaper all 	No new information available.	

	<p>over. Cut rump open find white balls, loaded right in the meat (tapeworm larvae). Caribou with inflated lungs stuck to the ribs.</p> <ul style="list-style-type: none"> • One hunter was happy with the meat that he got, but he usually keeps fat caribou over winter for quaq, but this year couldn't do it, too skinny. <p>Paulatuk (WMAc-NWT) 2021:</p> <ul style="list-style-type: none"> • Some disease, infection and injury, but not more than usual. • Healthy caribou generally. Not as fat as last year (last year they were particularly fat), some skinny ones, but quite healthy 		
<p>Harvest levels</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • Low. Hunters are generally hunting the Porcupine Herd; 7 tags were used. • “I’d really appreciate an increase in the number of tags. They’re all gone by Christmas. During years when Porcupine Caribou aren’t available, those tags really help people.” <p>Paulatuk (WMAc-NWT) 2020:</p> <ul style="list-style-type: none"> • Changes in lifestyle. No one harvesting in the springtime anymore – used to be a big rush in May. Cumulative changes to culture. • Community harvest last fall – harvesting was spread 	<p>Total harvest uncertain.</p> <p>Sex of harvest is not always reported. ENR believes the 80% bull target is not being met.</p>	<p>TAH tag returns in Inuvik Region 2020/2021</p> <p>Inuvialuit: 403 Quota, 254 harvested</p> <p>Gwich’in: 34 quota, 7 harvested</p> <p>There are no observations of changing harvest levels from previous years in Sahtu communities.</p>

	<p>out evenly, took 10 days to do the whole harvest, were ranging quite a ways away from the camp to fill the harvest. Successful.</p> <ul style="list-style-type: none"> • Individual harvesters – caribou were there but health wasn't so great. • Harvest study is paused, information missing – hard to answer. <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Everyone getting what they need • More hunters going out, learning skills, able to get their own caribou • Community harvest was smaller this year because more people could go out and get their own. 		
<p>Predator populations</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • “Friends have been getting lots of wolves.” • “Lots of wolverines last winter. Most I’ve seen in a long time. Not many wolves.” <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • Lots of wolves being spotted. So many bears, unreal. • Family of wolves always at Hornaday camp in summer • When wolves are observed on the land, caribou leave the area very quickly – large effect on their movements • One observation of a caribou with large injury from predator on its neck 	<p>Paulatuk submitted 1 wolf and Colville Lake submitted 0 wolves in the 20/21 season.</p>	<p>Changes in wolf harvest do not necessarily reflect changes in wolf abundance.</p>

	<ul style="list-style-type: none"> • Didn't see any bear cubs— year before that there were lots. • In 2019, saw one sow with 4 cubs. • Not too many eagles this year. In 2019 there were a lot. <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Seeing wolves, not too many – not seeing as many close to the community this year. • Didn't notice any bear kills this year on the land – not scavenging either. 		
<p>Range and movement patterns</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • Nothing to report. <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • This past year first in a long time coming close to the community. • Consistent areas at specific time of year • Some hunters wait later on in the month to go west and get good fat bulls. Preference – it's come to the point when harvesters have a preference to go west, south, or east to get caribou depending on where you want to go, because there are caribou in every direction. • 1994 was a really bad year, people going all the way up past Andersen River to get caribou. Since then, changed to gradual harvesting closer to the community. 	<p>In 2021, 11 BNW collared cows were still active from the 2018 deployment and all returned to BNW calving ground.</p> <p>Between 2010 and 2021, 99% of collared BNW cows (219 records) returned year after year to calving ground.</p>	

	<ul style="list-style-type: none"> • Now we're actually taking pictures of caribou outside our house. Many hunters that went out are not at this meeting. Missing information. • Wolves were aware of the change of migration routes and were waiting for them near the community <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Similar to last year • Nice to see them migrating right behind us on the hills, young people got to see it for first time in many years – spring migration, nice to see the hills dance again, don't remember the last time that happened. • End of September they started coming from the west toward Paulatuk to the end of Big Lake, through Langton • Lots of bulls gathering west and south of town. • Summer range: Parry Peninsula, Langton Bay, Biname (wide range) • A few showed up couple weeks ago from east but not many yet – no one hunting on east side yet • Cows observed going up eastward rather than south • Really depends on the weather (late freeze-up) 		
<p>Environment and habitat</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • Forest fires, lots of erosion and slumping, alders are moving into the tundra, 	<p>There were very few fires in the 2021 season on</p>	

	<p>moose are moving further north. There wasn't much snow last winter which should have helped the caribou.</p> <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • Weather seems to be the same more or less, snow came in almost the same time. Summer was cooler, we thought caribou were going to do really good, cooler than previous years. Bugs nonexistent most of the time last summer. • Grass greener this summer, not brown – no cranberries this year, no akpiks. Vegetation was not up to par last summer. • Hardly any blueberries. Not many mushrooms. • Vegetation quality very closely linked with where caribou calve. • Some rain in November but didn't impact caribou too much. • Does slumping play a part in caribou food source? More slumping. • Some places can actually see big chunks of land missing. • There is concern about slumping and landscape change along the migration routes and in high value foraging areas. <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • Very late freeze up and warm summer – caribou 	<p>the Bluenose-West range</p>	
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	<p>on hills and in lakes in cooler areas.</p> <ul style="list-style-type: none"> • Still using quads, normally this time of year hunters travel on skidoo. • Concerned about landslides and coastal erosion – lots this summer. Some areas with shallower slopes where it seems like large swaths of land slid slowly down and exposed mud. 		
<p>Human disturbance</p>	<p>GRRB:</p> <ul style="list-style-type: none"> • Nothing to report. <p>Paulatuk (WMAC-NWT) 2020:</p> <ul style="list-style-type: none"> • Concerns about impacts of research, collaring, and surveys on caribou. Especially collaring bulls. • No activity in the park • No research • Concerned about cruise ship landings (less this year) • Generally, very slow this year because of COVID • ENR were doing surveys on Parry Peninsula, didn't see caribou – boulders – saw caribou moving south from there later (survey missed caribou?) <p>Paulatuk (WMAC-NWT) 2021:</p> <ul style="list-style-type: none"> • More quad traffic, more hunters, new hunters going up with regular hunters – more traffic but caribou don't seem impacted, 	<p>The Cumulative Effects project is ongoing, initial steps to map all current disturbance in the range show that there is a low human footprint on the range (less than .05% of the range)</p>	

	<p>caribou quite tame and don't seem skittish around quads; they just carry on eating.</p> <ul style="list-style-type: none"> • Caribou right on trail where people travel. • Young hunters learning good skills from more experienced hunters • HTC monitors activities really well • Tag system going well, people comply • Keep advocating for finding better technologies for tracking caribou – collars can damage caribou 		
Competitors	<p>GRRB:</p> <ul style="list-style-type: none"> • Nothing to report. <p>Paulatuk (WMA-NWT):</p> <ul style="list-style-type: none"> • Saw lots of reindeer last fall, up in Billy Lake. Reindeer interbreeding? Skinny bulls might actually be reindeer rutting earlier? Lots of moose everywhere. Way more than usual. Could they affect the migration of the caribou? Family of moose, second year they come to Hornaday River. (Not sure when is the best time of year to harvest them) • Observed some muskox moving north on the peninsula right after freeze up • A few muskox up Hornaday River • Not so many muskox in the past but other harvesters 	<p>Muskox survey in March 2021 shows changes in muskox distribution from past surveys. Population in the ISR appears stable.</p>	

	might have more information		
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BLUENOSE-EAST CARIBOU

— RED/YELLOW STATUS —



Tuktuvialuk (Inuvialuktun, Siglitun dialect)
Tuktut (Inuinnaqtun, Kugluktuk, Western Kitikmeot)
ʔedə (K'áhsho Got'ıne, Dela Got'ıne)
ʔehdaıla Goʔekwé (Délıne Got'ıne)
Sahtı ʔekwò (Tıchq, Wek'èezhıı)

Understanding Current Bluenose-East Herd Status

The ACCWM met on November 23th, 2021 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 2021 Management Setting

At the start of the 2021 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, a number of management topics were 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 undertaken yet. Depending on listings, work on recovery planning and identification of critical habitat may need to happen.
- **Caribou Recovery Strategy:** The NWT Barren-ground Caribou recovery strategy recommends objectives for the conservation and recovery of caribou. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences on the species and its habitat.¹⁰
- **Increase in predator population:** Representatives from many 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 KAA 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

¹⁰ https://www.nwt-species-at-risk.ca/sites/enr-species-at-risk/files/barren-ground_caribou_recovery_strategy_final_8april2020.pdf

restrictions.¹¹ In 2017, a community conservation plan was put into effect in Déljné to guide peoples' actions toward Bluenose-East caribou,¹² and a community caribou conservation plan for Colville Lake was being finalised at the time of the meeting.

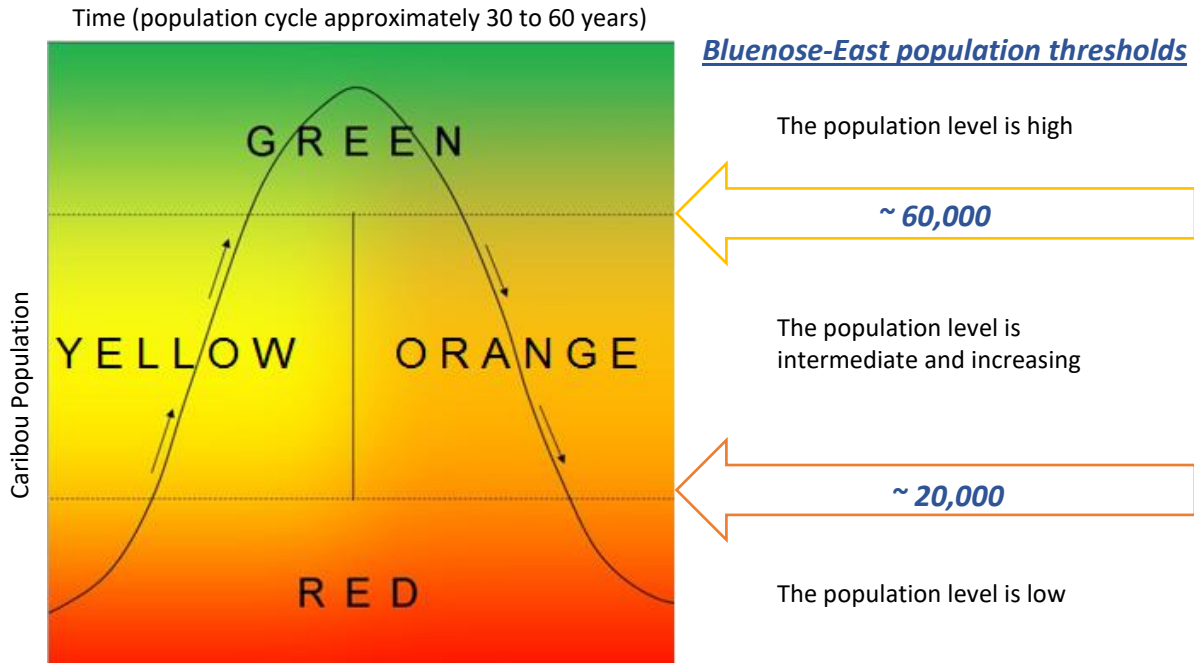


Figure 17: Phases of the population cycle with the colour-coded "traffic light" approach used in the Management Plan and associated Action Plans with Bluenose-East Population thresholds.

Status Decision 2021

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 2021 decision is presented below and summarized in Table 15 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.¹³

¹¹ The Kugluktuk management plan is available from the Kugluktuk Angoniatit Association (Hunters and Trappers Organization), kugluktuk@kitikmeothto.ca.

¹² The Belare Wíle Gots'é ʔekwé plan is available from the Lands, Resources and Environment Department of the Déljné Got'jné Government.

¹³ 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.

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 17 along with the approximate thresholds for the Bluenose-East herd. During the annual status meeting, stakeholders are encouraged to provide important local and Indigenous knowledge that helps to inform the status decision. This data is reported in the Annual Meeting Summary report when it doesn’t fit into the monitoring criteria listed in Table 15.

The ACCWM met in November 2021 to discuss community-based monitoring and scientific information for the Bluenose-East caribou herd. At that time, a consensus could not be reached to determine an agreed upon status for the herd. The member boards expressed their interests in pursuing a consensus after they had time to discuss the viewpoints of the other boards with their own boards. Follow-up meetings were held in the subsequent months, but no consensus could be reached for either a **Red** or **Yellow** status. In April 2022, the member boards decided upon a hybrid **Red & Yellow** status which recognized the positive indicators while still highlighting the fact that there are concerns about the population of the herd.

The community data presented at the meeting indicated several positive observations such as the increased twinning of calves and a rise in the sub-adult population numbers in 2021. At the same time, the scientific data presented indicated that the change in population since 2018 was not statistically significant and there is no increase in the number of adult females. This was further complicated by the fact that the estimate population was right on the threshold (about 20,000) between the accepted ranges for the two statuses as described by the management plan. As previous experience with the Bathurst Herd had shown that there can be year to year increases in the population numbers while the long-term trend for the population continues downward, there was a strong sentiment that the ACCWM should err on the side of caution.

Based on the information provided and the subsequent discussions, the ACCWM determined the Bluenose-East herd status colour zone to be both **Red (low)** and **Yellow (intermediate and increasing)** in November 2021. This decision recognizes that though there are some positive community and scientific observations, the observed population level at the ~20,000 threshold between **Red** and **Yellow**. As a result of this decision, the ACCWM has decided to continue to recommend the management actions associated with **Red (low)**, with the hopes that the herd will be firmly in the **Yellow** range by November 2022.

Given that a hybrid status has not previously been used by the ACCWM, member boards will need to be proactive to ensure that the public understands that the herd may not be increasing yet.



In 2022/23
the Bluenose-East caribou population status is
RED: low
&
Yellow: intermediate and increasing

Presentations Given at the 2021 Annual Status Meeting

Both scientific and community knowledge helped to inform the 2021 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 groups presented their community data to the gathering:

Western Kitikmeot Region, NU – Kugluktuk information was documented and shared by Larry Adjun and Amanda Dumond of the KAA during the meeting. This data was collected through workshops and interviews with KAA members.

Sahtú Settlement Area, NWT – Dél'ıne is the Sahtú community that primarily harvests ʔehdaıla ʔekwé. Colville Lake is the Sahtú community that primarily harvests ʔədə. As such, the SRRB annually invites Dél'ıne and Colville Lake to provide direct presentations of community knowledge to the ACCWM. As part of the SRRB's ongoing Public Listening Session series (2020-2024), publicly available community and scientific information about status of ʔehdaıla ʔekwé (Caribou Point or Bluenose East caribou, ʔədə (barren-ground caribou in the K'áhsho Got'ıne District or Bluenose West caribou), people, and planning for 2021 can be found in Dél'ıne and Colville responses to Information Requests, as well as Indigenous knowledge and science literature reviews.

Wek'èezhìi (Tıjchq), NWT – Stephanie Behrens of the TG presented on data collected in the Tıjchq region. The data presented was collected through the various monitoring programs that the TG runs including the Sahti ekwò monitoring program, Ekwò Nàxoèhdee K'è: Boots on the Ground program and the Dìga harvest program.

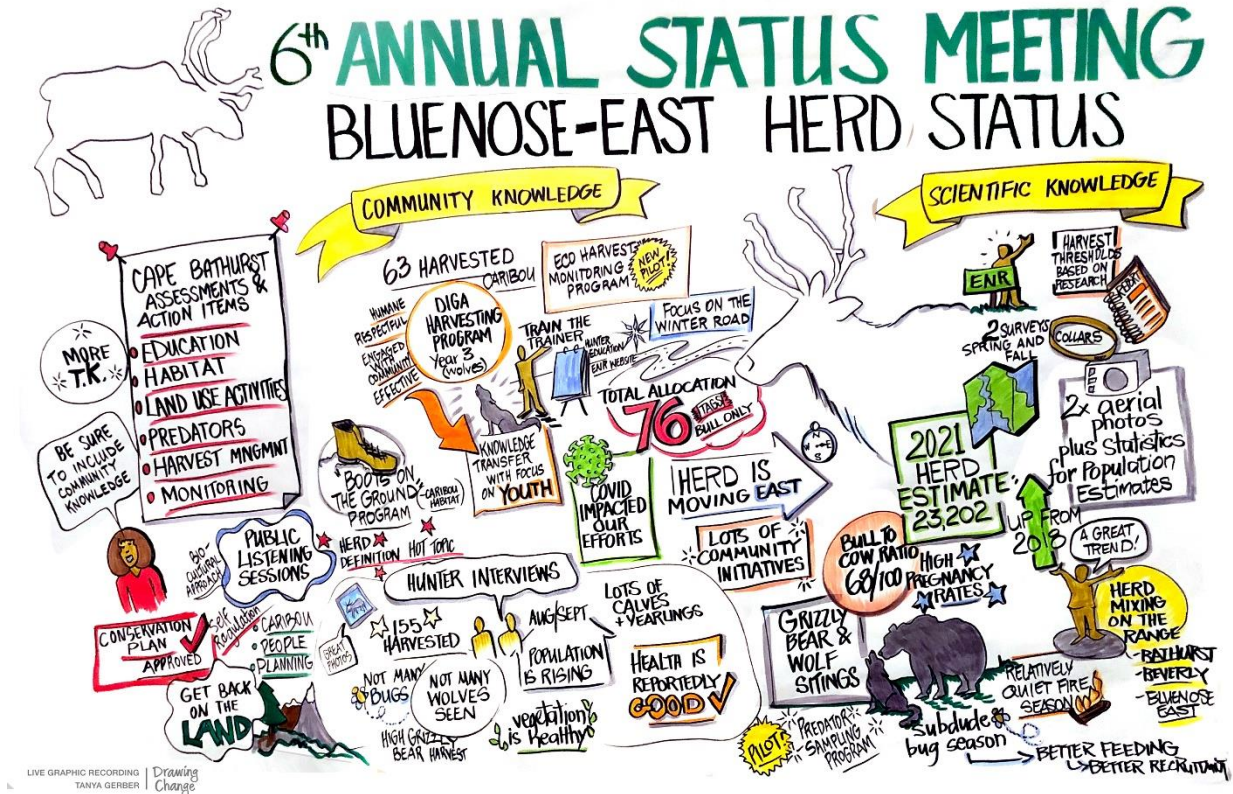


Figure 16: Graphic recording of the Bluenose-East Knowledge presentations. Credit: Tanya Gerber

Tł̓ch̓q Community Knowledge Presentation

Stephanie Behrens (Tł̓ch̓q Government)

Stephanie’s presentation focuses on the Sahtì ekwò monitoring program.

This year was the pilot year for the monitoring program, and they found that there was a lot of data that they would like to have collected that they were not able to get this year. They are hoping that the lessons learned in the pilot year will allow them to build out their program. For example, they hope to collect better data on body condition and health of the caribou. The main monitoring sites for the program are located on the Tibbit to Contoyto.

This year there was a lot of mixing between the Bathurst, Beverly, and Bluenose East herds. This meant that for a while, the mobile no hunting zone for the Bathurst caribou herd may have limited hunters’ access to the other herds. The zone covered a large area and did not move northwards until May.

Stephanie talked about how the monitoring program utilizes the expertise of their harvesters. Their monitors use this expertise and build on that knowledge through their own experience and ongoing training programs. For example, the monitors worked with ENR to become trainers in the hunter education program.

With respect to the harvest, all of the tags were allocated to the community of Wekweètì except for the 13 tags that were sent to Gamètì. Of the 76 tags that are allotted for the Tłı̨chǫ region, 63 were used. Each of these tags were used to hunt bulls only.

Stephanie explained that they are in the third year of their Dìga (wolf) harvest program that was jointly developed with ENR. The program was developed by following Tłı̨chǫ culture and protocols. They continually meet up with elders to discuss the programs with the goal of finding ways to improve the programs. Stephanie noted that Tłı̨chǫ people don't normally harvest Dìga as they are sacred and culturally important species. As such, the program had to develop strong protocols to follow. The Dìga harvest program has allowed them to have a transfer of knowledge from older harvesters to the youth that are just starting out. Over the years there has been a huge learning curve leading to the program being more successful each year.

At the meeting, Stephanie was unable to present data from the Ekwò Nàxoèhdee K'è: Boots on the Ground program as Covid-19 had led to disruptions in the monitoring program. This program, which had traditionally focused on the Bathurst Herd, was expanded to include monitoring sites in the Bluenose-East herd's range.

Kugluktuk Community Knowledge Presentation

Amanda Dumond (KAA), Larry Adjun (KAA)

Amanda Dumond was the main presenter of the Kugluktuk community knowledge presentation, the content of which was mostly covered in Table 15.

Amanda comment that the caribou were very healthy in both 2020 and 2021. When people were harvesting in May, the caribou had a lot of fat on them. The harvesters noted that they had not seen this in a long time.

Both the caribou and the grizzly bear populations appear to be doing well. Some of the bears were seen with twins and even triplets. In past years there were a lot of bears harvested, but this year this was not the case.

Sahtú Community Knowledge Presentation

Walter Bezha (DGG)

Walter Bezha reported that the people of Délı̨nę have not harvested many BNE caribou for a number of years. This year there was little that they could say regarding the criteria requested for assessing the status of the herd, as the caribou stayed far from the community again, as could be seen in the animation presented by ENR. Délı̨nę harvested 88 caribou, of which 40 were cows that were harvested in April.

Walter explained that the SRRB continues to use public listening sessions to engage with the communities. In 2020, the listening session in Colville Lake focused on Sahtú Ragóᓃa (Hunting Laws) and Sahtú approaches to wildlife harvesting. The upcoming session planned for Délı̨nę will explore the question, “What should people’s role be in maintaining healthy relationships between caribou and other wildlife?” Through this process, the SRRB is engaging in a biocultural approach to understanding people’s relations with caribou. They asked about the status of people and the status of caribou. This at the heart of the caribou conservation plan.

Walter emphasised that the communities have provided info on caribou, people, and planning. These show that that community conservation plans are viable and effective. As such, the TAH system should only be used when necessary. He explained that their community conservation plan was finally approved. In the past five years, they have been harvesting very few caribou. They harvest muskox, moose, some woodland caribou, and a huge amount of fish. Délı̨nę has been holding a lot of camps, as their government is having a big push to get people on the land, harvesting all sorts of food. The whole idea is to keep the harvest levels within the limits of the Taking Care of Caribou plan. “Respect is big time, hunt like your grandfathers and don’t forget about sharing.”

Discussion:

There was some discussion about why Délı̨nę comments on the Bluenose-East herd and Colville Lake comments on the Bluenose-West herd. It was explained that this division came out of the community engagement process for the TCOC management plan. Hans Lennie asked if the group could hear from Colville Lake on the status of the Bluenose-East herd. Richard Kochon responded that they have a lot of barren-ground and woodland caribou in the area around Colville Lake. As such, they don’t go into the traditional territories of other communities to hunt caribou. Richard highlighted that this reliance on the caribou closest to the community strengthens their relationship with the caribou.

“When there is lots of caribou they just run into camp. There is one big lake out there. It’s almost 20 km, it’s just round. Once in a while we go there, the caribou when they come they come to the northwest of that lake. It’s a wide trail. They just go for days and days. Once they travel at night, and I could see this big herd on the shore, one they went right by my skidoo and it touched my shoulders, sometimes it happens like that. They have to listen to us, too. Our grandfathers taught us lots about the caribou. I hope ENR listens to us and works with us. I noticed this, we had caribou all summer, we were shooting caribou, once we had handgames to teach kids and three caribou walked into our teepee and we had some fresh meat. Maybe our songs sound good so they came.” – Richard Kochon

Deb Simmons added that the communities have been working on initiatives like guardians programs. Both Délı̄nę and Colville have community conservation plans that have been approved. The SRRB have received has done two info requests. The responses to these info requests are available on the SRRB’s public registry. Deb noted that t there was an info request about what people have learned in the Covid experience with respect to caribou conservation. There were some interesting responses about supporting alternative harvests.

Presentation on Scientific Information
Jan Adamczewski (ENR)

Population size and rate of change

ENR’s most recent calving ground survey was conducted in June 2021. 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 2021 population estimate is 23,202 ±4,362 caribou (95% CI). Between 2015 and 2018 the herd has experienced a statistically significant decrease of 20% and has been estimated to be stable from 2018 to 2021. Survey results from earlier years are available in *Taking Care of Caribou* and in the ENR technical report.

Table 13: BNE population estimates (2000–2018).

Year	Estimate
2021	23,202 ±4,362
2018	19,294 ± 4,729
2015	38,592 ± 4,733
2013	68,295 ± 18,041
2010	102,704 ± 39,965

Productivity and recruitment

In October 2021, a composition survey was conducted. A calf-to-cow ratio of 49.6 calves to 100 cows was observed. There was a similar result in 2020 with a ratio of 51.7 calves to 100 cows observed)

In 2021, the proportion of breeding females is high at 92% of the caribou spotted during the June composition survey.

The fall cow:calf ratio going back to 2009, is trending higher in recent years and ENR is observing increases in collared cow survival rates. In a stable herd, cow survival rates are in the 82–85% range. In 2013–2015 the rate was at 71%. From 2015 to 2019 the survival rate increase to 85% and in 2020 it is estimated to be 89%.

Similarly, calf survival rates in a stable herd are 30–40:100. In 2019, ENR reported that while the average survival rate is in this range, at 37.9 ± 3.9:100, which may not have been high enough when coupled with the poor rates of survival for adults. In 2021, the calf to cow had ratio had risen to 46 ± 5.55:100.

Adult composition

This data was from the previous year.

The fall bull-to-cow ratio was high for the second year running, when compared to previous years (68.7 ± 8.05 bulls: 100 cows). The survey was timed to match the peak of the rut and a lot of prime bulls were sighted. Last year, the survey was a bit late, occurring in early November and it was suggested that this may have affected the ratio a bit. Seeing the high ratio second year may indicate a positive trend that is in line with the other changes in some of the other monitoring criteria. This high ratio may be an indication of a high survival rate.

Harvest levels

According to ENR, harvest levels have been very low in the North Slave Region for a number of years. For example, 15 bulls were taken in the winter of 2016–2017 and 10 bulls in 2017–2018. Recently, the number of bulls harvested has risen (74 in 2018-2019, 76 in 2019-2020 and 63 in 2020-2021) but is still well below the current limit of 193 bulls for Wek'èzhii. 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

As a response to the dramatic decline in caribou numbers and concerns for survival rates for both cows and calves, ENR has enacted a number of programs to help reduce pressure on the caribou. These include harvest restrictions, habitat management (such as aggressive wildfire mitigation) and now they are working on reducing predation pressure. Community members and co-management partners have made strong calls to do something.

The first step was to review predator control programs in adjacent regions and then a technical feasibility study was completed 2017. In 2019, the WRRB recommended increasing wolf management actions to the GNWT and TG. They submitted a joint proposal for 2020-2025 to enhance support for wolf harvesters and traditional economy.

ENR did Tłjchq trapper training, with an ongoing community-based program with the goal to increase the predator harvest levels and maximize the value of pelts.

The best available information shows that wolf population numbers rebound quickly. So, a 60-80% reduction for 5 years is needed to have any significant effect on the wolf population.

In 2018-2019, 60 wolves were taken in the region, 50 more were taken in 2019-2020. This year Nunavut harvesters could also get the NWT harvest incentive in their traditional areas in the region. In 2020-2021, 135 wolves were harvested.

During the 2021 composition surveys, there were very few predators sighted. Sightings during these surveys are highly variable, making it difficult to discern a trend. One consistent observation is that there are more grizzly bears sighted than wolves.

Other scientific information

- This year was below average for area burned in the Bluenose-East Range.
- Development within the range is very limited at 0.0152% of the range being directly impacted.
- There was a lot of mixing with the Bathurst and Beverly Herd in early 2021.

Table 14: Criteria used to assess Bluenose-East herd status in 2021¹⁴

Criteria	Community-Based Information ¹⁵	Scientific Information ¹⁶	Comments
Population size	Kugluktuk: <ul style="list-style-type: none"> • Small herds • Didn't observe many big herds • One herd of 3000-5000 • Sightings occur in August 	Estimated number adult caribou at least 1.5 year old in 2021: 23,202 (95%CI 19,247-27,971). Estimated number of breeding cows 12,863 (95%CI 10,816-15,298).	Estimated based on June 2021 calving ground photo survey and October composition surveys 2020 & 2021 to estimate sex ratio.

¹⁴ This table is populated with information presented to the ACCWM to assess herd status in 2020 and is adapted from the monitoring criteria table included in *Taking Care of Caribou*.

¹⁵ Bluenose-East caribou usually migrate through four settlement areas/regions in the Northwest Territories and into the western portion of the Kitikmeot Region, Nunavut. The herd may be harvested by nine communities: Wrigley, Norman Wells, Tulít'a, Déłjñę, Whatì, Gamètì, Behchokò, Paulatuk, and Kugluktuk. Déłjñę is the Sahtú community that primarily harvests ʔehdaɣla ʔekwé. Colville Lake is the Sahtú community that primarily harvests ʔədə. As such, the SRRB annually invites Déłjñę and Colville Lake to provide direct presentations of community knowledge to the ACCWM. As part of the SRRB's ongoing Public Listening Session series (2020-2024), publicly available community and scientific information about status of ʔehdaɣla ʔekwé (Caribou Point or Bluenose East caribou, ʔədə (barren-ground caribou in the K'áhsho Got'jñę District or Bluenose West caribou), people, and planning for 2021 can be found in Déłjñę and Colville responses to Information Requests, as well as Indigenous knowledge and science literature reviews. These are posted on the Déłjñę 2021 PLS Public Registry at www.srrb.nt.ca.

Of note are the following planning updates from Déłjñę and Colville Lake: As of October 2021, the Déłjñę Got'jñę Government has approved a revised version of the Belare Wíle Gots'é ʔekwé - Caribou for All Time plan that accounts for increased conservation concerns about ʔehdaɣla ʔekwé. Colville Lake has developed the Dehlá Got'jñę ʔədə Plan and Ts'jduweh ʔədə ʔeɣa (Ancient Caribou Plan). Expanded versions of these plans that address SRRB recommendations and the PLS "hot topics" for 2020 and 2021 (harvest regulation, predators and competitors) will be considered by the SRRB at the Déłjñę 2021 PLS in February, 2021.

¹⁶ All scientific information and comments were provided by Environment and Natural Resources (ENR) (GNWT) unless otherwise noted.

<p>Population trend and rate of change</p>	<p>Kugluktuk:</p> <ul style="list-style-type: none"> Trend is going back up from 4-5 years ago <p>40-50-year cycle</p>	<p>Estimated 19-20% annual rate of decrease 2015 to 2018. Estimated stable 2018-2021 based on female estimates.</p>	<p>Herd declined by half 2015-2018. Herd estimate 2021 shows a small increase over 2018 based on increased bull:cow ratios.</p>
<p>Productivity and recruitment</p>	<p>Kugluktuk:</p> <ul style="list-style-type: none"> Lots of calves. Lots of yearlings. <p>Some twins but not as much as 2020.</p>	<p>Percent breeding females June 2021 on calving grounds: 91.9% June 2019 87.5%; June 2018 83.0%.</p> <p>Pregnancy rate of captured cows 2020: 18/18 (100%). 2021: 26/30 (87%).</p> <p>Calf to cow ratios: Oct. 2020: 51.7 (95%CI 47.2-55.7) March 2021: 46.7 (95%CI 41.6-52.7) Oct. 2021: 49.6 (95%CI 45.6-53.0)</p>	<p>Improving pregnancy rates 2018-2021, very high 2021.</p> <p>Improved calf:cow ratios from 2018 to 2021; very good in 2020-2021.</p>
<p>Adult composition</p>	<p>Kugluktuk:</p> <ul style="list-style-type: none"> Good mix of cows and bulls. 	<p>Fall bull to cow ratio:</p> <p>Oct. 2020 63.3: 100 (95% CI 50.0-79.)</p> <p>Oct. 2021 68.7: 100 (95%CI 61.3-77.4)</p>	<p>Large increase in bull:cow ratios in 2020 and 2021 over previous years.</p> <p>Increasing herds in NWT early 1980s had ratios of 65-70 bulls: 100 cows.</p>
<p>Body condition and health</p>	<p>Kugluktuk:</p> <ul style="list-style-type: none"> Very healthy in 2021 and 2020 	<p>Body condition of captured caribou (for collars) reported very good 2021.</p>	

	<ul style="list-style-type: none"> • Spring harvests had lots of caribou with fat • Very few sick ones 		
Harvest levels	<p>Kugluktuk:</p> <ul style="list-style-type: none"> • July 1 to October 28/21 - 170 TAH - 155 harvested: 123 males/32 females • Lots of young bulls harvested <p>Déljñę (Sahtú):</p> <ul style="list-style-type: none"> • 88 were harvested (40 of which were cows). • DGG has a big push to get people back on the land for harvesting. • Through self-regulation/respect the idea is to keep the level of harvest within acceptable levels. <p>Tłchq:</p> <ul style="list-style-type: none"> • Total tags = 76 • Total harvest: 63 <p>The harvest occurred near Wekweeti and Gamètì. The animals harvested were all bulls.</p>	<p>Harvest low in N. Slave region 2018-2021</p> <p>Reported BNE winter harvest N Slave region NWT:</p> <p>2018-2019: 74 2019-2020: 76 2020-2021: 63</p>	<p>BNE caribou have been mostly in remote areas last 3 winters while in the NWT (in N Slave region); most N Slave hunters have harvested Beverly caribou in east on winter roads.</p> <p>DGG and DRRC has approved and update their community plan in Oct. with a threshold of 50 after which the community meets to talk about how to stop the harvest. There is also a threshold of 5 females which are use for ceremonial purposes.</p>
Predator populations	Kugluktuk:	June calving composition surveys:	Continuing trend of more grizzly bears than wolves

	<ul style="list-style-type: none"> High number of grizzly bears observed; lots with twins, some with triplets. Not too many wolves observed People are saying that the wolf hunting in other areas is helping increase the number of calves they are seeing the region. <p>Grizzly bear harvest was high last year.</p>	<p>2021: 6 grizzly bears, 0 wolves</p> <p>2019 14 grizzly bears, 3 wolves</p> <p>Wolf management 2020-2021 for BNE and Bathurst herds. 54 wolves removed 2020 BNE range; 135 wolves removed 2021 from mixed BNE/Bathurst/Beverly herds.</p>	<p>seen on BNE calving grounds 2010-2018.</p> <p>Incidental sightings of predators on caribou surveys tend to have high variability.</p>
Range and movement patterns	<p>Kugluktuk: They were closer to the community in the springtime than past few years.</p>	<p>Fidelity of BNE collared cows to calving ground 2008-2018: 97-98%. Fidelity 2018-2021: 98.5%.</p>	<p>BNE has mixed with Bathurst in winter in some years; strong BNE fidelity to calving and summer ranges.</p>
Environment and habitat	<p>Kugluktuk: Very healthy vegetation in the last two years. Not as many warble flies this year. Lots of birds and small insects</p>	<p>Average Fire Year NWT: 500,000 Ha burned (total). 2019: 100,000 Ha 2020: 21,000 Ha 2021: 145,000 Ha</p>	<p>Last 3 years below average total area burned in NWT.</p>
Human disturbance	<p>Kugluktuk: Minimal; no industry/exploration.</p>	<p>Limited, no active mines.</p>	<p>Tundra Copper exploration on calving grounds – not active last 5 years.</p> <p>Cumulative effects project underway.</p>

<p>Competitors</p>	<p>Kugluktuk:</p> <ul style="list-style-type: none"> • High number of moose close to Kugluktuk • Muskox had good number of calves <p>Délıne (Sahtú):</p> <p>There are concerns about the impacts of muskoxen in making caribou move away, and climate change.</p>		
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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 Nations¹⁷
- 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
- Sahtú Renewable Resources Board
- Tłıchq Government
- Tuktut Nogait National Park Management Board
- Wek'èezhì Renewable Resources Board
- Wildlife Management Advisory Council (NWT)

¹⁷ 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 toward 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 2020 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.