

# Progress Report on the Management of Dolphin and Union Caribou (*Rangifer tarandus groenlandicus x pearyi*)

in the Northwest Territories and Nunavut (2018-2022)



## ***SPECIES AT RISK (NWT) ACT***

Progress Report and Review Series 2023

For copies of the progress report, management plan, or for additional information on Northwest Territories (NWT) species at risk, please visit the [NWT Species at Risk website](http://www.nwt-speciesatrisk.ca) ([www.nwt-speciesatrisk.ca](http://www.nwt-speciesatrisk.ca)).

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**Cover photo:** Dolphin and Union caribou, Xavier Fernandez Aguilar

**What is the *Species at Risk (NWT) Act*?**

The *Species at Risk (NWT) Act* (the Act) provides a process to identify, protect and recover species at risk in the NWT. The Act applies to any wild animal, plant or other species for which the Government of the Northwest Territories has management authority. It applies everywhere in the NWT, on both public and private lands, including private lands owned under a land claims agreement.

**What is the Conference of Management Authorities?**

The Conference of Management Authorities (CMA) was established under the Act and is made up of the wildlife co-management boards and governments in the Northwest Territories (NWT) that share responsibility for the management of species at risk in the NWT (referred to as 'Management Authorities'). The purpose of the CMA is to build consensus among Management Authorities on the conservation of species at risk and to provide direction, coordination and leadership with respect to the assessment, listing, conservation and recovery of species at risk while respecting the roles and responsibilities of Management Authorities under land claim and self-government agreements. The CMA develops consensus agreements on listing species at risk, conservation measures, management plans and recovery strategies. Only Management Authorities that have jurisdiction for a species are involved in making decisions.

**What is a species of Special Concern?**

Under the Act, a species of Special Concern is a species that may become Threatened or Endangered in the Northwest Territories because of a combination of biological characteristics and identified threats.

**What is a management plan?**

Under the Act, a management plan is a document that recommends objectives for the conservation of a species of Special Concern. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences to the species and its habitat. Under the Act, a management plan must be completed for a species of Special Concern within two years of the species being added to the NWT List of Species at Risk.

**What is a progress report?**

Under the Act, a progress report is required every five years, or sooner, to report on the actions undertaken to implement a management plan or recovery strategy and on the progress made toward meeting its objectives.

## PREFACE

The [Management Plan for the Dolphin and Union Caribou \(\*Rangifer tarandus groenlandicus\* x \*pearyi\*\) in the Northwest Territories and Nunavut](#) (management plan) describes the management goal and objectives for Dolphin and Union caribou and recommends approaches to achieve those objectives. The plan was developed collaboratively by co-management partners to meet the requirements for a Northwest Territories management plan under the *Species at Risk (NWT) Act* as well as a national management plan under the federal *Species at Risk Act*, and to meet management needs in Nunavut.

The management plan recognizes the shared responsibilities for management under land claim agreements and species at risk legislation and respects co-management processes legislated by the Inuvialuit Final Agreement and the Nunavut Land Claims Agreement. The plan gives equal consideration to *Inuit Qaujimajatuqangit*, Traditional Knowledge, local knowledge and scientific knowledge.

Under subsection 73(1) of the *Species at Risk (NWT) Act* and Section 8 of the management plan (Next Steps), a progress report must be completed every five years on the actions undertaken to implement the management plan and on the progress towards meeting its objectives.

This document is a report on progress towards the management of Dolphin and Union caribou in the Northwest Territories (NWT) and Nunavut from 2018 to 2022. It describes the actions taken by co-management partners in both the NWT and Nunavut to implement the *Management Plan for the Dolphin and Union Caribou (*Rangifer tarandus groenlandicus* x *pearyi*) in the Northwest Territories and Nunavut* and meets the legislative requirement for a progress report under the *Species at Risk (NWT) Act*.

## ACKNOWLEDGMENTS

This progress report was developed collaboratively by partners involved in the management of Dolphin and Union caribou in the Northwest Territories and Nunavut: Wildlife Management Advisory Council (NWT), Government of the Northwest Territories (GNWT), Inuvialuit Game Council, Government of Nunavut, Nunavut Wildlife Management Board, Kitikmeot Regional Wildlife Board, and the Government of Canada (Environment and Climate Change Canada) in cooperation with the Kugluktuk Angoniatit Association (KAA), Ekaluktutiak Hunters and Trappers Organization (HTO) and Olokhaktomiut Hunters and Trappers Committee (HTC). Omingmaktok HTO, Burnside HTO, Paulatuk HTC, Nunavut Tunngavik Inc. and Kitikmeot Inuit Association were also invited to submit comments on drafts of the report.

Preparation of this progress report was funded by the GNWT Department of Environment and Climate Change. The management partners would like to thank the Species at Risk Secretariat for addressing the requirements of a progress report under the *Species at Risk (NWT) Act*. The principal preparers of this progress report were Joslyn Oosenbrug (Species at Risk Implementation Specialist) and Michele Grabke (Species at Risk Implementation Supervisor).

Background information in this document is summarized from the 2023 [\*Species Status Report for Dolphin and Union Caribou \(\*Rangifer tarandus groenlandicus\* x \*pearyi\*\) in the Northwest Territories\*](#) (SARC 2023). To avoid repetitive citations, it can be assumed that the information was taken from this report unless another reference is given. Management partners are grateful to the Northwest Territories [\*Species at Risk Committee\*](#) for its work on this detailed assessment of the status of Dolphin and Union caribou in the Northwest Territories.

## ACRONYMS

CBMP	Community-based monitoring program
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CMA	Conference of Management Authorities
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans
DU	Dolphin and Union
ECC (or GNWT-ECC)	Department of Environment and Climate Change, Government of the Northwest Territories
ECCC	Environment and Climate Change Canada
EHTO	Ekaluktutiak Hunters and Trappers Organization
EIRB	Environmental Impact Review Board
EISC	Environmental Impact Screening Committee
ENR	Department of Environment and Natural Resources, Government of the Northwest Territories (now Environment and Climate Change)
ENV	Department of Environment, Government of Nunavut
FJMC	Fisheries Joint Management Committee
GN	Government of Nunavut
GNWT	Government of the Northwest Territories
HTC	Hunters and Trappers Committee
HTO	Hunters and Trappers Organization
IGC	Inuvialuit Game Council
ILA	Inuvialuit Land Administration
IQ	Inuit Qaujimajatuqangit
IRC	Inuvialuit Regional Corporation
ISR	Inuvialuit Settlement Region
ITI	Department of Industry, Tourism and Investment, Government of the Northwest Territories
JS	Joint Secretariat
KAA	Kugluktuk Angoniatit Association
KHTO	Kugluktuk Hunters and Trappers Organization
KIA	Kitikmeot Inuit Association
KRWB	Kitikmeot Regional Wildlife Board
MOU	Memorandum of Understanding
NCP	Northern Contaminants Program

NGO	Non-governmental Organization
NOTMAR	Notice to Mariners
NTI	Nunavut Tunngavik Inc.
NU	Nunavut
NWT	Northwest Territories
NWT CIMP	Northwest Territories Cumulative Impact Monitoring Program
OHTC	Olokhaktomiut Hunters and Trappers Committee
SARC	Species at Risk Committee
TAH	Total Allowable Harvest
TC	Transport Canada
TK	Traditional Knowledge
WMAC (NWT)	Wildlife Management Advisory Council (Northwest Territories)

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# PROGRESS REPORT

## 1. INTRODUCTION

Dolphin and Union caribou play an essential role in the lives of Inuit and Inuvialuit. They are highly valued from a spiritual, economic, cultural and harvest perspective. Dolphin and Union caribou are also considered a species at risk under the federal *Species at Risk Act* (SARA) and the Government of the Northwest Territories *Species at Risk* (NWT) Act.

The [\*Management Plan for the Dolphin and Union Caribou \(Rangifer tarandus groenlandicus x pearyi\) in the Northwest Territories and Nunavut\*](#) was developed to facilitate coordination and cooperation among management partners based on the shared goal, objectives and approaches established for the population. The plan assists management partners in assigning priorities, understanding natural processes impacting caribou, and allocating resources in order to manage human impacts on this species.

In September 2017, the Nunavut Wildlife Management Board and the Government of Nunavut approved the management plan. The Wildlife Management Advisory Council (NWT) and the Government of the Northwest Territories followed suit in December 2017, adopting the management plan as the Conference of Management Authorities (CMA).

An agreement to implement the management plan in the Northwest Territories was finalized by the CMA on December 11, 2018. The [implementation agreement](#) outlines the actions the Wildlife Management Advisory Council (NWT) and the Government of the Northwest Territories intend to take to implement the management plan.

Success in the management of Dolphin and Union caribou depends on the commitment and collaboration of the many different agencies, organizations and governments that are involved in implementing the directions set out in the plan and will not be achieved by any group or jurisdiction alone.

**This progress report highlights the actions taken by all management partners in the Northwest Territories and Nunavut, including the CMA, to implement the management plan for Dolphin and Union caribou from 2018 to 2022 and progress made towards meeting its objectives.**

Dolphin and Union Caribou

	NWT	Canada
Legal Status	Special Concern	Special Concern
Listed	2015	2011
Management plan	2017	2018 (adopted)
Reassessed as Endangered	2023	2017

## 2. MANAGEMENT PARTNERS FOR DOLPHIN AND UNION CARIBOU

The management partners in the Northwest Territories and Nunavut that share responsibility for the management of Dolphin and Union caribou are:

- Wildlife Management Advisory Council (NWT)
- Inuvialuit Game Council
- Nunavut Wildlife Management Board
- Kitikmeot Regional Wildlife Board
- Nunavut Tunngavik Inc.
- Hunters and Trappers Organizations and Hunters and Trappers Committees
- Government of the Northwest Territories
- Government of Nunavut
- Government of Canada (Environment and Climate Change Canada and Parks Canada)

Further information on management partners is provided in Appendix A.

## 3. SPECIES INFORMATION

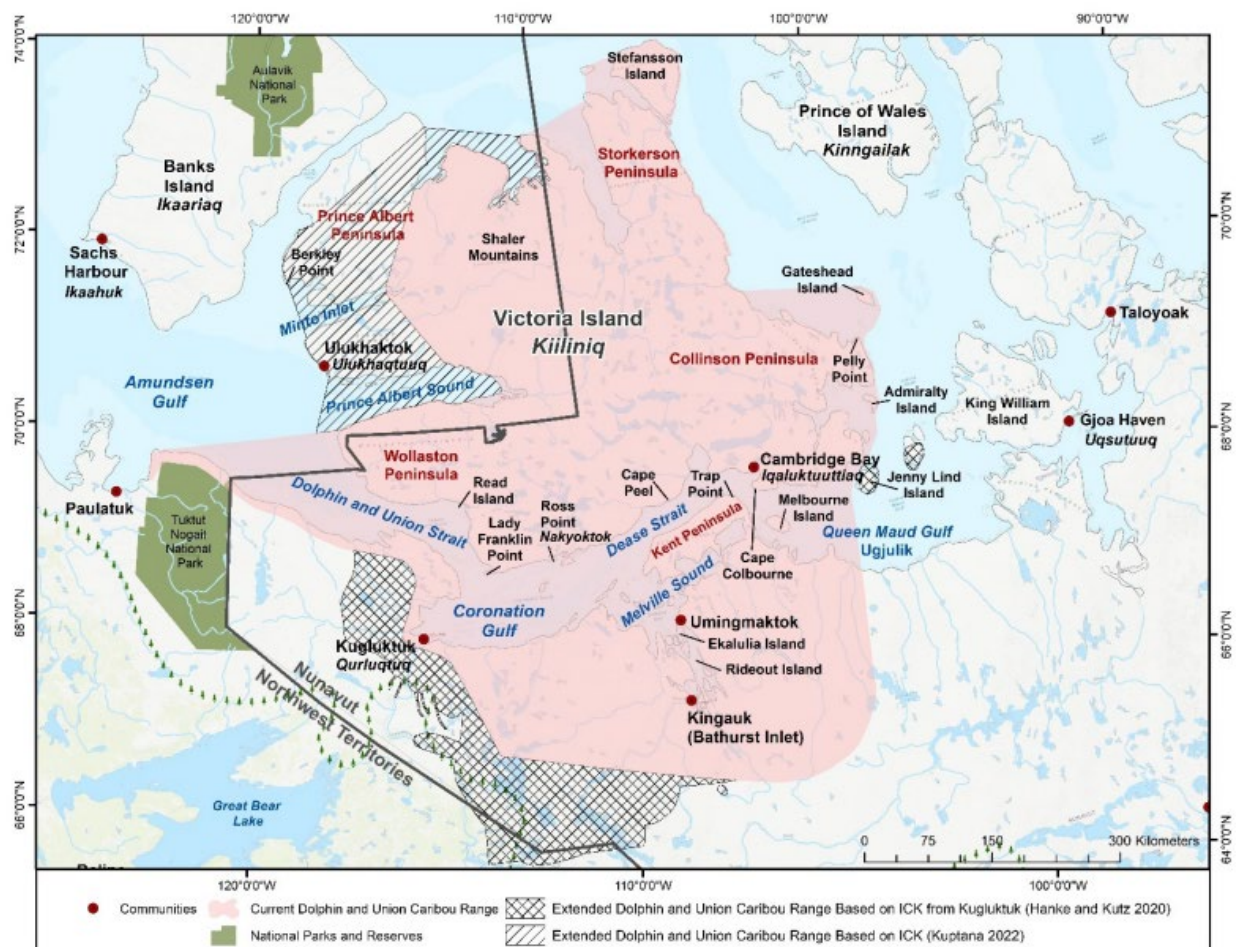
<b>Common name in English:</b>	Dolphin and Union caribou
<b>Also known as:</b>	Island caribou, Arctic-island caribou and Mainland caribou
<b>Names in other languages:<sup>a</sup></b>	Tuktu (Kangiryuarmiutun) Tuktu/tuktut (Sallirmiutun) Tuttu (Uummarmiutun) Kiilliniq caribou (Inuinnaqtun [Nunavut]) Le caribou de Dolphin-et-Union (French)
<b>Scientific name:</b>	<i>Rangifer tarandus groenlandicus x pearyi</i>

For thousands of years, caribou have formed the foundation for the Inuit and Inuvialuit lifestyle and culture across the western Arctic. Dolphin and Union are highly regarded in Inuvialuit and Inuit spirituality and provide important country food for communities within their range.

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<sup>a</sup>Three dialects are spoken in the Inuvialuit Settlement Region. Sallirmiutun is spoken in the coastal communities of Tuktoyaktuk, Paulatuk and Sachs Harbour. Uummarmiutun is spoken in the Delta communities of Aklavik and Inuvik. Kangiryuarmiutun, or Inuinnaqtun, is spoken in the community of Ulukhaktok (Holman) on Victoria Island.

Dolphin and Union caribou are distinguished from other caribou by differences in size, colour and taste, and behaviour. They live on Victoria Island in the summer and the nearby mainland in the winter. The population was named for the Dolphin and Union Strait where their annual migration path crossed over sea ice twice a year. Dolphin and Union caribou sometimes gather in large numbers along the southern shore of Victoria Island in the fall, waiting for the sea ice to become thick enough to cross.



**Figure 1. Current and extended range of Dolphin and Union caribou based on Indigenous and community knowledge from Ulukhaktok and Kugluktuk. Current range map (pink shaded area) based on Environment and Natural Resources unpubl. data 2012. Figure reproduced from SARC 2023.**

Locally, Dolphin and Union caribou may be referred to as 'island caribou' to distinguish them from barren-ground caribou. Dolphin and Union caribou are genetically and morphologically distinct from other caribou populations. They are slightly darker and larger than the Peary caribou that inhabit northern Victoria Island. They have mostly white legs and bellies and their antler velvet is pale grey compared to the brown velvet of barren-ground caribou.

## 4. HOW ARE DOLPHIN AND UNION CARIBOU DOING IN THE NORTHWEST TERRITORIES AND NUNAVUT?

Dolphin and Union caribou were at very low numbers during the mid-20th century and had stopped migrating from Victoria Island to the mainland. From the 1970s to the 1990s, numbers increased, and Dolphin and Union caribou resumed migrating across the sea ice. Population estimates indicated that the population was above 30,000 in 1997, but declined to about 18,000 as of 2015, with a further decline to about 3,800 in 2020.

Inuvialuit knowledge and *Inuit Qaujjimajatuqangit* have also noted a declining trend and changes in distribution of Dolphin and Union caribou. In the mid-2000s, residents of Cambridge Bay reported fewer observations of calves and yearlings compared to the 1990s. Mortality of Dolphin and Union caribou due to drowning (breaking through sea ice), predation and hunting is relatively high. Local communities have also observed more diseases, parasites and insect harassment of Dolphin and Union caribou. Other threats include increased shipping traffic, which can affect ice formation, and weather events that cause an ice crust to form over vegetation. Changes to sea ice freeze-up and break-up due to climate change could also threaten migration.

In the NWT, Dolphin and Union caribou were reassessed by the Species at Risk Committee (SARC) in April 2023. SARC assessed Dolphin and Union caribou as an Endangered species (previously Special Concern), owing to the species' low numbers, its sensitivity to multiple impacts of climate change and a high level of community concern.



**Figure 2. Dolphin and Union caribou in the Wentzel River area, Nunavut. Photo: Xavier Fernandez Aguilar**

At the national level, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reassessed Dolphin and Union caribou as Endangered in Canada in 2017. Both reassessments reflect the worsening status of the Dolphin and Union caribou population.

**A full discussion of biological status of Dolphin and Union caribou in the NWT, including threats and positive influences to the species and its habitat, can be found in the 2023 species status report ([SARC 2023](#)).**

## 5. MANAGEMENT

### 5.1. Management Goal and Objectives

#### Management Goal

The management goal outlined in the management plan is to maintain the **long-term persistence** of a **healthy and viable** Dolphin and Union caribou **population** that **moves freely** across its current range and **provides sustainable harvest opportunities** for current and future generations.

The management plan recommended the following objectives that apply broadly across the population's range in both NWT and Nunavut to meet the management goal:

1. Adaptively co-manage Dolphin and Union caribou using a community-based approach.
2. Communicate and exchange information on an ongoing basis between parties using a collaborative and coordinated approach.
3. Collect information to fill knowledge gaps on Dolphin and Union caribou using *Inuit Qaujimajatuqangit* (IQ) and Traditional Ecological Knowledge (TEK), community monitoring and scientific methods.
4. Minimize disturbance to habitat and preserve sea ice crossings to maintain the ability of Dolphin and Union caribou to move freely across their range.
5. Ensure management is based on population level so future generations can benefit from sustainable harvesting opportunities.



## 5.2. Approaches to Achieve Objectives

Twelve approaches are recommended in the management plan to achieve these five objectives. Each is assigned a relative priority (critical, necessary or beneficial) and relative timeframe (short-term, long-term or ongoing). In addition, the management plan identifies 59 recommended actions for the management of Dolphin and Union caribou in the NWT and Nunavut.

**Relative priority** can be *critical, necessary or beneficial*. Critical approaches are the highest priority for the conservation of Dolphin and Union caribou and should be implemented sooner rather than later. Necessary approaches are important to implement for the conservation of Dolphin and Union caribou but with less urgency than critical. Beneficial approaches help to achieve management goals but are less important to the conservation of the species compared to critical or necessary.

**Relative timeframe** can be *short-term, long-term or ongoing*. Short-term approaches should be completed within five years and long-term approaches require more than five years to complete. Ongoing approaches are actions carried out repeatedly on a systematic basis.

## 5.3. Adaptive Management

Harvest management and other management actions recommended in the management plan are informed by the level and trend of the population. The management plan recommends a framework describing how management actions should be adapted at different phases in the Dolphin and Union caribou cycle, according to when the population is increasing, high, decreasing or low.

## 6. MANAGEMENT PROGRESS FROM 2018 TO 2022

### 6.1 Highlights

Progress has been made towards meeting all objectives in the management plan. Some of the **key actions** implemented between 2018-2022 include:

- **Regular meetings** between user groups in NWT and Nunavut to share information on Dolphin and Union caribou monitoring and management.
- **Population surveys** carried out in 2018 and 2020; satellite collaring in 2021. Local and Indigenous knowledge used to plan surveys and collaring activities.
- **Harvest restrictions** implemented in Nunavut in 2020 and in Ulukhaktok in 2021.
- **Publication of an annual Notice to Mariners** (NOTMAR) to mitigate the risks of icebreaking to wildlife and people traveling on ice.
- The **Munaqsiyit (Guardians) Program** helped mobilize knowledge from the land for co-management.
- **Community-based sampling** in Cambridge Bay, Kugluktuk and Ulukhaktok, with health and disease modeling and annual local knowledge interviews.
- **Four independent studies** initiated in 2022 by the Government of Nunavut to explore Dolphin and Union caribou movement and habitat.
- **Inuit recommendations on Arctic shipping** gathered by the University of Ottawa's [Arctic Corridors and Northern Voices Research Project](#) to inform federal policy.
- A **Cruise Ship Management Plan** was [published for the ISR](#) in 2022 with guidelines against icebreaking and disturbing caribou and caribou habitat.
- **Youth learned sustainable harvesting practices** during an on-the-land trip to Haliarvik in 2020.

### In 2018, the Victoria Island Waterway Safety Committee

was established by the Ekaluktutiak Hunters and Trappers Committee (EHTO) and Transport Canada as part of work on Canada's **Ocean Protection Plan**.

The Committee brings together local organizations and federal partners (including NTI, KIA, Coast Guard, Canadian Rangers, and local advisors and monitors) to talk about projects related to marine shipping and safety that need collective input and discussion.



6.2 Progress Overview

Progress on approaches for the management of Dolphin and Union caribou in the Northwest Territories and Nunavut

Completed	In progress	Not started	Not pursuing
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Goal: Maintain the long term persistence of a healthy and viable Dolphin and Union caribou population that moves freely across its current range and provides sustainable harvest opportunities for current and future generations.				
Approach	Management Actions	Relative Priority/ Time Frame	Performance Measure	Progress
Objective #1: Adaptively co-manage Dolphin and Union caribou using a community-based approach.				
<b>Approach 1.1:</b> Hold regular meetings with co-management partners, Indigenous governments and organizations, and local harvesting committees to make recommendations on Dolphin and Union caribou management, and to implement these, using co-management processes and adaptive management principles.	<b>1.1.1:</b> Incorporate local knowledge, IQ, and TK and ensure that plans and actions for Dolphin and Union caribou management are informed by this knowledge.	Critical/ Ongoing	<ul style="list-style-type: none"><li>Co-management partners share IQ, TK, local and scientific knowledge with each other on an ongoing basis.</li></ul>	<ul style="list-style-type: none"><li><b>Ongoing</b> – WMAC (NWT) applies traditional, local and scientific knowledge equally in all decisions.</li><li><b>2019-Ongoing</b> – Hunters and Trappers Committees (HTCs) and Organizations (HTOs) in NU and the NWT meet regularly with co-management partners (GN, GNWT, IGC, WMAC (NWT), KRWB, ECCC) through the Dolphin and Union (DU) caribou User-to-User group. Funded by ECCC, the group meets at least once a year to share traditional, local and scientific knowledge on DU caribou and discuss management activities. The most recent meeting took place November 5-6, 2022, in Yellowknife.</li><li><b>2018-Ongoing</b> – An addendum to the <a href="#">COSEWIC Assessment and Status Report for DU caribou</a> (COSEWIC 2017) is being prepared by the HTOs and HTCs with support from WMAC (NWT), KRWB and ECCC. The addendum will complement the assessment report by adding new information and management initiatives that more fully reflect <i>Inuit Qaujimajatuqangit</i> (IQ), traditional knowledge (TK) and local knowledge.</li></ul>



				<ul style="list-style-type: none"> <li>• <b>2018-Ongoing</b> – KRWB has been documenting IQ and TK of DU caribou from Kugluktuk and Cambridge Bay communities through their HTOs. This information has been recorded in audio, video, text and map formats using a combination of interviews, mobile apps and online surveys.</li> <li>• <b>2020-2021</b> – WMAC (NWT) conducted door-to-door consultations and community meetings in 2020 and 2021 to share recent population information and collect feedback on possible management actions for DU caribou. This has helped the OHTC work with WMAC (NWT) to implement community management actions.</li> <li>• <b>2022</b> – WMAC (NWT) engaged Ulukhaktok knowledge holders in a facilitated review of the NWT Dolphin and Union Species Status Report prior to the 2023 SARC reassessment. A knowledge holder also attended the reassessment as an invited expert.</li> <li>• <b>2022</b> – GN is incorporating IQ/TK into planning for the 2023 population survey of DU caribou. For the 2020 survey, methods were changed to improve alignment with traditional and community knowledge, including recent information on caribou distribution (<a href="#">Campbell et al. 2021</a>).</li> <li>• <b>2019-2023</b> – IGC and WMAC (NWT) compiled a report on Inuvialuit knowledge on DU and Peary caribou on Victoria Island based on interviews conducted by the GNWT in 2011-2014 (Hanke and WMAC (NWT) 2023).</li> </ul>
	<p><b>1.1.2:</b> Continue to work with wildlife management advisory boards, game councils, and local HTO/HTCs on Dolphin and Union caribou monitoring, stewardship, and management.</p>	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• All co-management partners review and discuss management practices and recommendations through attending regular meetings and ongoing communication.</li> <li>• Communities and harvesters have increased awareness of the Management Plan and its goals,</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – WMAC (NWT) conducts an annual community tour to discuss management issues and share information with relevant species to each community. Additional meetings and consultations take place as needed.</li> <li>• <b>2019-Ongoing</b> – The DU User-to-User group meets annually to share information and implement the DU <a href="#">Management Plan</a>. A Memorandum of Understanding (MOU) is being developed to further define its roles and responsibilities.</li> </ul>

			and participate meaningfully in Dolphin and Union caribou monitoring, stewardship, information exchange, and management.	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – KRWB and Kitikmeot HTOs meet regularly to exchange observations and report on ongoing research and harvesting information.</li> <li>• <b>2020</b> – GN held survey planning meetings to collect input from wildlife management boards and HTOs/HTCs.</li> <li>• <b>2021</b> – GN used community observations on changing movements to plan collaring of DU caribou in 2021.</li> <li>• <b>2022</b> – OHTC and other ISR co-management partners supported the federal up-listing of DU caribou from Special Concern to Endangered to allow for stronger critical habitat management by the federal government.</li> </ul>
	<b>1.1.3:</b> Work with industry on best practices, mitigation, and research.	Necessary/ Long-term	<ul style="list-style-type: none"> <li>• Best practices and mitigation measures that reflect community values are developed and shared with partners.</li> <li>• Industry research fills priority knowledge gaps (Objective 3) and capitalizes on existing collaborations.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2020-Ongoing</b> – EHTO works with the Canadian Coast Guard and Transport Canada to publish an annual <a href="#">Notice to Mariners</a> (NOTMAR) to mitigate the risks of icebreaking to people traveling on ice and wildlife. Industry is aware of the annual NOTMAR and has been following recommended safety measures for high-risk travel seasons.</li> </ul>
	<b>1.1.4:</b> Collaborate with industry and other partners on monitoring so that information can be combined at a large spatial scale to give a big picture view.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Monitoring framework that is inclusive of monitoring in different regions and at different scales is established.</li> <li>• Outcomes are updated regularly and shared with partners and feed into cumulative effects model (Action 3.3.1).</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GN and GNWT work with research partners on monitoring caribou population, health, predators and habitat. All monitoring information is shared at DU User-to-User meetings.</li> <li>• <b>Ongoing</b> – KRWB and Kitikmeot HTOs are developing collaboration and data sharing agreements to guide and support information exchange and knowledge sharing.</li> <li>• <b>2017-Ongoing</b> – Dr. Susan Kutz's <a href="#">Research Group</a> (University of Calgary) is looking at spatial relationships between community observations. In particular, Andrea Hanke's research is creating collective accounts of traditional knowledge (TK) around DU caribou in Kugluktuk, Cambridge Bay and Ulukhaktok (<a href="#">Hanke et al. 2021</a>). They are also working to connect TK and</li> </ul>

				conventional western science in ways that are consistent with both ways of knowing, to support co-management processes. Fabien Mavrot's research uses hunter-based sampling to monitor caribou health and disease prevalence. Progress updates and results have been presented regularly to co-management partners, the User-to-User group and at the ArcticNet symposium in 2022 ( <a href="#">Hanke et al. 2022</a> ).
	<b>1.1.5:</b> Continue engaging hunters, industry, and the public about Dolphin and Union caribou management.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Hunters/industry/public are aware of current Dolphin and Union caribou management objectives and initiatives.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Engagement is ongoing in the ISR; see actions under Objective #2 and elsewhere under 1.1.</li> <li><b>Ongoing</b> – KRWB and Kitikmeot HTOs hold public meetings (AGM) each year where DU caribou knowledge and information on research and management are discussed.</li> <li><b>2018-2022</b> – ECCC conducted in-person consultations and engagement on the proposed federal up-listing of DU caribou from Special Concern to Endangered in Canada.</li> </ul>
	<b>1.1.6:</b> Annually review new information on population status and habitat, and adapt management practices accordingly.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Annual review of all TLK and SK information (including outcomes of 3.1.1 and 3.2) occurs; community members are involved. Practices adapted accordingly.</li> </ul>	<ul style="list-style-type: none"> <li><b>2019-Ongoing</b> – The DU User-to-User group meets annually to share information and implement the <a href="#">DU Management Plan</a>. A Memorandum of Understanding (MOU) is being developed to further define its roles and responsibilities.</li> <li><b>Ongoing</b> – WMAC (NWT) and GNWT review progress on management of DU caribou annually at the <a href="#">Conference of Management Authorities</a> (CMA) meeting in February.</li> <li><b>Ongoing</b> – WMAC (NWT) regularly reviews population status and management actions and shares information with the HTC's via meetings and/or other correspondence.</li> <li><b>Ongoing</b> – KRWB and Kitikmeot HTOs meet regularly to discuss updates and exchange observations that are unique to each season.</li> <li><b>Ongoing</b> – Management actions in NWT and Nunavut are adapted to new information on an ongoing basis; see Approach 5.2.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>2020-2021</b> – GN released information from the 2018 and 2020 DU caribou surveys (<a href="#">Leclerc and Boulanger 2020</a>; <a href="#">Campbell et al. 2021</a>). A Total Allowable Harvest (TAH) of 105 was implemented via quota in Nunavut in 2020.</li> <li>• <b>2021-Ongoing</b> – OHTC implemented a voluntary annual harvest limit of 50 caribou and a spring harvest closure from April 15 to July 15.</li> <li>• <b>2021</b> – WMAC (NWT) and OHTC recommended mandatory sampling and reporting for all caribou harvested on Victoria Island. This OHTC by-law will be implemented in the NWT <i>Wildlife Act</i> regulations in Fall 2023.</li> </ul>
	<b>1.1.7:</b> Conduct regular trans-boundary meetings of Dolphin and Union caribou co-management partners, rotating among NWT and Nunavut communities, to review information and population level and trend and discuss management.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• All co-management partners review and discuss trans-boundary management information and recommendations through attending regular meetings.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2019-Ongoing</b> – The DU User-to-User group meets annually to share information and implement the DU <a href="#">Management Plan</a>. A Memorandum of Understanding (MOU) is being developed to further define its roles and responsibilities.</li> <li>• <b>Ongoing</b> – ECCC provides funding to WMAC (NWT) annually to conduct regular transboundary meetings.</li> </ul>
	<b>1.1.8:</b> If necessary, recommend alternative management actions (e.g., stricter habitat and/or harvest management) allowing for natural variation in numbers.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Recommendations made to Minister, if required.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2018</b> – EHTO restricted and then ceased issuing sport hunting tags for DU caribou in 2018.</li> <li>• <b>2020-Ongoing</b> – GN and NWMB implemented a Total Allowable Harvest (TAH) in Nunavut in 2020, following the 2018 population survey.</li> <li>• <b>2021-Ongoing</b> – OHTC implemented a voluntary annual harvest limit of 50 caribou and a spring harvest closure from April 15 to July 15.</li> <li>• <b>2021</b> – WMAC (NWT) and OHTC recommended mandatory sampling and reporting for all caribou harvested on Victoria Island. This OHTC by-law will be implemented in the NWT <i>Wildlife Act</i> regulations in Fall 2023.</li> <li>• <b>2022</b> – OHTC and other ISR co-management partners supported the federal up-listing of DU caribou from Special</li> </ul>

				Concern to Endangered to allow for stronger critical habitat management by the federal government.
	<b>1.1.9:</b> Every five years, report on management actions and progress made toward meeting objectives in management plan.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Report published on management actions and progress made toward meeting objectives. If needed, Management Plan updated.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – WMAC (NWT) and GNWT review progress on management of DU caribou annually at the <a href="#">Conference of Management Authorities</a> (CMA) meeting in February.</li> <li><b>2022</b> – NWT <a href="#">Species at Risk Committee</a> (SARC) released a draft updated status report on DU caribou for review, in preparation for reassessing the species in Spring 2023. The final status report (<a href="#">SARC 2023</a>) includes updated information on status and management of DU caribou.</li> <li><b>2022</b> – All partners in NWT and NU began work on progress reporting, including summarizing implementation actions from 2018-2022.</li> </ul>
<b>Objective #2: Communicate and exchange information on an ongoing basis between parties using a collaborative and coordinated approach.</b>				
<b>Approach 2.1:</b> Encourage flow and exchange of information between management partners, communities, industry, regulatory boards, non-governmental organizations (NGOs), and the public, using various approaches to promote better understanding of Dolphin and Union caribou and the threats they face.	<b>2.1.1:</b> Conduct out on the land trips, where experienced hunters (elders if they're able) take youth out on the land.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Governments fund out on the land trips led by HTC/HTOs.</li> <li>Youth are made aware of how to recognize disease and parasites in caribou, harvest and prepare meat accordingly, and other aspects of traditional and responsible harvesting are shared.</li> </ul>	<ul style="list-style-type: none"> <li><b>2020</b> – OHTC, IRC and WMAC (NWT) held an Elder/youth on-the-land trip to Haliarvik in February 2020. Youth from Helen Kalvak Elihakvik School in Ulukhaktok learned about traditional harvesting practices and how to differentiate Peary from DU caribou.</li> <li><b>2022-2023</b> – EHTO contracted <a href="#">Trailmark Systems Inc.</a> consultants to provide training for youth to interview their Elders about the effects of predation on DU caribou. This work will encourage youth to participate in hunting trips with more experienced hunters.</li> </ul>
	<b>2.1.2:</b> Use social media and the internet to reach out to youth.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Community members such as teachers, Elders, and others detect an increased knowledge level by youth regarding traditional hunting practices and overall Dolphin and Union caribou management.</li> <li>Youth understand the different roles and responsibilities in</li> </ul>	<ul style="list-style-type: none"> <li><b>2018</b> – GNWT created a poster to help differentiate DU from Peary caribou and provided it to the OHTC for sharing online.</li> <li><b>2022-2023</b> – KRWB and EHTO created posters and social media posts to recruit youth to interview their Elders about the effects of predation on DU caribou.</li> </ul>

			managing Dolphin and Union caribou and how they can contribute.	
	<b>2.1.3:</b> Conduct school visits (possibly elders if they're able) to educate youth about managing Dolphin and Union caribou.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Community members such as teachers, Elders, and others detect an increased knowledge level by youth regarding traditional hunting practices and overall Dolphin and Union caribou management.</li> <li>Youth understand the different roles and responsibilities in managing Dolphin and Union caribou and how they can contribute.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Helen Kalvak Elihakvik School in Ulukhaktok regularly works with the OHTC and invites Elders to share information on traditional life and harvest.</li> <li><b>2019</b> – WMAC (NWT) conducted school visits in each ISR community. This annual initiative was paused in 2020 during COVID-19 and has not yet started up again.</li> <li><b>2020</b> – OHTC, IRC and WMAC (NWT) held an Elder/youth on-the-land trip to Haliarvik in February 2020. Youth from Helen Kalvak Elihakvik School in Ulukhaktok learned about traditional harvesting practices and how to differentiate Peary from DU caribou.</li> </ul>
	<b>2.1.4:</b> Conduct community meetings to exchange information with communities about management of Dolphin and Union caribou.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Knowledge is transmitted between partners and the public/harvesters with regard to Dolphin and Union caribou, the threats they face, roles and responsibilities of the co-management structure, and management practices.</li> <li>Community support is built for managing Dolphin and Union caribou and community members/harvesters are involved in the management process.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – WMAC (NWT) holds annual community meetings in all six ISR communities to review management actions and issues, species at risk status and management, monitoring results and ongoing initiatives, and new information on local species.</li> <li><b>Ongoing</b> – KRWB and Kitikmeot HTOs meet regularly to discuss updates and exchange observations throughout each season. They also host public meetings each year (AGMs) for community membership to attend. During AGMs, all Kitikmeot communities as well as co-management and research partners attend to discuss shared research and management initiatives.</li> <li><b>2019-2021</b> – WMAC (NWT) conducted regular community meetings about DU caribou when the <a href="#">Management Plan</a> was beginning to be implemented and new population survey results were made available.</li> <li><b>2020</b> – GN shared an infographic on the 2020 DU caribou abundance survey (<a href="#">Campbell et al. 2021</a>) with communities in the range of DU caribou.</li> </ul>

	<b>2.1.5:</b> Investigate possible mechanisms to foster industry participation in research and monitoring.	Beneficial/ Short-term	<ul style="list-style-type: none"> <li>Increased industry participation in research and monitoring initiatives that support priorities in Objective 3.</li> <li>Indigenous governments and Indigenous organizations are part of directing research and monitoring initiatives.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Industry in the range of DU provides in-kind support for caribou research activities in Nunavut, including collaring.</li> </ul>
	<b>2.1.6:</b> Ensure ongoing communication through supporting and improving community monitoring programs.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>More communities share harvesting information with one another and partners.</li> <li>Increase in information products (e.g. emails/pamphlets/presentations) available to managers and communities.</li> <li>Community support is built for managing Dolphin and Union caribou.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Co-management boards in the ISR work closely with community monitoring programs in the region.</li> <li><b>Ongoing</b> – Regional and community researchers continue to support communications throughout the Kitikmeot region on KRWB’s caribou monitoring program.</li> <li><b>2016-Ongoing</b> – OHTC, EHTO and KAA, in collaboration with University of Calgary, carry out wildlife health monitoring on DU caribou and muskox in Ulukhaktok, Cambridge Bay and Kugluktuk (see <a href="#">Tomaselli et al. 2018a</a>; <a href="#">Tomaselli et al. 2018b</a>; <a href="#">2021 Activity Update</a>; Mavrot and Kutz 2022), including hunter-based sampling, health and disease modeling, and annual local knowledge interviews.</li> <li><b>Up to 2020</b> – Harvesting information collected by the <a href="#">ISR Community-based Monitoring Program (CBMP)</a> was shared among communities and co-management partners. The Harvest Study has been paused since March 2020.</li> <li><b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, population, distribution and harvest. The program was supported by funding from the Government of Canada.</li> <li><b>2020</b> – Ulukhaktok-based field technicians, supported by WMAC (NWT) and OHTC, attempted to conduct a ground-based survey of DU caribou on NW Victoria Island to</li> </ul>



				complement the Fall 2020 aerial survey but could not complete the survey due to poor weather conditions.
<b>Objective #3: Collect information to fill knowledge gaps on Dolphin and Union caribou using IQ and TK, community monitoring, and scientific methods.</b>				
<b>Approach 3.1:</b> Monitor Dolphin and Union caribou population numbers, distribution, and demographic indicators to determine population level and trend.	<b>3.1.1:</b> Expand community monitoring programs that provide information on Dolphin and Union caribou condition, population size and trends, predators, changes in distribution, and timing of seasonal movements.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• A long-term monitoring program is maintained that includes population level, distribution, and demographic indicators.</li> <li>• Trends in population are monitored using Inuit Qaujimajatuqangit, traditional knowledge, local knowledge, and scientific methods.</li> <li>• There is an increase in monitoring information collected that contributes to filling knowledge gaps.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2016-Ongoing</b> – OHTC, EHTO and KAA, in collaboration with University of Calgary, carry out wildlife health monitoring on DU caribou and muskox in Ulukhaktok, Cambridge Bay and Kugluktuk (see <a href="#">Tomaselli et al. 2018a</a>; <a href="#">Tomaselli et al. 2018b</a>; <a href="#">2021 Activity Update</a>; Mavrot and Kutz 2022), including hunter-based sampling, health and disease modeling, and annual local knowledge interviews.</li> <li>• <b>2018-Ongoing</b> – KRWB and Kitikmeot HTOs began a community-based monitoring program for caribou that involves interviews, monitoring using mobile apps, and online surveys to document IQ- and TK-based information. Information gathered includes changes in population characteristics as well as knowledge of caribou and stewardship.</li> <li>• <b>2019</b> – EHTO began a community-based monitoring study for DU caribou in Summer 2019 with the <a href="#">Nunavut General Monitoring Program</a> and <a href="#">Trailmark Systems Inc.</a></li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, population, distribution and harvest.</li> <li>• <b>Up to 2020</b> – The <a href="#">ISR Community-based Monitoring Program (CBMP)</a> provided information on DU caribou harvest in the NWT until March 2020, when it was paused due to funding and capacity limitations.</li> <li>• <b>2022</b> – GN launched an ecological niche factor analysis of DU caribou collar data to better understand the distribution of DU caribou. This study is at an early stage, but co-management partners were involved in the selection of the</li> </ul>



				<p>ecogeographical variables to base the future prevalence of occupancy model upon.</p> <ul style="list-style-type: none"> <li>• <b>2022-2023</b> – KRWB and EHTO initiated interviews between youth and elders to document the effects of predation on DU caribou.</li> <li>• <b>2022-Ongoing</b> – GN is working on a fidelity analysis of the DU caribou calving ground and wintering ground. Preliminary results show a strong fidelity of individuals to a specific calving location year after year, where fidelity in the wintering ground is at the herd level.</li> </ul>
	<p><b>3.1.2:</b> Develop and implement both a short- and long-term monitoring schedule, to monitor demographic indicators such as pregnancy, survival, and recruitment rates.</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• A schedule is created, and adhered to, for the long-term monitoring program. As described in Action 3.1.1.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GN is conducting population monitoring more frequently while the population is low. GN shares its collar data regularly with co-management partners. Information is also collected on pregnancy rates (via hunting samples and capture samples) and survival rates (via collars).</li> <li>• <b>2018-2022</b> – GN carried out aerial surveys in 2018 and 2020 (<a href="#">Leclerc and Boulanger 2020</a>; <a href="#">Campbell et al. 2021</a>) and deployed 36 collars in Spring 2021. Results of a previous survey in Fall 2015 were also published in 2018 (<a href="#">Leclerc and Boulanger 2018</a>). Monitoring of collared caribou continued in 2022 and additional caribou collars were deployed on Northwest Victoria Island.</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</li> <li>• <b>2018-Ongoing</b> – KRWB and Kitikmeot HTOs are recording baseline information through an ongoing caribou monitoring program (see 3.1.1).</li> </ul>
	<p><b>3.1.3:</b> Develop and implement a schedule to assess population status every five years, based on a framework in section 6.6.</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• A new population estimate <math>\leq</math> every 5 years; results shared with partners in a timely fashion.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GN is conducting population monitoring more frequently while the population is low. The next survey is planned for October-November 2023.</li> </ul>

	<b>3.1.4:</b> As technologies and research methods evolve, continue investigating alternative, effective methods to obtain population information.	Necessary/ Long-term	<ul style="list-style-type: none"> <li>Alternative methods investigated and tested.</li> </ul>	<ul style="list-style-type: none"> <li><b>2016-Ongoing</b> – OHTC, EHTO and KAA, in collaboration with University of Calgary, carry out wildlife health monitoring on DU caribou and muskox in Ulukhaktok, Cambridge Bay and Kugluktuk (see <a href="#">Tomaselli et al. 2018a</a>; <a href="#">Tomaselli et al. 2018b</a>; <a href="#">2021 Activity Update</a>; Mavrot and Kutz 2022), including hunter-based sampling, health and disease modeling, and annual local knowledge interviews.</li> <li><b>2020</b> – Ulukhaktok-based field technicians, supported by WMAC (NWT) and OHTC, attempted to conduct a ground-based survey of DU caribou on NW Victoria Island to complement the Fall 2020 aerial survey but could not complete the survey due to poor weather conditions.</li> <li><b>Ongoing</b> – KRWB and Kitikmeot HTOs continue to interview elders and active harvesters on alternative methods of monitoring DU caribou. Kitikmeot organizations also continue to exchange information with other Nunavut regions and caribou researchers to seek new approaches.</li> </ul>
<b>Approach 3.2:</b> Improve our overall understanding of Dolphin and Union caribou health, biology and habitat requirements, diet, and effects of climate change.	<b>3.2.1:</b> Identify geographic areas of importance to Dolphin and Union caribou through research and community/TK.	Critical/ Long-term	<ul style="list-style-type: none"> <li>Areas of importance identified and shared with partners.</li> </ul>	<ul style="list-style-type: none"> <li><b>2018</b> – Researchers published a study looking at social interactions during DU caribou migration and the role of social information on movement decisions (<a href="#">Torney et al. 2018</a>).</li> <li><b>2020-2021</b> – GN and Caslys Consulting Ltd. completed a landscape stratification analysis for Victoria Island to support survey planning for DU caribou. Land cover and topography were intersected with telemetry locations to explore the land cover and terrain use patterns of DU caribou (<a href="#">Campbell et al. 2021</a>, Appendix 8.2).</li> <li><b>2020-2021</b> – GN and Caslys Consulting Ltd. developed updated maps of core seasonal ranges for DU caribou, adding data from collars up to 2020. The maps were published in <a href="#">Campbell et al. 2021</a> (Appendix 8.2).</li> <li><b>2022</b> – GNWT launched the <a href="#">NWT Species and Habitat Viewer</a>. The viewer shows mapped information on DU caribou ranges, including core seasonal range maps, along</li> </ul>

				<p>with other information in the NWT such as development interests. The Migratory Caribou Report tool can be used to generate a report showing which DU caribou seasonal ranges overlap with an area of interest specified by the user. This can help developers and regulators identify, avoid, minimize and mitigate impacts of proposed development projects on DU caribou habitat.</p> <ul style="list-style-type: none"> <li>• <b>2022</b> – GN initiated a movement analysis of the DU migration. Preliminary study results show that fall migration is delayed over time, with no change in duration of staging. This suggests some capacity to adjust timing of migration and staging in response to delayed fall freeze up.</li> <li>• <b>2019-2023</b> – IGC and WMAC (NWT) compiled a report on Inuvialuit knowledge on DU and Peary caribou on Victoria Island based on interviews conducted by the GNWT in 2011-2014 (Hanke and WMAC (NWT) 2023).</li> <li>• <b>2018-Ongoing</b> – Researcher Andrea Hanke (<a href="#">Kutz Research Group</a>, University of Calgary) conducted interviews and workshops in Kugluktuk to identify and map areas of importance to DU caribou (<a href="#">Hanke and Kutz 2020</a>). They then analyzed the information along with traditional knowledge from Cambridge Bay, looking at spatial relationships between community observations. Results were presented to co-management partners, the User-to-User group and at the ArcticNet symposium in 2022 (<a href="#">Hanke et al. 2022</a>).</li> <li>• <b>2018-Ongoing</b> – Through consultations in the ISR and the DU User-to-User group, many observations have been shared about the DU range outside of the area identified in the <a href="#">Management Plan</a> and the COSEWIC Assessment and Status Report (<a href="#">COSEWIC 2017</a>). WMAC (NWT) and OHTC are developing a map that shows a more complete range for DU caribou on Victoria Island, which will be shared in an addendum to the COSEWIC report, currently being</li> </ul>
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				<p>prepared by the HTOs and HTC's with support from WMAC (NWT), KRWB and ECCC.</p> <ul style="list-style-type: none"> <li>• <b>2018-Ongoing</b> – KRWB is working with consultants from <a href="#">Trailmark Systems Inc.</a> on analysis of IQ- and TK-based spatial data documented through interviews, mobile monitoring and online surveys. This information includes specific queries for habitat areas and characteristics that are known to be important for DU caribou.</li> </ul>
	<b>3.2.2:</b> Monitor changes in predator abundance.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Trends in predator abundance determined from monitoring program (Action 3.1.1) and shared with partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</li> <li>• <b>2019-Ongoing</b> – Dr. Doug Clark (University of Saskatchewan's <a href="#">Human-Wildlife Interactions Research Group</a>) initiated a program to <a href="#">monitor grizzly bears</a> and their range expansion in Ulukhaktok and Cambridge Bay. Working with the <a href="#">Kutz Research Group</a> and GNWT-ECC, the monitoring includes analysis of grizzly bear diet and genetics, as well as learning about distribution and habitat use through trap cameras.</li> <li>• <b>2022-Ongoing</b> – KRWB and EHTO are documenting changes in predators and their effects on DU caribou.</li> <li>• <b>Ongoing</b> – University of Calgary's <a href="#">health sampling program for muskox and caribou</a> includes observations on predators/predation events (Mavrot and Kutz 2022).</li> </ul>
	<b>3.2.3:</b> Promote research on relationships between Dolphin and Union caribou and predators (including relatively new predators such as grizzly bear on Victoria Island).	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2019-Ongoing</b> – Dr. Doug Clark (University of Saskatchewan's <a href="#">Human-Wildlife Interactions Research Group</a>) initiated a program to <a href="#">monitor grizzly bears</a> and their range expansion in Ulukhaktok and Cambridge Bay. In 2020-21, OHTC deployed trap cameras near Ulukhaktok to observe grizzly bears.</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the</li> </ul>

			Dolphin and Union caribou population.	<p>land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</p> <ul style="list-style-type: none"> <li>• <b>2019-2023</b> – IGC and WMAC (NWT) compiled a report on Inuvialuit knowledge on DU and Peary caribou on Victoria Island based on interviews conducted by the GNWT in 2011-2014. The report includes information about predator abundance, trends and relationships with caribou (Hanke and WMAC (NWT) 2023).</li> <li>• <b>2022</b> – GNWT deployed five collars on wolves on the Arctic islands (Victoria, Melville and Banks) during Peary caribou collaring. Additional wolf collaring is planned for 2023. Maps of wolf movements were shared with co-management partners.</li> <li>• <b>2022-2023</b> – KRWB and EHTO created social media postings for their project focusing on the effects of predation on DU caribou to engage youth and other community members.</li> <li>• <b>2022-Ongoing</b> – ECCC is leading a research project (with support from GNWT and WMAC (NWT)) to document Inuit/Inuvialuit knowledge (IQ) of the impacts of climate change on the interactions between Peary caribou, muskoxen and their predators, as well as Peary caribou habitat use. Although Peary caribou are the focus of the project, it may produce results which are relevant to DU caribou.</li> <li>• <b>Ongoing</b> – HTOs and HTC's have been advocating for many years for additional research on the impacts of predators (grizzlies and wolves) on DU caribou and other species within the DU range and support for predator control.</li> </ul>
	<b>3.2.4:</b> Promote research on relationships between Dolphin and Union caribou and other species (e.g., other ungulates, geese).	Beneficial/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT conducted aerial surveys of muskox on NW Victoria Island in 2015 (<a href="#">Davison and Williams 2019</a>) and in 2019 (<a href="#">Davison and Williams 2022</a>). Survey results align with local observations of a decrease in muskox numbers.</li> </ul>

			<p>climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</p>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – ECCC assesses the population status of migratory game birds (including geese) on an annual basis. The most recent report was published in 2022 (<a href="#">CWSWC 2022</a>).</li> <li>• <b>2018-Ongoing</b> – KRWB and Kitikmeot HTOs are documenting IQ- and TK-based information through a community-based monitoring program, including information on relationships between DU caribou and other species.</li> <li>• <b>2018</b> – Researchers from University of Victoria and Natural Resources Canada published a study on the impacts of lesser snow geese and climate change to surface water (lakes and ponds) (<a href="#">Campbell et al. 2018</a>). Changes to the extent of surface water in the high Arctic can impact surrounding vegetation and caribou populations.</li> <li>• <b>2019</b> – ECCC and researchers at Trent University published research on how geese influence tundra habitat, including vegetation structure (<a href="#">Flemming et al. 2019</a>).</li> <li>• <b>2022</b> – ECCC initiated planning on a goose traditional knowledge project, including impacts on other species such as caribou. Yukon University has been hired on contract to conduct the interviews and gather information.</li> <li>• <b>2018-Ongoing</b> – GNWT is working with contractors to compile and synthesize information about muskoxen in the NWT, including their population numbers, distribution and interactions with other species. The first report based on Indigenous and community knowledge of muskoxen was published in 2021 (<a href="#">Winbourne and Benson 2021</a>). The second report based on scientific knowledge is in progress (Gunn et al. in prep).</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported</li> </ul>
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				<p>wildlife observations relating to health, predation, population, distribution and harvest.</p> <ul style="list-style-type: none"> <li>• <b>2019-2023</b> – IGC and WMAC (NWT) compiled a report on Inuvialuit knowledge on DU and Peary caribou on Victoria Island based on interviews conducted by the GNWT in 2011-2014. The report includes information on relationships between caribou and other species (Hanke and WMAC (NWT) 2023). Similar work for Nunavut has already been published (<a href="#">Hanke et al. 2021</a>).</li> <li>• <b>2021-Ongoing</b> – ECCC is leading a research project (with support from GNWT and WMAC (NWT)) to document Inuit/Inuvialuit knowledge (IQ) of the impacts of climate change on the interactions between Peary caribou, muskoxen and their predators, as well as Peary caribou habitat use. Although Peary caribou are the focus of the project, it may produce results that are relevant to DU caribou.</li> </ul>
	<p><b>3.2.5:</b> Promote and/or continue research on Dolphin and Union caribou population, habitat, vital rates, and health and condition, including possible contaminants.</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT tracks changes to the status of wildlife health in the <a href="#">NWT State of the Environment Report</a>, published every five years (most recently in <a href="#">June 2022</a>).</li> <li>• <b>2016-Ongoing</b> – OHTC, EHTO and KAA, in collaboration with University of Calgary, carry out wildlife health monitoring on DU caribou and muskox in Ulukhaktok, Cambridge Bay and Kugluktuk (see <a href="#">Tomaselli et al. 2018a</a>; <a href="#">Tomaselli et al. 2018b</a>; <a href="#">2021 Activity Update</a>; Mavrot and Kutz 2022), including hunter-based sampling, health and disease modeling, and annual local knowledge interviews.</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>2019</b> – Researchers used archived blood samples to study the prevalence of pathogens in migratory caribou (<a href="#">Carlsson et al. 2019</a>).</li> <li>• <b>2019</b> – Researchers with the <a href="#">Northern Contaminants Program</a> (NCP) provided results of research on contaminants in DU caribou to hunters in a two-page summary report published in Inuktitut (<a href="#">Gamberg 2019</a>).</li> <li>• <b>2020</b> – Researchers published an article on the geographic expansion of lungworms in the Arctic, including Victoria Island (<a href="#">Kafle et al. 2020</a>).</li> <li>• <b>2020</b> – Researchers published an article on the prevalence of the bacterium <i>Erysipelothrix rhusiopathiae</i> in muskox in the western Arctic and potential linkages with population declines (<a href="#">Mavrot et al. 2020</a>).</li> <li>• <b>2019-2023</b> – IGC and WMAC (NWT) compiled a report on Inuvialuit knowledge on DU and Peary caribou on Victoria Island based on interviews conducted by the GNWT in 2011-2014. The report includes maps of important habitat as well as information on caribou population, health and condition (Hanke and WMAC (NWT) 2023). Similar work for Nunavut has already been published (<a href="#">Hanke et al. 2021</a>).</li> </ul>
	<p><b>3.2.6:</b> Promote research on Dolphin and Union caribou diet and vegetation growth, including changes as a result of climate change.</p>	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – The NWT Centre for Geomatics uses a <a href="#">Long-Term Change Detection</a> tool to observe and monitor long-term landscape changes in the NWT, including changes in water levels, movement of sediment, burn and regrowth of forests/vegetation, etc. The goal is to update this dataset every five years to monitor landscape change over time.</li> <li>• <b>2019</b> – ECCC and researchers at Trent University published research on how geese influence tundra habitat, including vegetation structure (<a href="#">Flemming et al. 2019</a>).</li> <li>• <b>2019</b> – University researchers in collaboration with government scientists, park rangers and local knowledge holders in Yukon published the results of an ecological monitoring program providing insights into changes in</li> </ul>



				<p>plant composition, phenology and growth over 18 years on Qikiqtaruk-Herschel Island in the Beaufort Sea (<a href="#">Myers-Smith et al. 2019</a>).</p> <ul style="list-style-type: none"> <li>• <b>2020</b> – Researchers published an analysis of tundra shrub growth associated with sea ice decline in the Arctic (<a href="#">Buchwal et al. 2020</a>).</li> <li>• <b>2020</b> – Researchers from around the world published a paper on the complexities of Arctic greening due to climate change (<a href="#">Myers-Smith et al. 2020</a>).</li> </ul>
	<b>3.2.7:</b> Promote research on insects and insect harassment, particularly as it relates to climate change.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation action is not underway. Management partners intend to pursue implementation as resources and capacity allow.</li> </ul>
	<b>3.2.8:</b> Promote research on feasibility of alternative tools for population growth (e.g., translocation, domestication).	Beneficial/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation action is not being pursued. Management actions are being taken to preserve the wild population and its habitat. Alternative tools for population growth are not deemed necessary at this time.</li> </ul>
	<b>3.2.9:</b> Promote research on the impacts of climate change on Dolphin and Union caribou habitat and population.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects,</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT tracks trends in shrub cover above the treeline in the <a href="#">NWT State of the Environment Report</a>, published every five years (most recently in <a href="#">June 2022</a>).</li> </ul>

			<p>muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</p>	<ul style="list-style-type: none"> <li>• <b>2018</b> – University of Alberta researchers published a paper looking at the effects of climate change on Arctic caribou and reindeer (<a href="#">Mallory and Boyce 2018</a>).</li> <li>• <b>2019</b> – ECCC released <a href="#">Canada's Changing Climate Report</a>, including chapters on modeling future climate change, changes in temperature and precipitation and changes in snow, ice and permafrost.</li> <li>• <b>2020</b> – Researchers at the University of Alberta, University of Ottawa and GN published a study on the response of barren-ground caribou to early spring green-up (<a href="#">Mallory et al. 2020</a>).</li> <li>• <b>2021</b> – The <a href="#">Arctic Monitoring and Assessment Programme</a> (AMAP) published its latest Arctic climate change update (<a href="#">AMAP 2021</a>). AMAP is a working group of the <a href="#">Arctic Council</a>. Its mandate is to monitor and assesses the status of the Arctic region with respect to pollution and climate change.</li> <li>• <b>2021-Ongoing</b> – ECCC is leading a research project (with support from GNWT and WMAC (NWT)) to document Inuit/Inuvialuit knowledge (IQ) of the impacts of climate change on the interactions between Peary caribou, muskoxen and their predators, as well as Peary caribou habitat use. Although Peary caribou are the focus of the project, it may produce results which are relevant to DU caribou.</li> </ul>
	<p><b>3.2.10:</b> Promote research on examining the impacts of road versus flight transportation on caribou.</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• Ongoing support for research that is shared with co-management partners that leads to increased knowledge of how climate change, parasites, diseases, insects, muskoxen/geese competition, and interbreeding impact the Dolphin and Union caribou population.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation action is not underway. Management Authorities intend to pursue implementation as resources and capacity allow.</li> </ul>

<p><b>Approach 3.3:</b></p> <p>Assess cumulative impacts on Dolphin and Union caribou population and habitat.</p>	<p><b>3.3.1:</b> Develop an approach to modelling cumulative effects to help predict the consequences of different anthropogenic impacts and to develop more effective mitigation measures.</p>	<p>Necessary/ Ongoing</p>	<ul style="list-style-type: none"> <li>Cumulative effects model that is inclusive of Inuit Qaujimaqatuqangit, traditional knowledge, and local knowledge is developed in collaboration with all partners and used to inform management.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation action is not underway. However, modeling tools developed to address cumulative effects on the Bathurst herd's summer range (<a href="#">Boulanger and Adamczewski 2015</a>) may have some relevance for DU caribou.</li> </ul>
<p><b>Approach 3.4:</b></p> <p>Coordinate the gathering of information and research among different co-management partners and research institutions.</p>	<p><b>3.4.1:</b> Identify knowledge gaps and establish high priority research questions.</p>	<p>Critical/ Short-term</p>	<ul style="list-style-type: none"> <li>Research questions are developed and discussed at joint meetings in Action 1.1.7 and are based on knowledge gaps identified in the Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li><b>2019-Ongoing</b> – DU caribou User-to-User group reviews research priorities annually and provides direction on research priorities. Researchers presented at the annual meeting in Kugluktuk in 2019, and GN and GNWT biologists presented their research and monitoring work at the November 2022 meeting. Engagement between GN, GNWT and communities on survey and collaring work is ongoing.</li> <li><b>2019</b> – DU caribou User-to-User group developed a preliminary research priority list in May 2019.</li> </ul>
	<p><b>3.4.2:</b> Coordinate research activities with different research institutions and promote high priority research.</p>	<p>Necessary/ Ongoing</p>	<ul style="list-style-type: none"> <li>Increase in number of collaborative research projects carried out that target high priority questions.</li> </ul>	<ul style="list-style-type: none"> <li><b>2018-Ongoing</b> – ECCC's <a href="#">Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada</a> identifies DU caribou as a Priority Species. Proposals for research activities and recovery actions for DU caribou may be eligible for funding through this program.</li> <li><b>2020</b> – A research library on Google Drive was compiled for the DU caribou User-to-User group so published information is accessible to all parties in both NWT and Nunavut.</li> <li><b>Ongoing</b> – GNWT, GN, co-management partners, local HTC and HTOs and researchers regularly share information on scientific research and monitoring. Research is guided by community input and knowledge.</li> <li><b>Ongoing</b> – GNWT actively engages in collaborative research on caribou with national and international scientists through university partnerships and expert networks, like the <a href="#">CircumArctic Rangifer Monitoring and Assessment Network</a> (CARMA).</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT’s <a href="#">Knowledge Agenda: Northern Research for Northern Priorities</a>, released in 2017, identifies key themes to focus research to address NWT interests, improve the quality of life of NWT residents and maintain the integrity of NWT cultures, communities and ecosystems. The <a href="#">GNWT Knowledge Agenda Action Plan 2019-2024</a> provides additional direction.</li> <li>• <b>Ongoing</b> – The <a href="#">NWT Cumulative Impacts Monitoring Program</a> (CIMP) and <a href="#">NWT Species Conservation and Recovery Fund</a> (SCARF) are annual GNWT funding programs that support NWT projects related to caribou monitoring and conservation. Caribou, including DU caribou, are a priority for research. NWT CIMP has produced a <a href="#">Caribou Monitoring and Research Blueprint</a> to inform funding applicants of key caribou-related cumulative impact monitoring and research priorities.</li> <li>• <b>Ongoing</b> – Co-management partners and researchers working on projects related to DU caribou have attended annual <a href="#">ArcticNet meetings</a> and other conferences to share information on their results and ongoing work.</li> </ul>
	<b>3.4.3:</b> Ensure local involvement in research activities (planning, field research).	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Partners promote community-based research methodologies.</li> <li>• Permitting processes are used to ensure local involvement.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2020</b> – Harvesters from across the DU caribou range were involved in planning meetings for GN’s 2020 aerial survey and Nunavut community members participated in the survey.</li> <li>• <b>2021-Ongoing</b> – GNWT and GN initiated collaring on Victoria Island in response to community observations and concerns. Collaring effort and survey effort are strongly influenced by community input.</li> <li>• <b>Ongoing</b> – KRWB continues to advocate for and support community-led research initiatives, in addition to participatory research, through involvement of HTOs in research planning. KAA and EHTO actively participate in the process for issuing <a href="#">Nunavut Wildlife Research Permits</a>.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – in the NWT, researchers are required to engage with communities as part of the <a href="#">process to obtain a Wildlife Research Permit or a Scientific Research Licence</a>.</li> </ul>
	<b>3.4.4:</b> Promote national and international cooperation and collaboration to mitigate range-wide threats in Canada, such as climate change, pollution, and contaminants.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Partners attend national and international conferences and meetings and advocate for initiatives to mitigate range-wide threats.</li> <li>• Regulatory bodies work with partners in a collaborative approach to mitigate range-wide threats.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT, GN and Government of Canada, as well as northern Indigenous organizations are partners in the <a href="#">Northern Contaminants Program</a> (NCP). The NCP provides funds for research and related activities to address health and safety issues arising from contaminants in traditionally harvested foods.</li> <li>• <b>2018</b> – GNWT pledged to reduce greenhouse gas emissions by 30% below 2005 levels by 2030 in its <a href="#">NWT Climate Change Strategic Framework</a>. This is consistent with Canada's commitment under the Paris Agreement to reduce its greenhouse gas emissions by 30% below 2005 levels by 2030 (<a href="#">United Nations/Framework Convention on Climate Change 2015</a>).</li> </ul>
<b>Objective #4: Minimize disturbance to habitat and preserve sea ice crossings to maintain the ability of Dolphin and Union caribou to move freely across their range.</b>				
<b>Approach 4.1:</b> Monitor changes to habitat from anthropogenic and natural disturbances on an ongoing basis.	<b>4.1.1:</b> Track human and industry-caused landscape changes.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Information on changes to habitat (natural and anthropogenic) is collected as part of the long-term monitoring program (Action 3.1.1).</li> <li>• Results are shared regularly with partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – The GNWT Centre for Geomatics maintains an online <a href="#">NWT Mineral Tenure Map Viewer</a>.</li> <li>• <b>Ongoing</b> – The <a href="#">NWT Cumulative Impact Monitoring Program</a> (CIMP) maintains an online platform for keeping track of the human footprint in the NWT (<a href="#">Inventory of Landscape Change map viewer</a>).</li> <li>• <b>Ongoing</b> – Government of Canada maintains the <a href="#">Nunavut Map Viewer</a>, a web mapping application that displays mineral rights spatial data.</li> <li>• <b>Ongoing</b> – An <a href="#">annual overview</a> of mining, mineral exploration and geoscience activities in Nunavut is published by CIRNAC, GN, NTI and the Canada-Nunavut Geoscience office.</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the</li> </ul>

				<p>land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</p> <ul style="list-style-type: none"> <li>• <b>2022</b> – GNWT launched the <a href="#">NWT Species and Habitat Viewer</a> in July 2022. The viewer allows users to easily access spatial data on biodiversity and species at risk and their status in the NWT, including DU caribou. Users can generate reports showing how caribou ranges, including their core seasonal ranges, overlap with their area of interest. Map layers showing the human footprint and industry activity (e.g. exploration and development licenses and rights) are also available on the viewer.</li> </ul>
	<p><b>4.1.2:</b> Monitor industrial and tourism activity including shipping traffic.</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• Industrial, shipping and tourism activity database is developed and updated regularly and is made part of the long-term monitoring program (Action 3.1.1).</li> <li>• Results are shared regularly with partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2017-2018</b> – University of Ottawa published an in-depth examination of past and present shipping activities across Nunavut from 1990-2015 for the <a href="#">Nunavut General Monitoring Plan</a> (<a href="#">Dawson et al. 2017</a>) and an overview of the spatial and temporal variability of difference vessel types in Arctic Canada during this period (<a href="#">Dawson et al. 2018</a>).</li> <li>• <b>2019</b> – Transport Canada published an <a href="#">Evaluation of Cumulative Effects Assessment Methodologies for Marine Shipping</a> to support the <a href="#">Cumulative Effects of Marine Shipping initiative (CEMS)</a> under Canada's <a href="#">Ocean Protection Plan</a>.</li> <li>• <b>2021</b> – <a href="#">Protection of the Marine Environment</a> (PAME), one of the <a href="#">Arctic Council</a>'s six working groups, published a status report on shipping in the Northwest Passage that compares shipping traffic in 2013 with 2019 (<a href="#">PAME 2021</a>).</li> <li>• <b>2022</b> – Transport Canada (in collaboration with Indigenous governments and Indigenous organizations, academics, industry, and other government departments) established a <a href="#">national framework</a> for assessing environmental, social, and cultural impacts of marine shipping. This framework will help support future assessments of marine shipping.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>2020-Ongoing</b> – EHTO works with the Canadian Coast Guard and Transport Canada to publish an annual <a href="#">Notice to Mariners</a> (NOTMAR) to mitigate the risks of icebreaking to people traveling on ice and wildlife.</li> <li>• <b>Ongoing</b> – GNWT tracks trends in arctic shipping in the <a href="#">NWT State of the Environment Report</a>, published every five years (most recently in <a href="#">June 2022</a>).</li> <li>• <b>Ongoing</b> – IGC, EHTO and KAA are involved in Transport Canada's <a href="#">Ocean Protection Plan</a>. The <a href="#">Victoria Island Waterway Safety Committee</a> was established in 2018 through this work. The committee brings together local organizations and federal partners (including NTI, KIA, Coast Guard, Canadian Rangers, and local advisors and monitors) to talk about projects related to marine shipping and safety that need collective input and discussion.</li> <li>• <b>Ongoing</b> – IGC and Cambridge Bay are involved in Transport Canada's <a href="#">Let's Talk Transportation</a> discussions about heavy fuel oil.</li> <li>• <b>Ongoing</b> – Cambridge Bay is part of Transport Canada's <a href="#">Cumulative Effects of Marine Shipping initiative</a> (launched in 2017 and ongoing) to understand and mitigate the impacts of shipping activity on coastal areas.</li> </ul>
	<b>4.1.3:</b> Track changes to sea ice and potential impacts to Dolphin and Union caribou.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Information on changes to sea ice and impacts are compiled and integrated into the long-term monitoring program (Action 3.1.1).</li> <li>• Results are shared regularly with partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – Canadian Ice Service (ECCC) <a href="#">monitors sea ice in Canada</a>.</li> <li>• <b>Ongoing</b> – GNWT tracks changes to sea ice in the <a href="#">NWT State of the Environment Report</a>, published every five years (most recently in <a href="#">June 2022</a>).</li> <li>• <b>2018-Ongoing</b> – EHTO leads the <a href="#">Victoria Island Waterway Safety Committee</a>, which brings together local organizations and federal partners (including NTI, KIA, Coast Guard, Canadian Rangers, and local advisors and monitors) to talk about projects related to marine shipping, sea ice and safety that need collective input and discussion.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GN is working with the British Antarctic Survey and World Wildlife Fund to develop an <a href="#">IceNet Artificial Intelligence sea-ice forecast and an Alert System</a> for DU herd conservation. Predicting when and where caribou are expected to cross the ice could allow for adaptive management of icebreaking activities.</li> <li>• <b>2015-2018</b> – Researchers conducted interviews with Elders and hunters in Kugluktuk and Cambridge Bay in partnership with the KHTO (now KAA) and the EHTO. A paper on changes to sea ice and resulting impacts to navigation was published in 2018 (<a href="#">Panikkar et al. 2018</a>).</li> <li>• <b>2018</b> – Researchers at Trent University investigated population genetic structure, genetic diversity and key drivers of diversity for Arctic island-dwelling caribou, including DU caribou. Results published in 2018 highlight how changes to sea ice could inhibit movement between islands and reduce genetic diversity (<a href="#">Jenkins et al. 2018</a>).</li> <li>• <b>2019</b> – ECCC released <a href="#">Canada's Changing Climate Report</a>, including chapters on modeling future climate change, changes in temperature and precipitation and changes in snow, ice and permafrost (<a href="#">Derksen et al. 2019</a>).</li> <li>• <b>2019-2022</b> – IRC and IGC launched the Munaqsiyit (Guardians) Program to help mobilize knowledge from the land for co-management. Monitors recorded and reported wildlife observations relating to health, predation, population, distribution and harvest.</li> <li>• <b>2020</b> – Researchers published a paper on how climate change is impacting food sovereignty and health in Kugluktuk and Cambridge Bay, including availability of caribou (<a href="#">Panikkar and Lemmond 2020</a>).</li> <li>• <b>2021</b> – Researchers at the University of Toronto investigated changes in sea ice and snow phenology in the Canadian Arctic Archipelago over 22 years in response to ongoing changes to climate conditions (<a href="#">Dauginis and Brown 2021</a>).</li> </ul>
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<p><b>Approach 4.2:</b></p> <p>Proactively work with marine/industry/transportation organizations and regulators to minimize human and industrial disturbance and seek ways to preserve sea ice crossings.</p>	<p><b>4.2.1:</b> Investigate mechanisms and authorities that manage shipping traffic within federal government and industry (e.g., Transport Canada) to discuss and move forward shipping concerns (e.g., amending legislation, establishing regulations including seasonal limitations for industry shipping and cruise ships during migration season, and adjusting these in response to caribou level and trend, if necessary).</p>	<p>Critical/ Ongoing</p>	<ul style="list-style-type: none"> <li>• Reports are produced from regional shipping workshops with recommendations to guide future actions.</li> <li>• Outcomes shared with all partners.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – The <a href="#">Draft Nunavut Land Use Plan</a> proposes to protect sea ice from shipping/icebreaking between Victoria Island and the mainland during the fall and spring migration. If approved, these restrictions would remain in place regardless of the status of DU caribou under federal and NWT species at risk legislation.</li> <li>• <b>2019</b> – The Ocean Conservancy launched a campaign calling on companies to <a href="#">pledge to avoid using arctic shipping routes</a>.</li> <li>• <b>2019</b> – EHTO held a workshop in October 2019 (EHTO 2019) to develop a solution to proactively mitigate the risks of icebreaking activities. The workshop resulted in the development of a <a href="#">Notice to Mariners</a> (NOTMAR; see below), which has been in place since 2020.</li> <li>• <b>2019-Ongoing</b> – University of Ottawa's <a href="#">Arctic Corridors and Northern Voices Research Project</a> travelled to eleven communities in the NWT, NU and Quebec to listen to Inuit recommendations on Arctic shipping routes. <a href="#">Outcomes</a> are being passed on to the federal government's <a href="#">Northern Low-Impact Arctic Shipping Corridors</a> initiative.</li> <li>• <b>2020</b> – IGC hosted a workshop on marine shipping legislation in the ISR with community representatives in Inuvik on February 19-20, 2020.</li> <li>• <b>2020-Ongoing</b> – EHTO works with the Canadian Coast Guard and Transport Canada to publish an annual <a href="#">Notice to Mariners</a> (NOTMAR) to mitigate the risks of icebreaking to people traveling on ice and wildlife.</li> </ul>
	<p><b>4.2.2:</b> Collaborate with federal government departments (e.g., DFO) to examine the potential role that marine protected areas could play in protecting the sea ice component of the migration route.</p>	<p>Necessary/ Long-term</p>	<ul style="list-style-type: none"> <li>• Report is produced on potential role and feasibility of a marine protected area to protect sea ice crossings.</li> <li>• Report is shared with all partners.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation action is not being pursued.</li> </ul>

	<b>4.2.3:</b> Develop guidelines, regulations, standard advice, and best practices for shipping, tourism, and industry (including flights) that can be regulated and evaluated.	Critical/ Long-term	<ul style="list-style-type: none"> <li>Guidelines, standard advice and best practices are collaboratively developed, accepted and used, including during project reviews.</li> </ul>	<ul style="list-style-type: none"> <li><b>2022</b> – IRC developed and published a <a href="#">Cruise Ship Management Plan</a> with guidelines against icebreaking and disturbing caribou and/or their habitat.</li> <li><b>2022</b> – The <a href="#">Victoria Island Waterway Safety Committee</a> hosted an Oil Spill Preparedness and Response Workshop as part of Transport Canada’s <a href="#">Cumulative Effects of Marine Shipping</a> initiative.</li> </ul>
	<b>4.2.4:</b> Monitor and evaluate compliance with (or implementation of) regulations, guidelines, standard advice, and best practices mentioned in 4.2.3.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Guidelines, standard advice and best practices are integrated into regulatory practices and regulators ensure they are adhered to.</li> </ul>	<ul style="list-style-type: none"> <li><b>2019-Ongoing</b> – Inuit in Cambridge Bay monitor the Northwest Passage in real-time through the <a href="#">Enhanced Maritime Situational Awareness System</a> (EHTO 2021; <a href="#">GC 2020</a>). The community also plays a lead advisory role through the <a href="#">Victoria Island Waterway Safety Committee</a> and annual <a href="#">Notice to Mariners</a> (NOTMAR; see 4.1.2).</li> <li><b>2022-Ongoing</b> – The ISR <a href="#">Cruise Ship Management Plan</a> describes how monitoring and enforcement should take place for icebreaking activities that result in disturbance to caribou and/or their habitat. Government agencies are responsible for monitoring and enforcing compliance with formal laws and regulations. Onboard Marine Monitors would record any suspected violations and report them to IRC and IGC.</li> <li><b>2022-2023</b> – Transport Canada is working with partners to monitor the implementation of the <a href="#">Notice to Mariners</a> (NOTMAR; see 4.1.2) and evaluate its effectiveness.</li> </ul>
	<b>4.2.5:</b> Identify organizations (e.g., HTOs, NWMB, Nunavut Marine Council, and communities) who could/would play a lead role in promoting standard advice and guidelines for shipping, tourism, and industry.	Critical/ Short-term	<ul style="list-style-type: none"> <li>Organizations are identified and work with relevant partners to establish plans for promoting standard advice and guidelines.</li> </ul>	<ul style="list-style-type: none"> <li><b>2018</b> – The <a href="#">Victoria Island Waterway Safety Committee</a> was established by EHTO and Transport Canada in 2018 as part of work on Canada’s <a href="#">Ocean Protection Plan</a>. The Committee meets quarterly and brings together local organizations and federal partners (including NTI, KIA, Coast Guard, Canadian Rangers, and local advisors and monitors) to talk about projects related to marine shipping and safety that need collective input and discussion.</li> <li><b>2022-2023</b> – Transport Canada is working with other Nunavut communities (e.g. Gjoa Haven, Kugluktuk) to</li> </ul>

				integrate their information and needs into the annual <a href="#">Notice to Mariners</a> (NOTMAR).
	<b>4.2.6:</b> Ensure important areas for Dolphin and Union caribou (including sea ice crossings) are brought forward in the Nunavut land use planning process.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Dolphin and Union caribou habitat needs are brought forward by relevant partners and incorporated into Nunavut land use planning.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Implementation action is ongoing in Nunavut through the land use planning process.</li> <li><b>2021-2022</b> – Co-management partners (including GNWT, GN and ECCC) provided input on the <a href="#">Draft Nunavut Land Use Plan</a>. Throughout the planning process, ECCC promoted the consideration and integration of DU caribou important areas and sea ice crossings into the <a href="#">Draft Nunavut Land Use Plan</a>. The Draft Land Use Plan can be accessed through the Nunavut Planning Commission's <a href="#">Public Registry</a>.</li> <li><b>2022-Ongoing</b> – GN has launched four independent studies to better understand DU movement patterns and habitat to inform conservation, land use planning, and mitigation of human disturbance (see actions under Objective #3).</li> </ul>
	<b>4.2.7:</b> For lands in the NWT that overlap with the NWT-portion of the Dolphin and Union caribou range, explore how a land use planning process under the IFA (s.7.82) might be used to provide greater certainty to land management while maintaining habitat for the population.	Beneficial/ Long-term	<ul style="list-style-type: none"> <li>Report exploring the potential for land use planning processes as per section 7(82) of the IFA to be used to conserve Dolphin and Union caribou habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation action is not underway. However, <a href="#">Community Conservation Plans</a> are in place in the ISR (ongoing).</li> </ul>
	<b>4.2.8:</b> Bring forward Dolphin and Union caribou concerns through interventions in NIRB and EIRB processes.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Partners ensure that guidelines, standard advice and best practices are brought forward during NIRB and EIRB reviews.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – Management partners participate in regulatory screening and review processes on an ongoing basis. For example, partners have been participating in the NIRB review of the Grays Bay Road and Port Project (17XN011) and Hope Bay Project (12MN001): see the <a href="#">NIRB registry</a>.</li> <li><b>Ongoing</b> – HTC's and governments bring forward potential impacts of research activities on caribou or their habitat to be addressed through the <a href="#">NWT Wildlife Research permitting process</a> and <a href="#">Aurora Research Licensing process</a>.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT is working to identify baseline wildlife data needs for the <a href="#">Slave Geological Province Corridor</a>. GNWT contracted Aurora GeoSciences Ltd. to conduct a technical routing analysis of the road corridor to explore options for minimizing impacts to wildlife of an all-weather road alignment from Lockhart Lake to Grays Bay.</li> </ul>
	<p><b>4.2.9:</b> Work with industry, researchers, regulators, governments, HTOs/HTCs and communities to minimize aircraft flights over Dolphin and Union caribou areas during calving and post-calving season.</p>	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Communities and HTCs and HTOs, working with partners, identify when and where flights should be minimized.</li> <li>• These recommendations are implemented using seasonal restrictions in the permitting processes.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GNWT's <a href="#">Flying low? Think again</a> brochure provides guidance on avoiding caribou calving areas during the calving season.</li> </ul>
	<p><b>4.2.10:</b> Work with federal, provincial, and territorial committees/working groups so that <a href="#">Canada 2020 goals and objectives</a><sup>2</sup> can help inform approaches to management of Dolphin and Union caribou.</p>	Beneficial/ Short-term	<ul style="list-style-type: none"> <li>• The 2020 Biodiversity Goals &amp; Targets for Canada inform Dolphin and Union caribou management approaches.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – Management approaches for DU caribou outlined in the DU <a href="#">Management Plan</a> and supported by management partners in the NWT and NU are informed by the <a href="#">2020 Biodiversity Goals and Targets for Canada</a>.</li> <li>• <b>2018</b> – The Canada 2020 Goals and Targets were a driver behind the <a href="#">Canada Nature Legacy Fund</a>, announced in 2018 with additional funding over five years announced in 2021. This fund provided resources to support work on DU caribou during the reporting period (2018-2022). For example, the federal government provided funding for priority species at risk, including DU caribou, under the <a href="#">Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada</a>.</li> </ul>

<sup>2</sup> In 2015, the Government of Canada adopted a suite of national targets known as the “2020 Biodiversity Goals and Targets for Canada.” These 19 targets cover a range of issues, several of which are addressed in the approaches in this progress report (e.g. maintaining Indigenous sustainable use of resources; enhancing knowledge of biodiversity; respecting Indigenous knowledge and using it to inform decision-making; conserving species at risk; and taking measures to help ecological systems adapt to climate change).

<b>Approach 4.3:</b> Manage populations of other species that affect Dolphin and Union caribou habitat.	<b>4.3.1:</b> Promote traditional harvesting of overabundant species through subsistence and sport hunts.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Decrease in populations of overabundant species (e.g., geese).</li> <li>Hunting seasons are changed and more geese eggs are collected.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – ECCC (Canadian Wildlife Service) allows for a spring hunting season for non-subsistence harvesters to hunt over-abundant goose species (snow geese and Ross's geese). Changes to federal legislation were made in 2010 (Nunavut) and 2015 (NWT).</li> </ul>
	<b>4.3.2:</b> Approach other governments to open hunting season earlier for geese.	Necessary/ Short-term	<ul style="list-style-type: none"> <li>Decrease in populations of overabundant species (e.g., geese).</li> <li>Hunting seasons are changed and more geese eggs are collected.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ongoing</b> – ECCC (Canadian Wildlife Service) allows for a spring hunting season for non-subsistence harvesters to hunt over-abundant goose species (snow geese and Ross's geese). Changes to federal legislation were made in 2010 (Nunavut) and 2015 (NWT).</li> </ul>
	<b>4.3.3:</b> Promote collection of geese eggs within communities.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>Decrease in populations of overabundant species (e.g., geese).</li> <li>Hunting seasons are changed and more geese eggs are collected.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation action is not underway. Management Authorities intend to pursue implementation as resources and capacity allow.</li> </ul>
<b>Objective #5: Ensure management is based on population level so future generations can benefit from sustainable harvesting opportunities.</b>				
<b>Approach 5.1:</b> Obtain accurate harvest data.	<b>5.1.1:</b> Increase awareness of the importance of reporting accurate and complete harvest data.	Critical/ Ongoing	<ul style="list-style-type: none"> <li>Increased awareness among community members of the importance of reporting accurate and complete harvest data.</li> <li>Increased participation in ISR CBMP and Nunavut harvest reporting program.</li> </ul>	<ul style="list-style-type: none"> <li><b>Up to 2020</b> – IRC and IGC coordinated the ISR Harvest Study (JS 2018), a long-term community-based monitoring program that promotes monthly harvest reporting by Inuvialuit harvesters from all six communities in the ISR. The Harvest Study has been paused since March 2020 due to funding and capacity constraints.</li> <li><b>2021</b> – WMAC (NWT) and OHTC recommended mandatory sampling and reporting for all caribou harvested on Victoria Island. This OHTC by-law will be implemented in the NWT <i>Wildlife Act</i> regulations in Fall 2023.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – Discussions are ongoing between WMAC (NWT), OHTC and Ulukhaktok community members about the best ways to report harvest information.</li> </ul>
	<p><b>5.1.2:</b> Work with local HTOs/HTCs and regional wildlife management boards to collect accurate information on harvest levels, including submission of harvest return sheet.</p>	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Accurate harvest data is collected and shared with all partners to feed into adaptive management processes.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – OHTC includes a harvest return sheet with sample submission for health and disease monitoring.</li> <li>• <b>Up to 2019</b> – IRC and IGC coordinated the ISR Harvest Study (JS 2018), a long-term community-based monitoring program that promotes monthly harvest reporting by Inuvialuit harvesters from all six communities in the ISR. The Harvest Study has been paused since 2020 due to funding and capacity constraints.</li> <li>• <b>2020</b> – GN made DU caribou harvest reporting mandatory in Nunavut as part of the Total Allowable Harvest.</li> <li>• <b>2021</b> – WMAC (NWT) and OHTC recommended mandatory sampling and reporting for all caribou harvested on Victoria Island. This OHTC by-law will be implemented in the NWT <i>Wildlife Act</i> regulations in Fall 2023.</li> <li>• <b>Ongoing</b> – Discussions are ongoing between WMAC (NWT), OHTC and Ulukhaktok community members about the best ways to report harvest information.</li> </ul>
	<p><b>5.1.3:</b> Report estimated total harvest levels, including the number harvested and the sex ratio, to caribou co-management partners.</p>	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Accurate harvest data, including sex ratio, is shared among all co-management partners and used to estimate total harvest levels.</li> <li>• Increased awareness and use of caribou sample kits among harvesters.</li> <li>• Data from sample kits are analyzed and presented back to partners and communities.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2019-Ongoing</b> – Caribou co-management partners share available harvest information at DU caribou User-to-User meetings.</li> <li>• <b>Ongoing</b> – OHTC is working with WMAC (NWT) to improve reporting and sample collection.</li> <li>• <b>Ongoing</b> – The Summary of Harvest Data for Species in the Inuvialuit Settlement Region report is provided annually by GNWT to WMAC (NWT) and IGC for review.</li> <li>• <b>2020</b> – Data-sharing took place between GNWT and IGC/<a href="#">ISR CBMP</a> to combine all available harvest information for all species in the ISR into one annual report.</li> </ul>

				<ul style="list-style-type: none"> <li>• <b>2022</b> – GN is planning to create an annual harvest report to bring to the User-to-User meetings. This could be combined with NWT information in the same harvest report.</li> </ul>
<b>Approach 5.2:</b> Manage harvesting activities within acceptable limits using adaptive management techniques included in section 6, to ensure that harvesting opportunities are available in the future and treaty rights are fully respected.	<b>5.2.1:</b> Investigate and consider defining acceptable harvest levels appropriate for different population size and trend in the population.	Critical/ Short-term	<ul style="list-style-type: none"> <li>• Framework for defining acceptable harvest based on population size and trend is collaboratively developed and recommended to the appropriate Minister.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2020-Ongoing</b> – GN implemented a Total Allowable Harvest (TAH) in 2020, currently set at 105 DU caribou (2.7% of the population). In 2021, OHTC implemented a voluntary annual harvest limit of 50 caribou and a spring harvest closure from April 15 to July 15. Total harvest level between all communities (NU and NWT) is therefore limited to approximately 4% of the DU population.</li> </ul>
	<b>5.2.2:</b> Elders teach youth and less experienced hunters about wise harvesting practices that minimize negative impacts on caribou (i.e., no wasting of meat, harvesting only what is needed, proper marksmanship, ability to distinguish types and sex of caribou, avoid harvest of cows with calves as well as population leader, submission of samples).	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Linked to Action 2.1.1. Elder-led programs held in each community.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2020</b> – OHTC, IRC and WMAC (NWT) held an Elder/youth on-the-land trip to Haliarvik in February 2020. Youth from Helen Kalvak Elihakvik School in Ulukhaktok learned about traditional harvesting practices and how to differentiate Peary from DU caribou.</li> <li>• <b>Ongoing</b> – GN and GNWT offer free hunter education programs that teach hunters of all backgrounds and experience how to be respectful of wildlife, people and themselves while hunting. <a href="#">Nunavut's program</a> is guided by <i>Pilimmaksarniq</i>; the <a href="#">NWT program</a> was developed in consultation with, and based on the knowledge of, Elders across the territory.</li> </ul>
	<b>5.2.3:</b> Promote alternate food sources through encouraging harvest of other species.	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Other species are utilized, especially when Dolphin and Union caribou herd status is declining or low.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2020</b> – OHTC, IRC and WMAC (NWT) held an Elder/youth on-the-land trip to Haliarvik in February 2020. Youth from Helen Kalvak Elihakvik School in Ulukhaktok learned about traditional harvesting practices and how to differentiate Peary from DU caribou. Elders and youth also harvested muskox and learned the importance of alternative species as food sources.</li> </ul>
	<b>5.2.4:</b> Annually review harvest levels and make management recommendations if necessary (e.g., temporary harvest limitations).	Critical/ Ongoing	<ul style="list-style-type: none"> <li>• Based on outcome of 5.2.1, annual meetings to review harvest levels are conducted with appropriate partners present and, when or if necessary, recommendations on harvest</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – Harvest levels are reported and reviewed as described in 5.1.3.</li> <li>• <b>2018</b> – EHTO restricted and then ceased issuing sport hunting tags for DU caribou in 2018.</li> </ul>



			management are put forward to the respective wildlife management boards and territorial Minister for decision and potential implementation.	<ul style="list-style-type: none"> <li>• <b>2020-Ongoing</b> – GN implemented a Total Allowable Harvest in 2020, currently set at 105 DU caribou (2.7% of the population).</li> <li>• <b>2021-Ongoing</b> – OHTC implemented a voluntary annual harvest limit of 50 caribou and a spring harvest closure from April 15 to July 15.</li> </ul>
<p><b>Approach 5.3:</b></p> <p>Manage predators using adaptive management techniques included in section 6, as a natural and necessary part of the ecosystem.</p> <p>Note that establishing specific actions of a predator management program and implementing such a program is beyond the scope of this management plan.</p>	<p><b>5.3.1:</b> Educate and train hunters about how to harvest predators.</p>	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Development and delivery of hunter education and training takes place that focuses on harvesting of wolves and proper handling of hides.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – GN and GNWT offer free hunter education programs that teach hunters of all backgrounds and experience how to be respectful of wildlife, people and themselves while hunting. <a href="#">Nunavut's program</a> is guided by <i>Pilimmaksarniq</i>; the <a href="#">NWT program</a> was developed in consultation with, and based on the knowledge of, Elders across the territory.</li> <li>• <b>Ongoing</b> – GNWT offers trapper training and fur-handling workshops in NWT communities.</li> </ul>
	<p><b>5.3.2:</b> Continue current management of predator harvesting, according to each jurisdiction's needs.</p>	Necessary/ Ongoing	<ul style="list-style-type: none"> <li>• Number of predators harvested per year reported through existing management systems.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ongoing</b> – HTOs and HTC have been advocating for many years for additional research on the impacts of predators (grizzlies and wolves) on DU caribou and other species within the DU range and support for predator control.</li> <li>• <b>Ongoing</b> – A sample collection program is ongoing for wolves harvested in the NWT. Harvesters submit samples and information from their harvest for a payment. In 2021, this incentive was raised from \$200 to \$600. The <a href="#">Genuine Mackenzie Valley Fur program</a> also provides a Prime Fur bonus for wolf pelts that sell at auction for more than \$200.</li> <li>• <b>2018-Ongoing</b> – GN launched a Wolf Sample Program in 2018 in the Kitikmeot Region. The program was proposed by Kugluktuk harvesters to help reduce the impact of predators on the DU caribou herd. Hunters are paid \$300 to turn in a skull, piece of skin and harvest information.</li> <li>• <b>2021-2022</b> – OHTC and IGC provided funding to further increase the incentive for harvesting wolves and grizzly bears by providing gas money to harvesters.</li> </ul>

				<ul style="list-style-type: none"><li>• <b>2022</b> – WMAC (NWT), WMAC (NS) and IGC completed a <a href="#">Grizzly Bear Co-management Plan</a> and a <a href="#">research compendium</a> about grizzly bears in the ISR.</li></ul>
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## 7. SPECIES REASSESSMENT

The NWT Species at Risk Committee (SARC) is required by the *Species at Risk (NWT) Act* to reassess the status of a listed species every 10 years. SARC reassessed Dolphin and Union caribou as Endangered in the NWT in April 2023 because of a serious and ongoing decline and increasing threats. SARC made several recommendations to conserve the species and its habitat, including enforcement of seasonal restrictions on ship travel through the Northwest Passage; increased monitoring, sampling and harvest reporting; and ongoing harvest education based on cultural teachings of Elders.

As a result of this assessment, the CMA must decide by April 2024 if Dolphin and Union caribou should be listed as an Endangered species in the NWT. If listed as Endangered, a recovery strategy must be prepared within one year of the listing date.

At the national level, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reassessed the status of Dolphin and Union caribou in Canada in 2017. COSEWIC also found Dolphin and Union caribou to be Endangered (previously Special Concern) and has recommended up-listing the species under the *Species at Risk Act*. ECCC conducted engagement and consultation on the up-listing from 2018-2022. A decision on listing is currently under consideration by the Government of Canada.

## 8. MANAGEMENT PLAN REVIEW

The CMA is required under the *Species at Risk (NWT) Act* to review a management plan or recovery strategy every five years. The [Management Plan for Dolphin and Union Caribou in the Northwest Territories and Nunavut](#) was completed in 2018 and is therefore due for review in 2023.

The purpose of the review is to determine whether the management plan continues to meet the needs of management partners in the NWT and Nunavut to achieve the management goal for the species.

However, given the processes currently underway to decide whether to list Dolphin and Union caribou as an Endangered species under NWT and federal legislation, management partners decided that a more in-depth review of the management plan should take place after the listing decision. This review may form part of the process to develop a recovery strategy, if required.

### How will we know if the management plan is working?

- Status of Dolphin and Union caribou has not become Threatened or Endangered when reassessed by SARC every 10 years, and by COSEWIC every 10 years.
- The Dolphin and Union caribou population allows for continued subsistence harvests.
- Dolphin and Union caribou move freely throughout their range on Victoria Island and the mainland.

Management partners recognize the status assessments of Endangered at both the NWT and national levels are troubling indicators for the health and viability of the population, but they do not come as a surprise. As indicated earlier in this report, both community observations and scientific surveys have documented a declining trend and changes to the distribution of Dolphin and Union caribou. As a result, management actions have intensified over the last five years and work is underway to try and understand these changes and reduce threats to Dolphin and Union caribou, including icebreaking, harvest and predation. Dolphin and Union caribou are at even greater risk now than when the management plan was developed in 2017—and the need for coordinated conservation action is more important than ever.

## 9. NEXT STEPS

Progress has been made over the last five years toward meeting the management objectives for Dolphin and Union caribou. In particular, communities in the range of Dolphin and Union caribou have taken proactive measures to reduce harvest pressure and develop solutions to mitigate the risks of icebreaking activities. However, despite management efforts, the population continues to decline at a rapid and concerning rate.

### Managing threats

Climate change has been identified as a high concern for Dolphin and Union caribou, as it can impact body condition (access to food, insect harassment, etc.), migration and survival. Threats related to climate change are extremely difficult to manage or reverse.

Management partners have also raised concerns around future development and shipping traffic within the range of Dolphin and Union caribou. Actions to mitigate these threats are described in the management plan and many are already underway. Still, there is more work to be done.

More research and monitoring are needed on factors affecting Dolphin and Union caribou, including human activity (roads and aircraft), insects, ice and climate change. HTOs and HTC's have been advocating for many years for additional research on the impacts of predators (grizzlies and wolves) on Dolphin and Union caribou and other species within their range. In May 2023, the Government of Nunavut increased incentives for wolves harvested on the Dolphin and Union caribou range.

### Listing status

In 2024, the CMA will decide whether to list Dolphin and Union caribou as Endangered on the NWT List of Species at Risk (a federal listing decision is also pending).

Processes under the *Species at Risk (NWT) Act* to prepare for the listing decision (that is, engagement and consultation in 2023-24 about the assessment) will help determine whether the actions in the [\*Management Plan for the Dolphin and Union Caribou \(Rangifer tarandus groenlandicus x pearyi\) in the Northwest Territories and Nunavut\*](#) continue to be appropriate and set a path forward for the conservation and recovery of Dolphin and Union caribou.

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## APPENDIX A – MANAGEMENT PARTNERS

This section describes the organizations that were involved in the development of the progress report for Dolphin and Union caribou.

### Wildlife Management Advisory Council (NWT)

The Wildlife Management Advisory Council (WMAC) (NWT) is the main instrument of wildlife management in the Western Arctic Region of the NWT. The WMAC (NWT) advises the federal and territorial governments on wildlife policy, management, regulation, and administration of wildlife, habitat and harvesting in the Inuvialuit Settlement Region (*Inuvialuit Final Agreement*, sections 14 and 12, respectively). The WMAC (NWT) works collaboratively with the Inuvialuit Game Council, Hunters and Trappers Committees (HTCs), and governments in research, monitoring and management of wildlife and their habitat. The WMAC (NWT) consults regularly with the Inuvialuit Game Council and Hunters and Trappers Committees, and these groups assist the Councils in carrying out their functions, upon request.

### Inuvialuit Game Council

The Inuvialuit Game Council (IGC) represents the collective Inuvialuit interest in wildlife. This board consists of one elected Chairman and one representative from each of the Hunters and Trappers Committees across the Inuvialuit Settlement Region. The Inuvialuit Game Council (IGC) appoints Inuvialuit members for all joint Government/Inuvialuit bodies that have an interest in wildlife and advises the appropriate governments through WMAC (NWT & North Slope) or otherwise as appropriate, on policy, legislation, regulation and administration respecting wildlife, conservation, research, management, and enforcement. The Inuvialuit Game Council (IGC) further assigns hunting and trapping areas within the ISR for the purpose of harvesting and allocates Inuvialuit quotas among the ISR communities, where appropriate.

### Government of the Northwest Territories

The Government of the Northwest Territories (GNWT), represented by the Minister of Environment and Climate Change (ECC), has ultimate responsibility for the conservation and management of wildlife, wildlife habitat, and forest resources in the NWT, subject to land claims and self-governance agreements. It is the Minister of ECC's ultimate responsibility to prepare and complete management plans and recovery strategies under the *Species at Risk (NWT) Act*. ECC engages with other GNWT departments on species at risk issues through the Inter-departmental Species at Risk Committee, inter-departmental committees of Directors and Deputy Ministers, and Executive Council.

### Government of Nunavut

The Government of Nunavut (GN) Department of Environment (ENV) is responsible for the protection, management and sustainable use of wildlife in Nunavut. The GN conducts scientific research and collects *Inuit Qaujimajatuqangit* for species throughout Nunavut. The GN works with co-management partners to develop and implement territorial management plans and federal recovery documents for species at risk. The Minister of

Environment has the final authority to accept decisions made by the Nunavut Wildlife Management Board.

### **Nunavut Wildlife Management Board**

The Nunavut Wildlife Management Board (NWMB or Board) is an Institution of Public Government established in 1994. The NWMB was established in accordance with the Nunavut Agreement, which was ratified on May 25, 1993. The Board is the main instrument of wildlife management in the Nunavut Settlement Area (NSA) and is a co-management Board that consists of nine appointed members. The Board and its co-management partners work together to combine the knowledge and understanding of wildlife managers, users, and the public to make decisions concerning the management of wildlife in Nunavut. The NWMB vision is "conserving wildlife through the application of *Inuit Qaujimajatuqangit* and scientific knowledge."

### **Kitikmeot Regional Wildlife Board**

The Kitikmeot Regional Wildlife Board (KRWB) is comprised of the Chairman from each community Hunters and Trappers Organization (HTO) in the Kitikmeot region: Kugluktuk, Cambridge Bay, Bathurst Inlet, Bay Chimo, Gjoa Haven, Taloyoak and Kugaaruk. These elected members represent the region's wildlife interests, as well as collectively held knowledge (i.e. *Inuit Qaujimajatuqangit*) in the region. As set out under Nunavut Agreement (1993) Article 5.7, KRWB is responsible for the regulation of harvesting practices and techniques among members of HTOs in the Kitikmeot, including the use of non-quota limitations; the allocation and enforcement of regional basic needs levels and adjusted basic needs levels among their HTOs; the assignment to any person or body other than an HTO, with or without valuable consideration and conditions, of any portion of regional basic needs levels; and, generally, the management of harvesting among members of Kitikmeot HTOs. Today, KRWB roles have shifted toward representing Kitikmeot communities in all matters concerning shared wildlife management and research, and leading and implementing community-based wildlife research initiatives.

### **Government of Canada**

The Government of Canada has ultimate responsibility for the management of migratory birds (as described in the *Migratory Birds Convention Act*, 1994), fish, marine mammals, and other aquatic species (as described in the *Fisheries Act*). It also has responsibilities for the implementation of the federal *Species at Risk Act*, including enforcement of the general prohibitions and critical habitat prohibitions where listed species occur on federal lands that belong to her Majesty, in Right of Canada, or under the direct authority of the Minister of the Environment (national wildlife areas and migratory bird sanctuaries) and the Minister responsible for the Parks Canada Agency (national parks, national park reserves and national historic sites).