



MAY 18 2017

Mackenzie Valley Environmental Impact Review Board
c/o Ms. JoAnne Deneron
@ jdeneron@reviewboard.ca

Dear Ms. Deneron:

Dominion Diamond Ekati Corporation's Jay Project Environmental Assessment (EA1314-01) - Measure 6-6: Timely Completion of Caribou Management Plans

The Government of the Northwest Territories (GNWT), led by the Department of Environment and Natural Resources (ENR), was assigned Measure 6-6 by the Mackenzie Valley Environmental Impact Review Board (Review Board) in the *Report of Environmental Assessment and Reasons for Decision* (Report of EA) for Dominion Diamond Ekati Corporation's Jay Project (EA1314-01). Measure 6-6 requires the GNWT, within one year of Ministerial approval of the Report of EA, to investigate and report on the causes for the current population change in the Bathurst caribou herd, complete and implement an interim management plan for the Bathurst caribou herd and implement an interim herd recovery strategy towards a sustainable and ongoing Aboriginal harvest.

ENR's response to Measure 6-6 is attached. While Measure 6-6 is directed at the GNWT it is important to note that management of barren-ground caribou in the Northwest Territories is a collaborative process, with decision-making shared by co-management boards, Aboriginal governments, the GNWT, and agencies in neighbouring jurisdictions. In the attached document ENR has, in response to Measure 6-6, outlined an *interim* strategy for the recovery of the Bathurst caribou herd; however this cannot be viewed as an official interim Bathurst caribou recovery strategy because co-management partners have not been involved in the drafting of ENR's response to Measure 6-6. The GNWT will continue to work with our co-management partners on matters related to Bathurst caribou and will update the Review Board, where appropriate, as progress is made.

For the information of the Review Board, ENR has also included in the attached its consideration of the Review Board's suggestion related to caribou management plans.

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Please contact Ms. Andrea Patenaude, Wildlife Biologist, at (867) 767-9237, ext. 53228 or andrea_patenaude@gov.nt.ca if you have any questions.

Sincerely,


for

Dr. Joe Dragon
Deputy Minister
Environment and Natural Resources

Attachment

c. Ms. Claudine Lee, Head of Environment and Communities
Dominion Diamond Ekati Corporation

Ms. April Hayward, Superintendent – Environment
Dominion Diamond Ekati Corporation

Mr. Mark Cliffe-Phillips, Executive Director
Mackenzie Valley Environmental Impact Review Board

Ms. Jaida Ohokannoak, Chairperson
Independent Environmental Monitoring Agency

Dr. Brett Elkin, Director
Wildlife Division
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Mr. Joel Holder, Director
Conservation, Assessment and Monitoring Division
Environment and Natural Resources

Ms. Lorraine Seale, Director
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Lands

GNWT-ENR Response to Measure 6-6: Timely Completion of Caribou Management Plans

May 19, 2017

Measure 6-6 from the *Report of Environmental Assessment and Reasons for Decision* (Report of EA)¹ for Dominion Diamond Ekati Corporation's Jay Project reads:

To mitigate cumulative significant impacts from the Jay Project and other human activities on the Bathurst caribou herd, within one year of Ministerial approval of this Report of EA, the GNWT will:

- *investigate and report on the causes for the current population change*
- *complete and implement an interim management plan for the Bathurst caribou herd*
- *implement an interim herd recovery strategy towards a sustainable and ongoing Aboriginal harvest*

The Mackenzie Valley Environmental Impact Review Board (Review Board) also made the following suggestion² in relation to caribou management plans:

GNWT should work towards producing interim thresholds for developments and other human activities within the range of the Bathurst caribou herd.

A) Investigate and report on the causes for the current population change

The Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR) continues to work collaboratively with co-management and research partners to investigate and understand the causes of population change in the Bathurst herd.

Recent and on-going studies: ENR has continued to monitor the Bathurst caribou herd's status through population surveys every 3 years, other monitoring and analyses of demography (e.g. annual reconnaissance surveys for the number of breeding females, overwinter calf survival, pregnancy rates, bull:cow ratios, collar deployment and maintenance etc.), and ecological studies and analyses, particularly since the June 2009 calving photo-survey demonstrated a major decline in 3 years. A number of studies have contributed to understanding factors that may have contributed to the herd's large decline in the 2000s. Some key studies are identified below.

The survey report for the June 2015 Bathurst photo survey (Boulanger et al 2017) included an evaluation of the herd's demographics in the most recent survey interval (2012-2015) and concluded that continued low cow survival since 2008-2009 and low calf productivity and survival since 2011 in large part accounted for the recent decline. The harvest up to 2009 was a major contributing factor in the herd's decline (Adamczewski et al. 2009, Boulanger et al. 2011), particularly 2006-2009, but was much lower and had a correspondingly much reduced role in the herd's trend after 2010 (Boulanger et al. 2014, 2017).

¹ Mackenzie Valley Environmental Impact Review Board, February 1, 2016

² The Review Board did not number the suggestions in the Report of EA

M. Klaczek completed a Master of Science project on the denning ecology of wolves on the Bathurst summer range in 2015 (Klaczek 2015) and demonstrated that wolf abundance and productivity have declined significantly on the herd's range; Klaczek et al. (2016) suggested that wolf density had declined to about 2.5 wolves/1000 km² by 2014. Prior modeling suggests that wolf density was approximately 7.0 wolves/1000 km² during periods of high caribou population levels (1996-2000) and 4.2 wolves/1000 km² during medium caribou population levels (2002-2006). Although wolf numbers associated with the Bathurst herd are likely much lower than during the herd's high numbers in the 1980s and 1990s, they may still have an important limiting effect on the herd at low numbers.

Weather affects caribou at all times of year. MERRA, A NASA-based database of remote sensing-derived environmental variables, is available for all arctic migratory caribou and reindeer populations (Russell et al. 2013) from 1979 to present, and is updated annually. It includes measures of snow depth and other snow cover variables and indices such as growing-degree days, a summer drought index and a warble fly index. In 2016 ENR contracted D. Russell for an initial report on environmental variables that may influence the ranges of the Bathurst and Bluenose-East herd ranges (Russell and Gunn 2016), and in 2016-2017 contracted D. Russell for a more comprehensive report that will include MERRA data for all NWT migratory caribou herd ranges along with an analysis of how those variables are related to demographic indicators in a number of herds with strong demographic monitoring data-sets. A report on these analyses is expected by June 2017.

ENR contracted J. Boulanger in 2016-2017 to carry out an updated demographic analysis for the Bathurst and Bluenose-East herds using an OLS (Ordinary Least Squares) model (see Boulanger et al. 2011 for details) and has received a draft report (Boulanger 2017) currently under review. This analysis included an analysis of spatial and temporal patterns in mortality of collared caribou and an evaluation of MERRA environmental trend data from D. Russell and their relationships with the herds' demographic indicators.

An earlier study (Chen et al. 2014) suggested that an index of summer range productivity on the Bathurst range was correlated with late-winter calf: cow ratios, with the suggested mechanism being low pregnancy rates and low calf productivity resulting from poor summer feeding conditions. The highest drought index on record (Russell and Gunn 2016) on the Bathurst range in 2014 was followed by a low percentage of breeding females on the June 2015 calving grounds (Boulanger et al. 2017).

Integration of monitoring and research on Bathurst herd demography and decline: ENR in 2009 issued a comprehensive report on the Bathurst herd's decline to that point, with the emphasis on 2006-2009 (Adamczewski et al. 2009). An updated version of this report is planned for 2017-2018; this will update data sets in the 2009 report and include the results from studies and monitoring summarized above. The emphasis will be on linking a range of factors to demographic variables (cow survival rate, pregnancy rate, and calf survival) known to influence population trend in large herbivores (Gaillard et al. 2000) and caribou (Crête et al. 1996, Boulanger et al. 2011).

B) Complete and implement an interim management plan for the Bathurst caribou herd.

In response to the Bathurst herd's large-scale decline, particularly in the period from 2006 to 2009, ENR has worked closely with its co-management partners to ensure a comprehensive and coordinated approach to management and conservation of the herd. Management approaches for the herd within the NWT have been guided by a series of detailed management proposals from the GNWT and the Tłı̄chǫ Government (TG) that were submitted to the Wek'èezhii Renewable Resources Board (WRRB) in 2009, 2010, 2014 and 2015. The WRRB has issued a series of reports, recommendations and determinations in response to these proposals. These documents have focused primarily on harvest management, predators and monitoring.

[*The Government of the Northwest Territories \(GNWT\) and Tłı̄chǫ Government \(TG\) Joint Proposal on Caribou Management Actions for the Bathurst Herd: 2016-2019*](#) (Joint Proposal) constitutes the core of a current interim management plan for the herd. The Joint Proposal was considered during the WRRB's 2016 Bathurst Caribou Proceeding, and the WRRB provided a range of determinations and recommendations released in two separate reports (WRRB Reasons for Decision Final Report, [Part A](#) and [Part B](#)). The Joint Proposal and the two final reports constitute the core of an interim management plan.

This interim management plan (as guided by the Joint Proposal) continues and enhances the management and monitoring recommendations for barren-ground caribou in Wek'èezhii that were described in the previous joint proposal from May 2010. The overall goal over the period of November 2016 to November 2019 is to halt the Bathurst herd's decline, and promote stabilization and recovery of the herd. Over the longer-term, an important management goal is to promote recovery of the herd so that sustainable harvesting that addresses community needs and the exercise of the right to harvest will be possible. The Joint Proposal includes management actions that focus on improving adult female survival through harvest management and by implementing a community-based wolf harvest program to reduce caribou mortality on the Bathurst winter range. Increased wolf harvest on the Bathurst range was being also promoted via collaborative programs with Aboriginal organizations. The Joint Proposal also outlines biological monitoring of the herd similar to monitoring conducted between 2010 and 2015. In addition, annual efforts are made to maintain a total of 50 collars on Bathurst caribou (30 collars on cows and 20 collars on bulls) in order to support herd monitoring objectives. The 3 year timeframe for the Joint Proposal is based on the understanding that management actions will be adapted as new information becomes available (e.g. changes observed in reconnaissance calving ground surveys scheduled for June of 2016 and 2017), and that efforts are underway to develop a longer-term management plan as required under the Tłı̄chǫ Agreement. For example, the calving ground photographic survey planned for June 2018 may result in a new joint proposal in 2018, potentially leading to revised recommendations in 2019.

In addition, work continues on a collaborative Bathurst Caribou Range Plan for all of the herd's range; this plan is scheduled for completion in March 2018. Due to concern over pressures on the Bathurst herd, this process was started to develop an approach to managing human and natural disturbance, such as industrial development and wildland fire, across the annual range of the Bathurst herd. Through the planning process, a working group of planning partners including governments, AGOs, industry partners, and co-management partners. This plan will be a key piece address cumulative effects. Furthermore, a feasibility assessment for wolf management on the Bathurst range was also recommended by the WRRB as part of the 2016 proceeding described

above, and is scheduled for completion in 2017. Together, these documents and plans are also an important part of the interim management plan for the Bathurst herd.

C) Interim Strategy for the Recovery of the Bathurst Caribou Herd

Introduction

In its February 2016 Report of EA for the Jay Project, the Review Board directed the GNWT to implement an interim Bathurst herd recovery strategy towards a sustainable and ongoing Aboriginal harvest within a year of acceptance by the Responsible Ministers.

Since the release of the Report of EA, barren-ground caribou have been assessed as at risk in both Canada and the NWT. Barren-ground caribou were assessed as Threatened in Canada by the Committee on the Status of Endangered Wildlife In Canada (COSEWIC) in November 2016 and in the NWT by the Species at Risk Committee in April 2017. These assessments trigger processes under both territorial and federal legislation to consider addition of barren-ground caribou to the respective legal lists in the species at risk legislation. Federally, if barren-ground caribou are listed as threatened in Schedule 1 of the *Species at Risk Act*, a recovery strategy must be produced by the federal government within two years as per section 42 of the federal *Species at Risk Act*. Similarly, under section 60 of the *Species at Risk Act (NWT)*, a recovery strategy must be completed for threatened species within two years after the species is added to the NWT List of Species at Risk.

In the context of legislated species-at-risk assessment, listing and planning processes, a recovery strategy is a very specific document that recommends objectives for the conservation and recovery of a threatened species. It describes the threats to the species and habitat and identifies what needs to be done to arrest or reverse the decline of a species. It also recommends approaches to achieve those objectives. A recovery strategy prepared under federal legislation must also include an identification of the species critical habitat and studies to determine critical habitat. Under the *Species at Risk (NWT) Act*, the Minister of Environment and Natural Resources is ultimately responsible for the preparation and completion of recovery strategies for listed threatened species; however, this is done in cooperation with and according to guidelines produced by the Conference of Management Authorities. As such, the process for recovery planning of species at risk is a collaborative process in which co-management partners are fully engaged. The process must follow specific steps and timelines as laid out in the *Species at Risk Act (NWT)*, including Aboriginal consultation and public engagement at several steps in the process.

Because Measure 6-6 of the Report of EA for the Jay Project seeks an interim herd recovery strategy for the Bathurst herd, a single population of barren-ground caribou, GNWT interprets the requirement outlined in Measure 6.6 to be distinct from the formal recovery planning process that is legislatively required under both the federal *Species at Risk Act* and the *Species at Risk Act (NWT)* for listed species at risk. Given that the wildlife management context in the NWT is one of co-management, most processes and initiatives related to the management of the Bathurst herd are collaborative in nature. Given that the timeline dictated within the Measure was not sufficient to accommodate a full public review of an entirely new recovery planning initiative, and in deference to the already heavy workload experienced by all co-management partners on ongoing

initiatives and processes related to conservation and management of the Bathurst herd, this interim strategy draws primarily on existing processes and initiatives underway to address the status of the Bathurst herd. Similarly, while a range of partners have a role to play in recovery of the Bathurst herd, this strategy focuses on objectives in which GNWT has either a primary or main facilitative role. As an interim strategy this document describes the GNWT's approach to recovery of the Bathurst herd until formal recovery planning pursuant to species at risk legislation triggered and completed, and is subject to change based on outcomes of existing co-management processes and other collaborative initiatives identified herein.

Interim Recovery Goals:

Drawing on the requirement of Measure 6-6 and vision of the Draft Barren-ground Management Strategy the goals of the interim herd recovery strategy for the Bathurst herd are to:

- a) to reverse the decline of the Bathurst herd;
- b) to promote conditions that support numbers of the Bathurst herd population within the natural range of variation;
- c) to restore a sustainable and ongoing Aboriginal harvest.

Interim Recovery Strategies:

- #1. *Implement the Tłı̨chǫ Government and [GNWT's Joint Proposal on Caribou Management Actions for Bathurst Caribou 2016-2019](#), along with recommendations from the WRRB ([Part A](#) and [Part B](#)).* Key actions outlined in the Joint Proposal included closing all harvest on Bathurst caribou in the NWT, collaboration on community harvest of predators, conducting a feasibility study on approaches to predator management and continued biological monitoring of the Bathurst herd. Careful evaluation of the impact of the actions undertaken through the Joint Proposal have the potential to inform development of a long-term plan through the process of adaptive management.
- #2. *Establish a long term mechanism for management of the Bathurst herd.* The Tłı̨chǫ Agreement requires an overall management process for the Bathurst herd, and in 2017 the collaborative Bathurst Caribou Advisory Committee (BCAC)³, finalized its Terms of Reference and agreed to develop an overall management plan for the herd based on updating the 2004 plan. Draft objectives of the BCAC include:
 - To learn from and adaptively manage the physical, biological and cultural relationship between people and caribou.

³ Participating organizations to date include GNWT, Government of Nunavut, Tłı̨chǫ Government, WRRB, Kugluktuk Angoniatit Association Hunters and Trapper Organization, Kitikmeot Regional Wildlife Board, Umingmaktok Hunters and Trappers Organization (Bay Chimo), Burnside Hunters and Trappers Organization (Bathurst Inlet), Nunavut Tunngavik Incorporated; Nunavut Tunngavik Incorporated, Athabasca Denesuline Né Né Land Corporation; Yellowknives Dene First Nation; Łutsel K'e Dene First Nation; NWT Métis Nation; North Slave Métis Alliance; Salt River First Nation; and Deninu Kue First Nation

- To cooperatively provide advice for the management of the Bathurst caribou herd and its habitat to strive to ensure a healthy, viable herd capable of fulfilling harvesting needs.

It is anticipated that this group will meet one to four times annually to consider and advise on matters related to the conservation and management of the Bathurst herd.

#3. *Complete and implement a long-term management plan for the Bathurst herd to promote recovery of the Bathurst herd and conserve habitat.* There have been efforts for a number of years to develop an overall management plan for the Bathurst herd, and a plan developed in collaboration with multiple partners was completed in 2004. The 2004 plan included a set of monitoring and management actions to consider depending on whether the herd is at high or increasing, decreasing or low numbers. That plan, however, was not signed by all participating groups. The task of reviewing, revising and recommending a Bathurst Caribou Management Plan to responsible management authorities, based in part on elements of the 2004 plan, is currently one of the responsibilities listed in the Terms of Reference for the BCAC.

#4. *Complete and implement a Bathurst Caribou Range Plan to maintain the herd's annual range in a resilient landscape condition.* The Bathurst Caribou Range Plan: Interim Discussion Document was released for public review in December 2016, and proposes options for achieving the following four objectives:

- Maintain the amount of human disturbance below threshold levels
- Maintain connectivity between seasonal ranges
- Maintain the integrity of sensitive habitat
- Manage human access

The discussion document proposes an array of tools and approaches to meet these objectives including a cumulative disturbance framework, protection/conservation of key habitats and habitat features, land use activity guidance and access management and planning. A final Range Plan is expected to be released in 2018.

#5. *Complete and implement the Barren-ground Caribou Management Strategy for 2017-2021.* A Barren-ground Caribou Management Strategy for the NWT 2011-2015 (*Caribou Forever – Our Heritage, Our Responsibility*) provided an overarching strategy for barren-ground caribou management in the NWT, and an updated version of this strategy is being drafted and will be released for public review in fall 2017. As the document that outlines GNWT's overarching approach to the monitoring and management of barren-ground caribou, the Barren-ground Caribou Management Strategy for 2017-2021 will provide guidance on management and conservation actions for all NWT caribou herds including the Bathurst, and will support specific management actions included in herd-specific management plans.

#6. *Work with Aboriginal governments and communities to support responsible harvest management, compliance and monitoring.* While harvest has been closed on the NWT portion of the Bathurst range since 2014-2015 for conservation reasons, stabilization and recovery of the Bathurst herd requires monitoring to ensure that agreed-upon harvest limits and allocation of harvest among user groups are adhered to. As such, community-

based monitors have a key role to play in ensuring that harvest management objectives are met. Community-based monitoring programs in Tłı̄ch̄ communities, Łutsel K'e and others have also been useful in monitoring caribou harvest and condition when the harvest was open. ENR will continue to collaborate with communities on the range of the Bathurst herd and support harvest management, compliance and monitoring.

- #7. *Participate in processes and initiatives in Nunavut that have implications for management and conservation of the Bathurst herd, and facilitate participation by Nunavut representatives in processes in the NWT.* As a large proportion of the Bathurst range is in Nunavut, it is essential to continue work with Nunavut communities and wildlife management authorities including the Government of Nunavut, on a consistent approach to herd management. For example, the Government of Nunavut has been an integral part of the Bathurst Caribou Range Planning process. Similarly, ENR has been an active participant in such processes as the Nunavut Impact Review Board's environmental assessment of the Sabina's Back River Project, the Nunavut Wildlife Management Board's public hearing to consider a total allowable harvest for Bathurst caribou, and the Nunavut Planning Commission's land use planning process. Establishing trans-boundary agreements and fostering collaborative relationships are necessary for consistency of knowledge and management.
- #8 *Ensure resources are in place to continue monitoring the Bathurst herd population.* Management decisions must be made based on the best available information. Biological monitoring of the Bathurst herd has been, and continues to be, a priority programming area within ENR. Management actions related to harvest and land uses are typically linked to thresholds in herd size and trend outlined in management plans or range plans. Therefore, ensuring current, accurate information on Bathurst herd population and trend is critical to assessing management actions to take. Biological monitoring to be conducted from 2016-2019, is outlined in the 2016 Joint Proposal for Bathurst Caribou, and includes calving ground photographic surveys, pregnancy rate estimates, cow mortality estimates and estimates of bull:cow and calf:cow ratios every three years, annual composition surveys and maintenance of 50 GPS collars on the herd.
- #9. *Support studies that improve our understanding of the effect of environmental conditions, predators, disease and other key factors on the Bathurst herd.* ENR invests substantial resources each year on demographic monitoring; however, this provides only a partial understanding of factors that drive the herd's dynamics. As the GNWT does not have a significant capacity for in-depth research, resources should be directed towards increased partnerships with academic researchers, including graduate students, and towards cost-sharing of research projects. ENR will continue to support ongoing monitoring and research on Bathurst herd ecology through such avenues as:
- Funding scientific and traditional knowledge research through the Cumulative Impact Monitoring Program's Barren-ground [Caribou Blueprint](#)
 - Hosting workshops to support regional monitoring and research collaboration
 - Collaborations of staff on research projects such as those outlined in Part A of ENR's response to Jay Measure 6-6 (this document)
 - GNWT Knowledge Agenda

- #10 *Periodically update cumulative effects and population models using current information.* Models are useful tools to integrate several types of information to look at relationships between multiple different factors that affect the Bathurst herd. ENR has used models such as the Ordinary Least Squares (OLS) model to integrate demographic information, to improve understanding of declines, to assess cumulative impacts on the herd and to assess likely impacts of harvest levels and sex ratio on the Bathurst herd (see Boulanger 2017, Boulanger and Adamczewski 2016, Boulanger et al. 2011, 2014, 2017). Results from modeling work support technical advice and recommendations made by ENR into collaborative and co-management process. Keeping this information updated is necessary to ensure the most current information is available to support management decisions.
- #11 *Complete a feasibility assessment on wolf management options and provide the assessment to management authorities.* In 2016-2017 a collaborative working group led by the WRRB and ENR is developing a feasibility assessment for wolf reduction options on the Bathurst herd's range. This assessment will be used by management authorities to consider possible actions in the range of the Bathurst or other herds and recommend actions to develop better information on wolf abundance, predator-prey relations and the importance of predators in limiting caribou recovery.
- #12 *Complete guidelines to support preparation of Wildlife Management and Monitoring Plans that outline mitigation and appropriate monitoring to minimize impacts to caribou from industrial development.* ENR will continue to work with the Wildlife Act Working Group and other stakeholders through public engagement and Aboriginal consultation to develop guidelines, and eventually regulations, to support section 95 of the *Wildlife Act*.
- #13 *Enhance, develop and implement public and hunter education programs to share information on caribou conservation and promote hunter excellence, including respect for traditional laws.* ENR will work with Aboriginal governments and organizations as well as communities across the NWT to support public education programs, school and outdoor education programs and on-the-land programs for elders and youth, and updated hunter education courses and resource materials.
- #14 *Participate in key environmental assessment processes of projects proposed on the range of the Bathurst in NWT & Nunavut.* ENR will continue to provide expert advice and recommendations in regulatory forums for development projects to assist in assessing impacts on Bathurst caribou at both the project-scale and the range scale. ENR will continue to ensure that measures and recommendations directed at GNWT by the Review Board related to mitigating significant impacts on the Bathurst herd are met.
- #15 *Participate in initiatives and processes such as land use planning that consider conservation of key caribou habitats on the Bathurst Range.* ENR will continue to participate and provide expert advice in regional land use planning and seek opportunities to integrate wildlife management approaches into planning.

SUGGESTION: GNWT should work towards producing interim thresholds for developments and other human activities within the range of the Bathurst caribou herd.

Through the Bathurst Caribou Range Planning process, the GNWT is currently engaging the public on the [Bathurst Caribou Range Plan Interim Discussion Document](#) released in December 2016. The document presents important considerations and questions for guiding community and decision-maker engagement; including the use of a cumulative disturbance framework based on tiered disturbance thresholds and corresponding management responses that can be implemented to manage overall disturbance levels across the Bathurst caribou range. The focus in early 2017 has been on engaging with communities, governments, co-management boards, industry and other interested parties on the current content and direction of the Bathurst Caribou Range Plan. The Bathurst Caribou Range Plan Working Group and Project Team will review and consider the input provided during that process, and address outstanding range planning topics. A full draft Bathurst Caribou Range Plan with management recommendations will be developed by the Working Group in the fall of 2017, after which a second round of community and decision-maker engagement will occur on this draft plan. A final Bathurst Caribou Range Plan is expected to be released in 2018.

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