

Progress Report on the Conservation and Recovery of Boreal Caribou (*Rangifer tarandus caribou*) in the Northwest Territories (2017-2021)



SPECIES AT RISK (NWT) ACT

Progress Report and Review Series 2022

For copies of the progress report, recovery strategy or for additional information on Northwest Territories (NWT) species at risk, please visit the NWT Species at Risk website (www.nwt-speciesatrisk.ca).

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Cover photo: Boreal caribou, John Nagy, GNWT

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 NWT that share responsibility for the conservation and recovery 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. The Conference also reviews management plans and recovery strategies every five years and reports on progress towards meeting objectives. Only Management Authorities that have jurisdiction for a species are involved in making decisions.

What is a Threatened species?

Under the Act, a Threatened species is a species that is likely to become endangered in the NWT if nothing is done to reverse the factors leading to its extirpation or extinction. A recovery strategy must be completed for a Threatened species within two years of the species being added to the NWT List of Species at Risk.

What is a recovery strategy?

Under the Act, a recovery strategy is a document that recommends objectives for the conservation and recovery of a Threatened species. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences to the species and its habitat.

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 towards meeting its objectives.

ACKNOWLEDGMENTS

This progress report was developed collaboratively by the partners involved in the management of boreal caribou in the NWT: Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Sahtú Renewable Resources Board, Wek'èezhìi Renewable Resources Board, Tłı̄chǫ Government, the Government of the Northwest Territories and the Government of Canada.

We would also like to thank participants in the Conference of Management Authorities, and Acho Dene Koe First Nation and the North Slave Métis Alliance in particular, for providing feedback and reporting the actions they have taken towards meeting the objectives of the [Recovery Strategy for the Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#). Further information on the governments and organizations that contributed to the development of this report is provided in Appendix A.

Preparation of this progress report was funded by Environment and Natural Resources (ENR). We would like to thank the Species at Risk Secretariat for addressing the requirements of a progress report, as required by the *Species at Risk (NWT) Act*. The principal preparers of this progress report were Mélanie Routh and Joslyn Oosenbrug (Species at Risk Implementation Specialists) and Michele Grabke (Species at Risk Implementation Supervisor).

Background information in this document is summarized from the NWT Species at Risk Committee's [Species Status Report for Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#) (SARC 2022). We would like to thank SARC for its work on this detailed and extensive assessment of the status of boreal caribou in the NWT.

ACRONYMS

ADKFN	Acho Dene Koe First Nation
CMA	Conference of Management Authorities
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DGG	Déłjñę Got'jñę Government
DKFN	Denínu Kúé First Nation
ECCC	Environment and Climate Change Canada
EISC	Environmental Impact Screening Committee
ENR	Department of Environment and Natural Resources, GNWT
GNWT	Government of the Northwest Territories
GRRB	Gwich'in Renewable Resources Board
GTC	Gwich'in Tribal Council
IGC	Inuvialuit Game Council
IKC	Indigenous Knowledge Circle
ISR	Inuvialuit Settlement Region
KFN	Kátł'odeeche First Nation
KTFN	Ka'a'gee Tu First Nation
LKFN	Łíídlj Kúé First Nation
NBCKC	National Boreal Caribou Knowledge Consortium
NRCan	Natural Resources Canada
NSMA	North Slave Métis Alliance
NWT	Northwest Territories
RRC	Renewable Resources Council
SARC	NWT Species at Risk Committee
SCARF	Species Conservation and Recovery Fund
SRRB	Sahtú Renewable Resources Board
SSI	Sahtu Secretariat Incorporated
TASR	Tłjchq All-Season Road
TG	Tłjchq Government
WMAC (NWT)	Wildlife Management Advisory Council (NWT)
WMMP	Wildlife Management and Monitoring Plan
WPFN	West Point First Nation
WRRB	Wek'èezhì Renewable Resources Board
YKDFN	Yellowknives Dene First Nation

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PROGRESS REPORT

1. INTRODUCTION

This document is a report on progress towards the conservation and recovery of boreal caribou in the Northwest Territories (NWT) from 2017 to 2021. This report meets the legislative requirement for a progress report under the *Species at Risk (NWT) Act*.

Under subsection 73(1) of the *Species at Risk (NWT) Act*, the Conference of Management Authorities (CMA) must publish a progress report every five years, or sooner, on the actions undertaken to implement a management plan or recovery strategy and on the progress made towards meeting its objectives.

The [Recovery Strategy for the Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#) was completed by the CMA in February 2017 (CMA 2017). This action-oriented planning tool identifies how the conservation and recovery of boreal caribou can be accomplished. It provides guidance and directions to co-management partners, helping them decide what actions to take, how to prioritize work, and how to allocate resources.

An [agreement to implement](#) the recovery strategy for boreal caribou was finalized on November 24, 2017. The implementation agreement outlines the actions Management Authorities intend to take to implement the recovery strategy.

This progress report highlights the actions taken to implement the recovery strategy for boreal caribou from 2017 to 2021 and progress made towards meeting its objectives.

Section 74 of the *Species at Risk (NWT) Act* also states that the CMA shall review a management plan or recovery strategy every five years. A review of the recovery strategy for boreal caribou took place on March 31, 2022, and the findings are summarized in this document.

Boreal Caribou in the NWT		
	NWT	Canada
Status	Threatened	Threatened
Listed	2014	2003
Recovery strategy	2017	2012, 2020 (amended)

2. MANAGEMENT AUTHORITIES FOR BOREAL CARIBOU

Success in the conservation and recovery of boreal caribou depends on the commitment and cooperation of many different groups involved in implementing the directions set out in the recovery strategy. This includes renewable resources boards and governments with formal responsibility for wildlife management, as well as many other partners that work together to care for the land, water and wildlife of the NWT.

The Management Authorities that share responsibility for the conservation and recovery of boreal caribou in the Northwest Territories are:

- Wildlife Management Advisory Council (NWT)
- Gwich'in Renewable Resources Board
- Sahtú Renewable Resources Board
- Wek'èezhii Renewable Resources Board
- Tłıchq̓ Government
- Government of the Northwest Territories
- Government of Canada

Further information on these Management Authorities is provided in Appendix A.

Participants in the CMA were also invited to contribute to this progress report. This includes the Acho Dene Koe First Nation, Akaitcho Territory Government, Beverly and Qamanirjuaq Caribou Management Board, Dehcho First Nations, Kátł'odeeche First Nation, North Slave Métis Alliance, Northwest Territory Métis Nation and Salt River First Nation.

3. SPECIES INFORMATION

Common name in English:	boreal caribou
Names in other languages:	tuktut, tuttut (Inuvialuktun) tuktu (Inuinnaqtun) tuttu (ᐃᓄᐅᓄᓄᓄ/Inuktitut) vadzaih (Dinjii Zhu' Ginjik) gop'í gotq̓dzi, deshıwánéné t̓q̓dzı (Sahtúot'ıne Yatı) t̓q̓dzı (Tłıchq̓ Yatıı) mbedzih (Dene Zhatıé) t̓q̓dzıé (Dēne Sı́łné Yatıé) sakaw atihk (Nēhiyawēwin) caribou des bois (Français)
Scientific name:	<i>Rangifer tarandus caribou</i>

Boreal caribou are medium-sized members of the deer family (Cervidae) measuring 1.0-1.2 m at shoulder height and weighing 110-210 kg. They are dark to tawny brown with white manes and sides, with a white area on the rump below the tail. Unlike other members of the deer family, both males and females grow antlers. Boreal caribou are highly adapted to cold winter conditions due to their large shovel-like hooves that allow travel on snow and furred muzzle for foraging.

Boreal caribou are found throughout the boreal forest of Canada, ranging from the northeast corner of Yukon, east to Labrador and as far south as Lake Superior. In the NWT, they are found east of the Mackenzie Mountains and south of the treeline with their distribution almost exclusively coinciding with the Taiga Plains Ecoregion (Figure 1). This ecoregion consists primarily of low-lying terrain with abundant peatland cover. Boreal caribou prefer to stay within the forest year-round and are naturally found in low densities as a strategy to avoid predation by wolves.

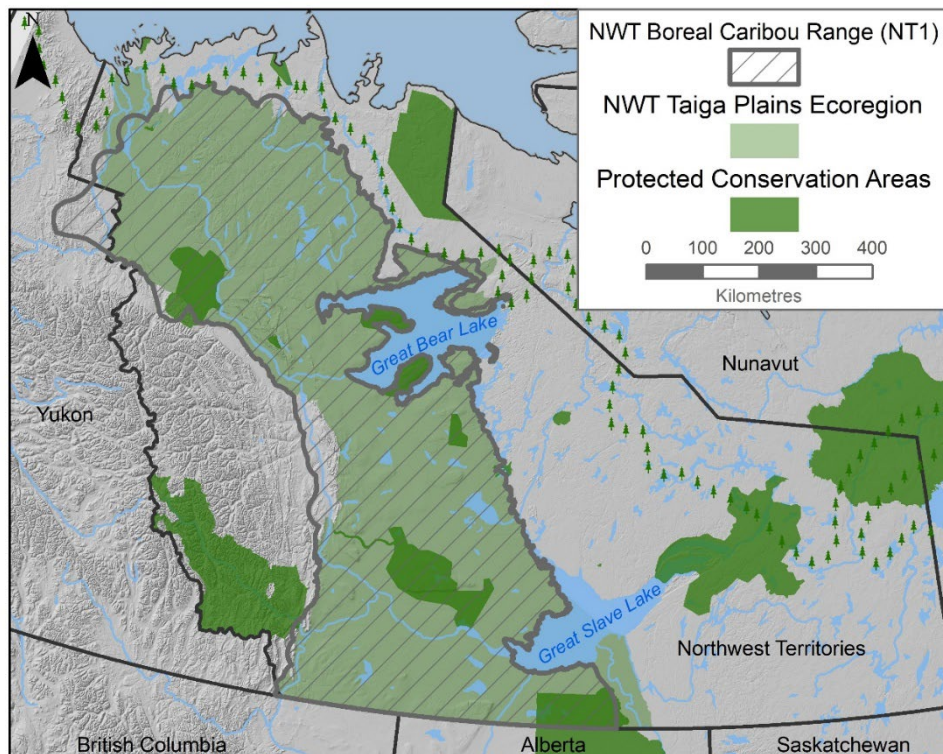


Figure 1. Boreal caribou (*Rangifer tarandus caribou*) distribution in the NWT.
Map courtesy of R. Abernethy, GNWT.

4. HOW ARE BOREAL CARIBOU DOING IN THE NWT?

Most recent population estimates and population trends for boreal caribou can be found in the [Species Status Report for Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#) (SARC 2022). These estimates are based on research, surveys and monitoring projects completed since the publication of the [Recovery Strategy for the Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#) (CMA 2017).

5. CONSERVATION AND RECOVERY

5.1. Conservation and Recovery Goal and Objectives

The recovery strategy recommends the following objectives to meet the conservation and recovery goal for boreal caribou:

Conservation and Recovery Goal

The conservation and recovery goal outlined in the recovery strategy is to **ensure a healthy and sustainable boreal caribou population across their NWT range that offers harvesting opportunities for present and future generations.**

1. Ensure there is adequate habitat across the NWT range to maintain a healthy and sustainable population of boreal caribou.
2. Ensure that harvest of boreal caribou is sustainable.
3. Obtain information to inform sound management decisions, including boreal caribou ecology, key habitat and population indicators, and cumulative effects.
4. Manage boreal caribou collaboratively, using adaptive management practices and the best available information.
5. Exchange information with NWT people about boreal caribou in all regions.
6. Further to the national recovery strategy, ensure recovery obligations for protecting critical habitat and maintaining a self-sustaining population are met or exceeded in NWT.

5.2. Approaches to Achieve Objectives

Nineteen approaches are recommended in the recovery strategy to achieve these six objectives (Table 1). Each is assigned a relative priority (critical, necessary or beneficial) and relative timeframe (short-term, long-term or ongoing). In addition, 74 specific actions are recommended for the conservation and recovery of boreal caribou in the NWT.

Relative priority can be *critical, necessary or beneficial*. Critical approaches are the highest priority for the conservation of boreal caribou and should be implemented sooner rather than later. Necessary approaches are important to implement for the conservation of boreal 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.

6. PROGRESS TOWARDS CONSERVATION AND RECOVERY FROM 2017 TO 2021

6.1. Highlights

We recognize that many governments, organizations and individuals are doing important work to conserve and recover boreal caribou in the NWT.^a

Progress has been made towards implementing all objectives in 2017–2021, including:

- Finalizing a framework for range planning in the NWT, establishing working groups for regional range plans and completing an [interim Wek'èezhìi range plan](#)
- Conducting a boreal caribou population abundance survey in the North Slave region in 2020
- Continuing and expanding programs for monitoring boreal caribou population trend and movements
- Developing the Tòdzì Atlas for the Sahtú region
- Launching the [NWT Species and Habitat Viewer](#), an online tool where users can access spatial data on boreal caribou habitat in the NWT
- Conducting a comprehensive review of standards, guidelines and best practices across Canada for mitigating impacts of development on boreal caribou
- Promoting regular harvest surveys and establishing a harvest monitoring program for the Tł̨chq̨ Highway
- Holding two public listening sessions (hearings) in the Sahtú region asking “What is the most effective way to conserve caribou?”
- Enhancing cooperation and coordination on caribou management within the NWT and between jurisdictions

How will we know if the recovery strategy is working?

- Status of boreal caribou has not become further at risk when re-assessed by the NWT Species at Risk Committee (SARC).
- Proportion of habitat that is disturbed and fragmented has not increased.
- Population trends are stable, increasing or not indicative of long-term declines.
- Boreal caribou are still found across the NWT range.
- People are still able to harvest boreal caribou.

^a Due to the number and range of organizations working on boreal caribou conservation and recovery in the NWT, we recognize there may be additional work benefitting boreal caribou that is not captured in this report.

6.2. Progress Overview

Completed	In progress	Not started	Not pursuing ²
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Table 1. Progress on approaches for conservation and recovery of boreal caribou in the NWT, 2017-2021.

Goal: Ensure a healthy and sustainable boreal caribou population across their NWT range that offers harvesting opportunities for present and future generations.				
Approaches	Conservation and Recovery Actions	Relative Priority/ Time Frame	Performance Measure	Progress (2017-2021)
Objective #1: Ensure there is adequate habitat across the NWT range to maintain a healthy and sustainable population of boreal caribou.				
Approach 1.1: Develop region-specific range plans and an overall NWT-Yukon range plan for habitat management.	1.1.1: Create range plans by mapping and prioritizing caribou habitat areas, identifying the tools to manage disturbance in each area, and showing how these areas contribute to achieving or maintaining adequate habitat.	Critical/Ongoing	Number of region-specific range plans completed and in-place.	<ul style="list-style-type: none"> 2019 – ENR³ held five regional information sessions on developing a framework for boreal caribou range planning in the Wek'èezhìi, Sahtú, Gwich'in and Inuvialuit regions in June and July 2019. 2017-2019 – GNWT worked with partners to develop a framework for NWT range plans and released a Framework for Boreal Caribou Range Planning (GNWT 2019a) in August 2019. 2019 – Southern NWT and Wek'èezhìi range planning working groups formed. 2020 – Gwich'in and Inuvialuit range planning working groups formed. 2020-2021 – Southern NWT Working Group conducted habitat mapping workshops to 1) review, verify and update existing Indigenous knowledge habitat mapping, and 2) identify and map

² **Not pursuing:** Some implementation actions in the management plan are more appropriately led by other partners, and some actions are not currently a high priority for Management Authorities to implement given other higher priorities and resource constraints.

³ **ENR/GNWT:** Where an action is solely the responsibility of the Department of Environment and Natural Resources (ENR), the action is attributed to ENR. Actions or publications involving multiple departments are attributed to the Government of the Northwest Territories (GNWT).

				<p>development interests. Community meetings were held in Southern NWT in 2021 to review and verify Indigenous knowledge mapping.</p> <ul style="list-style-type: none"> • 2021 – ENR worked with SRRB and Sahtu Secretariat Incorporated (SSI) to develop the process for community/regional engagement and development of the Sahtú regional range plan. • 2021 – Wek'èezhìi Range Plan Working Group finalized the interim Wek'èezhìi range plan. • 2021 – Community information sessions on regional range planning were held in Aklavik and Inuvik.
	<p>1.1.2: Where range plans identify gaps (areas without appropriate tools in place to manage disturbance), consider the suite of northern tools and ensure mechanisms are in place to manage disturbance.</p>			<ul style="list-style-type: none"> • Ongoing – Suite of northern tools considered in the interim Wek'èezhìi range plan. GNWT continues to explore options for implementing range plans through land use plans.
	<p>1.1.3: Coordinate range plans among NWT regions and with neighbouring jurisdictions to ensure habitat connectivity extends across boundaries.</p>			<ul style="list-style-type: none"> • 2019-2021 – During the Wek'èezhìi range planning process, ENR conducted Marxan analyses to help delineate management class areas at the scale of the entire NWT range. Connectivity was considered based on movements of collared caribou between Southern NWT and Wek'èezhìi. • 2021 – Yukon representative were invited to, and attended, the February 2021 Gwich'in Working Group meeting. • 2021 – Alberta and B.C. representatives were invited to, and attended, the December 2021 Southern NWT Working Group meeting.
	<p>1.1.4: Every 5 years, review the effectiveness of range plans and update them.</p>			<ul style="list-style-type: none"> • Implementation action is not underway. • The NWT Framework for Boreal Caribou Range Planning recommends reviewing range plans every 5 years and updating every 10 years.
<p>Approach 1.2: Monitor landscape change annually.</p>	<p>1.2.1: Track natural landscape changes, especially fire disturbance.</p>	<p>Critical/Ongoing</p>	<p>Maintain the proportion of disturbed and fragmented habitat so it</p>	<ul style="list-style-type: none"> • 2021 – TG completed a vegetation study along the Tłı̄ch̄o Highway corridor in September 2021. • 2021 – SRRB piloted an approach to monitoring landscape change, particularly focused on treeline expansion due to climate change and lichen abundance and diversity.

			does not increase in the last 5 years.	<ul style="list-style-type: none"> • Ongoing – Fire disturbance is tracked annually by ENR.⁴
	1.2.2: Track human-caused landscape changes, using both remote sensing and current disturbance data from industry.		Maintain at least 65% of boreal caribou habitat as undisturbed, or make progress towards achieving this target.	<ul style="list-style-type: none"> • 2019 – ADKFN engaged a contractor to study the natural and industrial impacts to boreal caribou within ADKFN's traditional territory (ADKFN 2018). • 2021 – SRRB developed the Petroleum History Project to examine impact of the petroleum extraction industry in the Norman Wells Proven Area.
	1.2.3: Compile and improve existing records of human-caused landscape change.			<ul style="list-style-type: none"> • 2020 – GNWT began a pilot project to try and improve seismic disturbance data. • 2021 – GNWT secured federal funding for a project to develop an inventory of candidate habitat restoration offset sites. This project will include compiling data on human-caused landscape changes and adding attributes such as vegetation type. • Ongoing – The NWT Cumulative Impact Monitoring Program's Inventory of Landscape Change maintains annually updated spatial data from land and water board permit registries.
	1.2.4: Work with land and water boards, land managers and industry to ensure appropriate information on activities in boreal caribou habitat is submitted, compiled and made publicly available.			<ul style="list-style-type: none"> • Ongoing – The NWT Cumulative Impact Monitoring Program's Inventory of Landscape Change maintains annually updated spatial data from land and water board permit registries. • Ongoing – In the Inuvialuit Settlement Region, information is available on the Environmental Impact Screening Committee (EISC) registry and reviewed regularly by co-management during the screening process.
	1.2.5: Develop criteria to determine which types of human development activities will be considered as contributing to the disturbance footprint for boreal caribou.			<ul style="list-style-type: none"> • 2018-2019 – ENR provided data and input on a draft ECCC report examining the relationship between boreal caribou demographic data from ranges across Canada (including NWT) and different ways of characterizing human and natural disturbances (e.g. linear feature density by type, fire age categories, patch sizes, and availability of highly selected habitat).

⁴ Most recent data (wildfires from 1981-2020) showed that 71% of habitat remained undisturbed in the NT1 boreal caribou range. Natural disturbances (e.g. fire) account for the majority of the disturbance (21.5% of the range).

				<ul style="list-style-type: none"> • Ongoing – GNWT continues to use criteria published by ECCC in the national recovery strategy for boreal caribou (EC 2012; ECCC 2020)⁵, where areas within 500 m of a human disturbance footprint visible on 1:50,000 scale Landsat imagery are considered part of the human disturbance footprint.
	<p>1.2.6: Develop criteria to determine when anthropogenic disturbances and natural disturbances have become functional caribou habitat again.</p>			<ul style="list-style-type: none"> • Ongoing – The interim Wek'èezhìi range plan (GNWT 2021) provides specific guidelines around functional restoration criteria. • Ongoing – GNWT (ENR) and the Délı̨ne Got'ı̨ne Government (DGG) are part of the Habitat Restoration Working Group of the National Boreal Caribou Knowledge Consortium (NBCKC), a knowledge-sharing forum launched in 2018 under Canada's federal action plan for boreal caribou.
	<p>1.2.7: Compile and manage spatial information on landscape change.</p>			<ul style="list-style-type: none"> • 2018–2021 – ENR developed and updated Resource Selection Function models and maps for boreal caribou habitat selection and used them in development of the interim Wek'èezhìi range plan. A presentation on the project is available here. • 2021 – GNWT launched the NWT Species and Habitat Viewer, which allows users to access spatial data on boreal caribou habitat. This tool will help developers and regulators identify, avoid, minimize and mitigate impacts of proposed development projects on boreal caribou habitat. • 2021 – SRRB developed a Tòdzı̨ Atlas, including compilation of publicly available spatial information on landscape change.
	<p>1.2.8: Report natural and human-caused disturbance levels (both current and cumulative) to land management authorities.</p>			<ul style="list-style-type: none"> • 2021 – GNWT launched the NWT Species and Habitat Viewer, which allows users (including land management authorities) to access spatial data on boreal caribou habitat, including levels of natural and human-caused disturbance. • Ongoing – Reports are provided annually at the February CMA Meeting through implementation updates. • Ongoing – GNWT works with proponents and land management authorities through the regulatory screening and assessment process

⁵ **NB:** Percent buffered human disturbance estimates have not been updated since ECCC released its last human disturbance layer (up to 2015). The current human disturbance estimate across the NT1 boreal caribou range remains at 9.1%. An updated human disturbance layer (up to 2020) is expected in 2022.

				to identify, minimize and mitigate impacts of human activities on boreal caribou and its habitat.
	1.2.9: Develop products to facilitate the timely and effective consideration of boreal caribou in environmental impact assessment and other land use decisions (e.g. a screening tool for project applications that provides a real-time assessment of boreal caribou habitat supply and how the proposed development would affect habitat supply, relative to critical habitat thresholds).			<ul style="list-style-type: none"> • 2021 – GNWT developed a new draft of industry guidelines for developers operating in boreal caribou habitat that incorporated feedback from external review held in 2020. • 2021 – GNWT launched the NWT Species and Habitat Viewer, which allows users to access spatial data on boreal caribou habitat, as well as assess boreal caribou habitat disturbance levels and how a proposed development would affect disturbance. This tool will help developers and regulators identify, avoid, minimize and mitigate impacts of proposed development projects on boreal caribou habitat.
Approach 1.3: Manage fire disturbance as a natural and necessary part of boreal caribou habitat.	1.3.1: Adhere to the existing fire management policy to the best extent possible, recognizing that forest fire is a natural phenomenon and that fire suppression may be unsuccessful.	Necessary/Ongoing	N/A	<ul style="list-style-type: none"> • 2021 – SRRB initiated wildfire planning with Sahtú communities in preparation for the 2023 Public Listening Session (Hearing). • 2021 – ENR identified and mapped late winter boreal caribou habitat (polygons) in the NWT and provided this information, as well as management class areas from the interim Wek'èezhii range plan, as initial input into fire management decisions. • Ongoing – GNWT makes fire management decisions in accordance with its fire management policy. The policy allows for caribou habitat to be designated as values at risk.⁶
	1.3.2: Explore the use of fire management tools for the maintenance of high value caribou habitat areas. Possible tools include classifying caribou habitat as a value at risk, landscape-level prescribed burns to limit fire growth potential, fire breaks (including strategic planning of timber harvesting), and fuel management.			<ul style="list-style-type: none"> • 2021 – ENR identified and mapped late winter boreal caribou habitat (polygons) in the NWT and provided this information, as well as management class areas from the interim Wek'èezhii range plan, as initial input into fire management decisions. • 2021 – SRRB secured funding to explore various fire management tools and their applicability in the Sahtú context.

⁶ In the GNWT [Policy on Forest Fire Management](#), “values at risk” refers to human life and the specific or collective set of natural or cultural resources and improvements/developments that have measurable or intrinsic worth and that could or may be destroyed or otherwise altered by fire in any given area. Values at risk are considered as inputs or criteria in an overall assessment of fire management response. In the policy, there is a hierarchy of priorities for values at risk in which human life and property are highest priority.

<p>Approach 1.4: Manage human-caused landscape disturbance.</p>	<p>1.4.1: Explore concepts of ecosystem-based management for managing disturbances and habitat requirements holistically (or in an integrated way).</p>	<p>Critical/Ongoing</p>	<p>Number of guidance documents (e.g. standard advice for industry) produced, distributed, and in use.</p> <p>Number of instances where guidance was added to a permit and/or adhered to by the proponent.</p>	<ul style="list-style-type: none"> • 2021 – GNWT partnered with the Canadian Forest Service to prepare a baseline report summarizing current ecological conditions of forests in the NWT and how climate changes are expected to alter forest ecosystems, including caribou habitat (Huberman et al. 2022). • 2021 – ENR is collaborating with Natural Resources Canada to develop a robust 200-year fire history record for the southern NWT. Field work was complete as of 2021, and a report is being prepared.
	<p>1.4.2: Review and update existing guidelines and standard advice for industry, and develop new guidance documents where needed, to address current best practices for mitigating the impacts of development (e.g. seismic techniques, restoration of habitat and management of access).</p>			<ul style="list-style-type: none"> • 2018-2019 – GNWT completed a comprehensive review and recommendations report of boreal caribou industry standards, guidelines and best practices across Canada. • 2021 – GNWT finalized a new draft of industry guidelines for developers operating in boreal caribou habitat that incorporated feedback from external review held in 2020. • 2021 – SRRB initiated preliminary planning for the 2024 Public Listening Session (Hearing) on <i>Caribou and the Sahtú Mixed Economy</i>, which is expected to address this action. • 2021 – GRRB updated its standard advice to regulatory permit applicants which provides best practices for minimizing their impacts on wildlife.
	<p>1.4.3: Develop or update guidelines and/or regulations under the NWT <i>Wildlife Act</i> for how to plan and conduct development activities to minimize impacts on boreal caribou and their habitat, and ensure that wildlife management and monitoring plans (WMMPs) for development projects adequately address boreal caribou and their habitat.</p>			<ul style="list-style-type: none"> • 2019 – Regulations under the NWT <i>Wildlife Act</i> were amended to enable the GNWT to require and enforce wildlife management and monitoring plans (WMMPs), when appropriate. A WMMP demonstrates how development will minimize impacts on boreal caribou and its habitat. The regulations came into force on July 1, 2019. • 2021 – GNWT developed a habitat offset and restoration plan to offset boreal caribou habitat lost through the Tł̨chq̨ Highway project and submitted for approval to WRRB. WRRB approved the plan. • 2021 – GNWT finalized a new draft of industry guidelines for developers operating in boreal caribou habitat that incorporated feedback from external review held in 2020. • 2021 – SRRB initiated preliminary planning for the 2024 Public Listening Session (Hearing) on <i>Caribou and the Sahtú Mixed Economy</i>, which is expected to address this action. • Ongoing – WRRB reviews and approves WMMPs for projects in Wek'èezhì.

				<ul style="list-style-type: none"> • Ongoing – WMAC (NWT) is working with Inuvialuit Petroleum Corporation to refine their WMMP to mitigate impacts of the Inuvialuit Energy Security Project on caribou and other species.
	<p>1.4.4: Work with applicants to consider how potential impacts on boreal caribou and their habitat can be mitigated before submitting their permit and license applications to a land and water board.</p>			<ul style="list-style-type: none"> • 2021 – SRRB initiated preliminary planning for the 2024 Public Listening Session (Hearing) on <i>Caribou and the Sahtú Mixed Economy</i>, which is expected to address this action. • Ongoing – GNWT works with proponents through the regulatory screening and assessment process to identify, minimize and mitigate impacts of human activities on boreal caribou and its habitat.
	<p>1.4.5: Review development proposals and applications for land use permits and water licenses and provide comments and recommendations with regard to impacts on boreal caribou and their habitat.</p>			<ul style="list-style-type: none"> • 2021 – SRRB prepared to provide input with respect to Imperial closure and reclamation, and the all-weather Mackenzie Valley Highway project. • Ongoing – WMAC (NWT) regularly reviews screening proposals and provides comments and recommendations on impacts to caribou and other species. • Ongoing – TG reviews all applications for land use permits and provides comments and recommendations keeping in mind the impacts to wildlife and habitat. • Ongoing – GNWT works with proponents through the regulatory screening and assessment process to identify, minimize and mitigate impacts of human activities on boreal caribou and its habitat. • Ongoing – WRRB reviews and provides comments on land use permit and water licence applications in Wek'èezhii. • Ongoing – GRRB advises on best practices for regulatory permit applicants to minimize their impacts on wildlife, including stopping work when wildlife is within 500 metres of their location and methods of avoiding damage to vegetation and waterways.
	<p>1.4.6: Develop terms and conditions for use by the Mackenzie Valley Land and Water Board and other regulatory bodies in permits and licenses for development activities (e.g. through the <i>Mackenzie Valley Resources Management Act</i>) that help to avoid, minimize or mitigate impacts to boreal caribou habitat.</p>			<ul style="list-style-type: none"> • Implementation action is not underway. However, new guidelines being drafted for developers operating in boreal caribou habitat (see 1.4.2) could be adapted by land and water boards and other regulatory bodies as terms and conditions.

	<p>1.4.7: Using range plans as a guide, consider boreal caribou habitat supply in forest management planning and issuance of forest management agreements.</p>			<ul style="list-style-type: none"> Implementation action is not underway. Boreal caribou habitat supply was considered in developing the plans for the two existing Forest Management Areas (developed prior to 2017).
	<p>1.4.8: Using range plans as a guide, consider boreal caribou habitat supply in issuing permissions and rights for oil and gas exploration and development (e.g. calls for nominations, calls for bids, exploration licenses, operations authorizations, significant discovery licenses, production licenses, oil & gas leases) and permissions for mineral exploration and development (e.g. prospector's licenses, coal exploration licenses, prospecting permits, mineral claims, mining leases).</p>			<ul style="list-style-type: none"> Ongoing – The interim Wek'èezhii range plan (GNWT 2021) provides direction to GNWT for consideration of the range plan in issuance of resource tenure related to forestry, oil and gas.
	<p>1.4.9: Using range plans as a guide, consider boreal caribou habitat supply in planning and issuing permissions for road construction and other development.</p>			<ul style="list-style-type: none"> Ongoing – Boreal caribou habitat was considered in the Tłıchǫ Highway project and is being considered in the Mackenzie Valley Highway project.
	<p>1.4.10: Use range plans to guide decisions about issuance of permissions and rights; then, if necessary, in response to landscape change, recommend and implement that development activities be scaled back, delayed or not approved in a particular area, to ensure adequate habitat remains for boreal caribou, and to avoid destruction of areas identified as critical habitat in a range plan.</p>			<ul style="list-style-type: none"> Implementation action is not underway. The first interim range plan was finalized at the end of the reporting period in 2021.
	<p>1.4.11: When a Management Authority is also a regulatory authority or a lead agency for land use decisions, provide</p>			<ul style="list-style-type: none"> Ongoing – Boreal caribou habitat was considered in the Report of Environmental Assessment and Reasons for Decision GNWT Tłıchǫ All-

	<p>leadership by demonstrating that boreal caribou habitat supply has been considered during its own planning processes and that destruction of critical habitat identified in a range plan has been avoided.</p>			<p>Season Road Project (EA1617-01) (MVEIRB 2018) and is being considered in the Mackenzie Valley Highway project.</p>
	<p>1.4.12: Support the completion of land use plans and the protected/conservation area planning process, especially for lands identified as having value for boreal caribou conservation.</p>			<ul style="list-style-type: none"> • 2018 – Dehcho First Nations and Government of Canada signed an Establishment Agreement for the Edézhzhíe Protected Area. • 2019 – GNWT completed the development of a new Protected Areas Act in the NWT in collaboration with Indigenous governments and Indigenous organizations, regulatory boards, stakeholders and the public; the Act came into force in June 2019. • 2019 – GNWT signed an agreement with Indigenous partners in the K'asho Got'ine district on November 26, 2019, to establish and collaboratively manage Ts'udé Niljné Tuyeta as a new territorial protected area, which mostly occurs within boreal caribou range. • 2020 – Ts'udé Niljné Tuyeta Management Board was created and met for the first time. • 2020 – The subsurface land withdrawal in place for the Edézhzhíe Protected Area was indefinitely extended. • 2021 – GNWT submitted comments to the Sahtú Land Use Planning Board about re-zoning land outside of Ts'udé Niljné Tuyeta and provided them with comments and feedback on the conformity requirements in their land use plan with respect to boreal caribou. • 2021 – TG started working on updating Tłı̄chǫ Wenek'e, the Tłı̄chǫ Land Use Plan. • 2021 – TG initiated a two-year wetland inventory/mapping project to support Tłı̄chǫ land use planning. The project will help identify areas of important habitat for Tǫdzı (boreal caribou) and improve land use planning and conservation decisions. • 2016-2021 – GNWT continued to implement its five-year work plan for conservation network planning, Healthy Land, Healthy People: GNWT Priorities for Advancement of Conservation Network Planning 2016-2021. • Ongoing – GNWT is working in partnership with Indigenous governments and Indigenous organizations towards the

				<p>establishment of another candidate area (Dinàgà Wek'èhodi) within boreal caribou range.</p> <ul style="list-style-type: none"> • Ongoing – In the southern NWT, until land claim negotiations and land use planning are complete, there continues to be a combination of surface and sub-surface land withdrawals under the Dehcho Interim Measures Agreement, Acho Dene Koe Interim Measures Agreement, Northwest Territory Métis Interim Measures Agreement, Akaitcho Interim Measures Agreement, and NWT Lands Act. • Ongoing – Planning partners, including Indigenous governments and Indigenous organizations, the Government of Canada and the GNWT are working on the development of regional land use planning processes in Wek'èezhii, Dehcho and southeastern NWT.
Objective #2: Ensure that harvest of boreal caribou is sustainable.				
<p>Approach 2.1: Measure harvest levels.</p>	<p>2.1.1: Educate people on the importance of reporting harvest.</p>	<p>Necessary/Ongoing</p>	<p>Estimated harvest levels by Indigenous hunters. Estimated harvest levels by resident hunters.</p>	<ul style="list-style-type: none"> • 2021 – TG implemented a harvest monitoring program for the Tłtchq Highway. • 2021 – SRRB secured funding for three years to pilot the Dene Béré (Country Foods) program, a community harvest program designed to support improved food security in Sahtú communities. • 2021 – GRRB worked with local Renewable Resources Councils to promote the Gwich'in Harvest Survey and provide incentives to encourage hunters to report their harvests. • Ongoing – ENR conducts annual public education and awareness campaigns on respectful harvesting. A plain language summary of hunting regulations is also published annually. • Ongoing – WMAC (NWT) educates residents on the importance of reporting harvest through its annual community tour. • Ongoing – WRRB posts regular information on social media regarding the importance of reporting all harvested wildlife in Wek'èezhii.
	<p>2.1.2: Work with local First Nations, harvesting committees and the Dehcho Boreal Caribou Working Group to develop reporting systems for Indigenous harvesting of boreal caribou; these systems must be respectful of treaty and Indigenous rights and maintain harvester privacy.</p>			<ul style="list-style-type: none"> • 2020 – SRRB held its first Public Listening Session (Hearing) in Colville Lake on January 21-23, 2020, on the topic of "What is the most effective way to regulate the harvest of caribou?" • 2021 – SRRB secured funding for three years to pilot the Dene Béré (Country Foods) program, a community harvest program designed to support improved food security in Sahtú communities. • 2018-Ongoing – Kátł'odeeche First Nation (KFN), Inuvialuit, Gwich'in, Smith's Landing First Nation and Denínu Kúé First Nation (DKFN) worked with ENR to develop systems for gathering and reporting

				<p>accurate and complete harvest information. KFN and Gwich'in programs are ongoing. Inuvialuit program was active up to 2018-2019 and will complete a program review before continuing.</p> <ul style="list-style-type: none"> • Ongoing – GRRB coordinates a harvest survey twice a year; harvest reporting is voluntary but is actively encouraged through consultation with renewable resource councils and community workshops. Harvest data is shared with ENR. • Ongoing – ENR provides support and funding for interested Indigenous governments, Indigenous organizations and other partners to help facilitate the collection of Indigenous harvest information. The availability of fiscal support to build the capacity for harvest reporting programs is routinely messaged to all partners.
	<p>2.1.3: Continue to estimate harvest levels of resident hunters through the Resident Harvest Survey.</p>			<ul style="list-style-type: none"> • Ongoing – ENR conducts an annual NWT Resident Harvest Survey.⁷
	<p>2.1.4: Report estimated total harvest levels, including the number harvested and the sex ratio, to Management Authorities.</p>			<ul style="list-style-type: none"> • Ongoing – Indigenous governments and Indigenous organizations that collect boreal caribou harvest data share it with ENR periodically as it becomes available.⁸
<p>Approach 2.2: Manage the harvest to ensure it is sustainable.</p>	<p>2.2.1: Investigate and define sustainable harvest levels.</p>	Necessary/Ongoing	<p>Estimate total harvest and population size to ensure harvest levels are sustainable.</p>	<ul style="list-style-type: none"> • 2021 – ENR released a report on modeling of sustainable harvest levels for boreal caribou in the southern NWT (Dehcho, South Slave and North Slave regions) on the GNWT website and the Canadian Conservation and Land Management Knowledge Network (CCLM) portal (ENR 2020). A summary is available here. • 2021 – ENR shared the Boreal Caribou Sustainable Harvest Assessment report (ENR 2020) with partners and began meeting with Indigenous governments and Indigenous organizations in the southern NWT to discuss the findings of the report and to gather feedback on whether any new management actions should be taken.

⁷ Based on information from the NWT Resident Hunter Survey (2001-2019), resident hunters took an estimated 48 woodland caribou/year, and on average, about 40% of their reported kills were likely boreal caribou based on location of hunt. This suggested that resident hunters took an average 19 boreal caribou/year, and the average for the last three years (2017-2019) was 8 boreal caribou/year (ENR 2021).

⁸ Based on regional harvest studies and community reports, the average number of harvested boreal caribou by Indigenous people in the NWT could be as low as 65 boreal caribou/year, which represents approximately 1% of the estimated boreal caribou population, or could be as high as 190 boreal caribou/year, which represents approximately 2.9% of the estimated boreal caribou population ([GNWT 2019b](#)).

				<ul style="list-style-type: none"> • Ongoing – TG works with ENR to obtain as much information as possible to determine sustainable harvest levels and encourage respectful harvesting practices.
	<p>2.2.2: Encourage harvesting practices that minimize negative impacts on the population (e.g. following traditional laws surrounding caribou hunting and use, excellence in marksmanship, ability to distinguish types of caribou, and avoid harvesting cows with calves).</p>			<ul style="list-style-type: none"> • 2018 – SRRB and GRRB provided input on the NWT Hunter Education Program and encouraged its adoption with local experienced Indigenous harvesters as educators working with ENR staff delivering the program in each community. • 2021 – GRRB re-produced “Let the leaders pass” bumper stickers to promote traditional harvest practices (targeted to Porcupine caribou; however, message applies to all caribou). • Ongoing – ENR conducts annual public education and awareness campaigns on respectful harvesting. A plain language summary of hunting regulations is also published annually. • Ongoing – ENR hosts annual 'sight in your rifle' events in various communities. • Ongoing – WRRB encourages Tłıchǫ communities to follow traditional laws for harvesting through school visits, community tours and online campaigns (website and social media). • Ongoing – TG continues to promote respectful and traditional practices in harvesting techniques. • Ongoing – SRRB encouraged and supported community conservation planning for caribou, including tǫdzı (boreal caribou).
	<p>2.2.3: Work with officers and communities to promote compliance with hunting regulations for boreal caribou.</p>			<ul style="list-style-type: none"> • 2020 – ENR officers worked with harvesters to remind them of new <i>Wildlife Act</i> regulations (Phase 2 regulations; in force July 2019). • Ongoing – ENR conducts annual public education and awareness campaigns on respectful harvesting. A plain language summary of hunting regulations is also published annually.
	<p>2.2.4: Review the NWT <i>Wildlife Act</i> Big Game Hunting Regulations for woodland caribou. As part of this review, consider whether regulations for boreal and mountain populations of woodland caribou should be further differentiated, and whether changes to seasons, bag</p>			<ul style="list-style-type: none"> • 2018 – GNWT reviewed the NWT <i>Wildlife Act</i> Big Game Hunting Regulations and proposed changes to harvest regulations, including splitting boreal and mountain caribou tags, new hunting season, and new tag requirements and harvest conditions for General Hunting License (GHL) and Resident Hunter License holders.

	limits, quotas, open harvesting zones and/or harvest reporting mechanisms are needed.			<ul style="list-style-type: none"> • 2017-2019 – WMAC (NWT), GRRB, SRRB and WRRB participated in the NWT <i>Wildlife Act</i> meetings and supported Phase 2 Wildlife Act regulations. • 2019 – Phase 2 Wildlife Act regulation amendments came into force July 1, 2019. • 2020 – ENR conducted public awareness campaigns to promote the changes to regulations for boreal caribou hunting.
	2.2.5: Periodically review harvest levels and make management recommendations if necessary (e.g. temporary harvest limitations).			<ul style="list-style-type: none"> • Ongoing – GNWT reviews all harvest levels annually. • Ongoing – WMAC (NWT) reviews all harvest levels annually according to the best available information. Harvest in the Inuvialuit Settlement Region (ISR) is currently open to Inuvialuit harvesters and limited to one bull annually for resident harvesters. • Ongoing – GRRB coordinates a harvest survey twice a year and annual harvest results are provided to the GRRB for review.
Objective #3: Obtain information to inform sound management decisions, including boreal caribou ecology, key habitat and population indicators and cumulative effects.				
<p>Approach 3.1: Estimate population trends in each region.</p>	3.1.1: Expand upon, or develop and implement, monitoring program(s) that provide key information on boreal caribou vital rates, numbers, population trends, health, and condition.	Necessary/Ongoing	Number of monitoring programs developed, implemented, and provided to decision-makers and communities.	<ul style="list-style-type: none"> • 2017 – ENR expanded its boreal caribou monitoring program into the North Slave study area. • 2020 – Yukon Government deployed 20 collars in the Yukon/Gwich'in Settlement Area portion of boreal caribou range and ENR deployed 20 collars in the Sahtú to collect baseline data for the Mackenzie Valley Highway project. • 2020 – ENR conducted a boreal caribou population abundance survey in the North Slave region, reported the results in the Water Licence Annual Report 2020 for the Tłı̄chǫ All-Season Road (TASR) and shared with Indigenous governments and Indigenous organizations. • Ongoing – ENR analyzes caribou biological samples to assess pregnancy rates and health/disease. • Ongoing – ENR continued to actively monitor boreal caribou populations in Dehcho South, Dehcho North, Hay River Lowlands, Pine Point/Buffalo Lakes, Mackenzie, and North Slave. Over the past three years (2019-2021), the average lambda (growth rate) was above 1 (increasing) in all study areas. • Ongoing – ENR and GRRB are part of the Population Monitoring Working Group of the National Boreal Caribou Knowledge

				<p>Consortium (NBCKC), a knowledge-sharing forum launched in 2018 under Canada’s federal action plan for boreal caribou.</p>
	<p>3.1.2: Explore methods for using local population trend information to estimate the trend of NWT's population as a whole.</p>			<ul style="list-style-type: none"> • Implementation action is not being pursued. • In 2014, ENR produced a literature review and recommendations report to provide advice on how to obtain range-wide estimates of boreal caribou population trend for the NT1 range, but there has been no further progress since then.
<p>Approach 3.2: Improve our understanding of boreal caribou ecology in the NWT.</p>	<p>3.2.1: Investigate relationships among different types of caribou and whether the NWT population of boreal caribou has subpopulation structure (e.g. using genetics and traditional knowledge).</p>	<p>Beneficial/Long-term</p>	<p>N/A</p>	<ul style="list-style-type: none"> • 2017 – ENR collaborated with researchers on population and landscape genetic analyses for boreal caribou samples collected between 2007 and 2016 in the southern regions of the NWT. Three broad genetic clusters were detected, and roads had a significant effect on population genetic differentiation (Manseau <i>et al.</i> 2017). • 2017 – Researchers and the SRRB promoted research on Indigenous perspectives in the identification of biological variation; ENR provided support and samples for the work (Polfus <i>et al.</i> 2016). • 2017-2021 – ENR provided data, input and review for a study of population structure in transboundary ranges spanning the NWT, Alberta and B.C. (Wilson <i>et al.</i> 2020). • 2021 – ENR collaborated with researchers using genetics to study past population dynamics, range changes and relationships of caribou in western North America (Taylor <i>et al.</i> 2021). • 2021 – ENR collaborated with a genomics lab at Laval University to investigate the potential to assess whether ecotypes of caribou can be clearly separated through genomic sequencing. • 2021 – SRRB continued efforts to expand fecal sampling to better understand relationships among barren-ground, boreal and northern mountain caribou through genome research.

	<p>3.2.2: Improve range map for boreal caribou, using the best available information on their changing locations and movements.</p>			<ul style="list-style-type: none"> • 2018-2019 – Kátl’odeeche First Nation (KFN) completed a traditional knowledge-based habitat mapping project (KFN 2019). • 2018-2021 – ENR developed and updated Resource Selection Function models and maps for boreal caribou habitat selection and used them in development of the interim Wek’èezhìi range plan (GNWT 2021). A presentation on the project is available here. • 2020-2021 – ENR provided data, input and review of a study of transboundary ranges spanning the NWT, Alberta and B.C. (Wilson et al. 2020). • 2021 – During the Wek’èezhìi range planning process some minor adjustments were made to the range boundary. These have not yet been incorporated into national maps of the NT1 range.
	<p>3.2.3: Promote research to improve our understanding of the relationship between habitat disturbance, alternate prey, predator density and behaviour, and boreal caribou in the NWT.</p>			<ul style="list-style-type: none"> • 2016-2020 – ENR deployed collars on wolves in boreal caribou range and conducted aerial surveys for wolf censuses in various study areas in the southern NWT (Serrouya et al. 2021). ENR collaborated with the Alberta Biodiversity Monitoring Institute and other researchers to conduct research on human footprint, habitat, wolves, and boreal caribou population growth rates (Serrouya et al. 2016; 2021). • 2017 – ENR completed and shared research on longevity and mortality of boreal caribou in the Dehcho region (Larter and Allaire 2017). • 2017 – GRRB identified caribou (all types) as a research priority at the GRRB Priority Research and Management Needs Workshop in 2017. • 2018 – ENR collaborated with researchers to study wolf diet in the southern NWT (O'Donovan et al. 2018). • 2019 – ENR collaborated with Anna Joytoulia of the University of Alberta to study summer ungulate prey selectivity in wolves in the South Slave region. • 2020 – ENR collaborated with researchers on a pathway analysis linking habitat change, caribou population growth rates, moose density, and wolf density (Serrouya et al. 2021). • 2020 – ENR supported research on causes and timing of boreal caribou mortality (Kelly 2020). • 2021 – ENR partnered with Laval University and University of Saskatchewan on a Sentinel North project to investigate food web interactions in the boreal forest (boreal caribou-bison-moose-wolf-black bear), apparent competition, and habitat selection.

				<ul style="list-style-type: none"> • 2021 – ENR supported a Wilfrid Laurier University project looking at food competition between boreal caribou and a range of other herbivore and omnivore species (Jorgensen and Baltzer 2021). • Ongoing – ENR collaborates on ongoing research on the link between female boreal caribou body condition and nutrition (e.g. Cook et al. 2021).
	<p>3.2.4: Promote research to improve our understanding of the natural fire regime and habitat regeneration in the NWT, as they relate to boreal caribou habitat.</p>			<ul style="list-style-type: none"> • 2017 – ENR collaborated on research on changes in plant communities in boreal caribou habitat post-wildfire (Day et al. 2017). • 2017 – DKFN hired a contractor to conduct a traditional use study on boreal caribou habitat and habitat use (d'Entremont 2017). • 2018 – Jean Marie River First Nation conducted research on using traditional knowledge to understand habitat changes with support from ENR. • 2018-2019 – Researchers studied the impacts of wildfires on boreal caribou and its habitat with support from WRRB, TG, Ka'a'gee Tu First Nation (KTFN) and ENR. • 2020 – ENR collaborated on research on boreal caribou use of post-wildfire habitat considering burn intensity (Gurarie et al. in prep). • 2021 – GNWT partnered with the Canadian Forest Service to prepare a baseline report summarizing current ecological conditions of forests in the NWT and how climate changes are expected to alter forest ecosystems, including caribou habitat (Huberman et al. 2022). • 2021 – ENR collaborated with researchers to examine the recovery of key caribou habitat (lichen) following wildfire (Greuel et al. 2021). As part of this project, an infographic was developed (shared by the WRRB). • 2021 – ENR is collaborating with Natural Resources Canada to develop a robust 200-year fire history record for the southern NWT. Fieldwork is complete and a report is being prepared. • 2021 – ENR supported a Wilfrid Laurier University project looking at recovery of forage after fire (Jorgensen and Baltzer 2021). • 2021 – Wilfrid Laurier University has multiple ongoing research projects in the NWT on topics including fire recovery, lichen growth and permafrost; some have GNWT involvement. • 2021 – ENR involved in ongoing research on the link between female boreal caribou body condition and nutrition (e.g. Cook et al. 2021).

				<ul style="list-style-type: none"> • 2021 – SRRB initiated the climate change and wildfires community planning project. • 2018-2021 – Denínu Kúé First Nation (DKFN) collaborated with a contractor on a project (supported by GNWT) looking at recovery of boreal caribou habitat after wildfire. A report on the project is available here. • Ongoing – ENR continues to apply research on projected impacts of fire and timber harvest on boreal caribou habitat (Caslys 2016).
	<p>3.2.5: Promote research on regeneration of human disturbances in the NWT and the effectiveness of habitat restoration techniques for boreal caribou.</p>			<ul style="list-style-type: none"> • 2018 – GNWT hired a contractor to write a framework for evaluating offsets. • 2019 – SRRB led research on the Sahtú Regional Environmental Monitoring and Decision Support Tool Set project, with funding from the GNWT. • 2021 – GNWT secured federal funding for a project to develop an inventory of candidate habitat restoration offset sites. • 2021 – ENR supported a Wilfrid Laurier University project looking at remediation techniques for boreal caribou habitat. • Ongoing – ENR and Délıne Got'ıne Government (DGG) are part of the Habitat Restoration Working Group of the National Boreal Caribou Knowledge Consortium (NBCKC).
	<p>3.2.6: Promote research on the impacts of climate change on boreal caribou habitat.</p>			<ul style="list-style-type: none"> • 2018 – ENR conducted research on snow depth and caribou recruitment in the Dehcho region (Larter and Allaire 2017). • 2018 – ENR collaborated on research on the influence of climate on caribou demography (DeMars et al. 2017). • 2018 – GNWT supported research on the relative influence of site, climate and wildfire on post-fire vegetation (Whitman et al. 2018). • 2019 – ENR collaborated on research on how boreal caribou social organization (size and types of groups) changes according to decreasing annual snow depth (Jung et al. 2019). • 2019 – GNWT supported research on the impacts of increasing wildfires on the shifting carbon balance in boreal forests (Walker et al. 2019). • 2019-2020 – GNWT supported research on the impact of lichen loss due to permafrost thaw on boreal caribou populations (led by NRCAN).

				<ul style="list-style-type: none"> • 2020-2021 – GNWT supported research on how boreal forest composition is changing with permafrost thaw (Dearborn et al. 2021). • 2021 – ENR collaborated on research on impacts of increasing fire frequency and severity on habitat loss for boreal caribou (Palm et al. 2022). • 2021 – ENR collaborated on research on the shift away from black spruce-dominated forests due to climate change and intensifying wildfire activity (Baltzer et al. 2021). • 2021 – ENR published a report that summarizes and assesses the risks that climate change poses to boreal caribou and other species at risk in the NWT (Singer and Lee 2021). • 2021 – KTFN published the Ka'a'gee Tu Atlas, an innovative web map the community can use to record past conditions, traditional knowledge and local observations of change. Supported by the GNWT through the NWT Cumulative Impact Monitoring Program (see NWT Environmental Research Bulletin vol. 6 issue 24). • 2021 – SRRB initiated a community planning project on climate change and wildfires. • 2021 – ENR filled a new staff position (Climate Change Ecologist) and continued work on developing a Climate Change Adaptation Plan for wildlife in the NWT. • Ongoing – ENR participates in the Western Boreal Initiative landscape forecast modeling project (led by ECCC/NRCan).
Approach 3.3: Explore possible use of population and habitat thresholds as triggers for management actions.	3.3.1: As monitoring programs are developed (3.1.1), assess options for population data that could be used to trigger management actions.	Beneficial/Long-term	Number of reports or other information products completed and provided to decision-makers and communities.	<ul style="list-style-type: none"> • Implementation action is not underway.
	3.3.2: Through consultation, discuss the possibility of using population and habitat thresholds to trigger boreal caribou management actions.			<ul style="list-style-type: none"> • 2019 – GNWT incorporated the use of habitat thresholds as triggers for management actions as part of the NWT Framework for Boreal Caribou Range Planning (GNWT 2019a).
Approach 3.4: Develop an approach to	3.4.1: Develop a model that shows how monitored indicators relate to the state of the population.	Necessary/Ongoing	Modeling completed and report provided to decision-makers and communities.	<ul style="list-style-type: none"> • Implementation action is not being pursued.

modeling cumulative effects.				
<p>Approach 3.5: Incorporate community and traditional knowledge on an ongoing basis.</p>	<p>3.5.1: Support community monitoring programs.</p>	<p>Necessary/Ongoing</p>	<p>N/A</p>	<ul style="list-style-type: none"> • 2017-2019 – WMAC (NWT) conducted its annual Inuvialuit Harvest Study. This work has been on hold since 2020. • 2018 – SRRB partnered with the Sahtú Dene Council to establish Sahtú Nę K'édiké - Keepers of the Land (Guardian) program, with support from ECCC's Indigenous Guardians Pilot. This project contributes to health, economic development, expanded employment, food security, local and regional governance, reconciliation, and cultural and spiritual integrity for Sahtú Dene Nations. • 2018 – Kátł'odeeche First Nation (KFN), with support from ECCC, established the program Watching the Land: Knowing the Impacts of Climate Change. This program builds technical capacity within the KFN specific to climate monitoring research and helps fund the climate monitoring component of the current Guardian program. • 2019 – Joint Secretariat started a new Munaqsiyit/Guardians program in the Inuvialuit Settlement Region, which is part of the Community Based Monitoring Program; this program is ongoing. • 2019 – Yellowknives Dene First Nation (YKDFN) received funding from ECCC's Indigenous Guardians Pilot to establish the Yellowknives Dene Guardians Project to allow for more formal stewardship activities over the YKDFN traditional lands. • 2021 – TG established the Tł̄chq̄ Highway Wildlife Monitoring Program and trained monitors. The program includes monitoring for boreal caribou harvest and habitat condition along the new highway corridor. WRRB reviewed the development of the program and GNWT provided support for the program. • 2021 – SRRB secured funding to initiate community monitoring in the Norman Wells Proven Area. • 2021 – Denínu Kúę First Nation (DKFN) received funding from ECCC's Indigenous Guardians Pilot to establish the Denínu Kúę First Nation Guardians of the land and water of Resolution Bay. The goal of this one-year project was to oversee/monitor harvesting activities in high-traffic areas of Resolution Bay to prevent overfishing and irresponsible tourism. • 2017-Ongoing – Nahendeh Kehotsendı, KFN's land monitoring program, was established in late 2016 and is ongoing.

	<p>3.5.2: Develop local training programs for community monitors, directed at those with local knowledge.</p>			<ul style="list-style-type: none"> • Ongoing – GRRB coordinates a harvest survey twice a year and annual harvest results are provided to the GRRB for review. • 2018 – SRRB partnered with the Sahtú Dene Council to establish Sahtú Nę K'édiké - Keepers of the Land (Guardian) program. • 2021 –SRRB trained community members in caribou fecal sampling and laboratory analysis of samples. • 2021 – TG established the Tłıchọ Tłlì Deè Committee, which provides advice to the Tłıchọ Highway Monitors and TG staff on how to run the Tłıchọ Highway Wildlife Monitoring Program. • 2021 – TG trained monitors and developed new vegetation survey methods as part of the implementation of the Tłıchọ Highway Wildlife Monitoring Program. • 2021 – ENR worked with a contractor, the Alberta Biodiversity Monitoring Institute and other partners to develop training materials on how to use and deploy wildlife cameras and acoustic recording units for wildlife monitoring.
	<p>3.5.3: Analyze existing knowledge and gather new knowledge.</p>			<ul style="list-style-type: none"> • 2019 – WRRB published a Tłıchọ knowledge study on the relationships between boreal caribou and their habitat (Legat et al. 2019). • 2019-2021 – ENR supported Indigenous governments and Indigenous organizations (including TG, North Slave Métis Alliance and communities in the southern NWT) to collect community and traditional knowledge for regional range planning. This included verification of the boreal caribou habitat Resource Selection Function model. A presentation on the project is available here. • 2020-2021 – NWT Species at Risk Committee (SARC) developed an updated status report on boreal caribou in the NWT (SARC 2022), which provides a compilation and analysis of existing knowledge. • 2021 – Organizations in Sahtú, Gwich'in and Inuvialuit settlement regions worked with ENR to apply for further funding to support Indigenous knowledge research. • 2021 – SRRB compiled existing knowledge as part of the Tqdzı Atlas project, as a basis for identifying knowledge gaps. • 2021 – SRRB developed a Tqdzı Indigenous Knowledge project in partnership with ENR.

	<p>3.5.4: Ensure community and traditional knowledge perspectives are brought to the decision-making table.</p>			<ul style="list-style-type: none"> • 2020 – SRRB held its first Public Listening Session (Hearing) in Colville Lake on January 21-23, 2020, on the topic of "What is the most effective way to regulate the harvest of caribou?" • 2020-2021 – SRRB prepared for the 2021 Public Listening Session (Hearing) on the topic of caribou predators and competitors, encouraging submission of both Indigenous knowledge and science. • 2020-2021 – SARC developed an updated status report on boreal caribou in the NWT (SARC 2022), which provides a compilation and analysis of existing Indigenous, traditional, community and scientific knowledge to support the processes for species assessment and listing under the <i>Species at Risk (NWT) Act</i>. • 2021 – Indigenous knowledge about boreal caribou in Wek'èezhìi provided by TG and North Slave Métis Alliance was used in the development of the interim Wek'èezhìi range plan, specifically in delineating the Basic, Enhanced and Intensive management class areas in the plan. • Ongoing – GRRB provides ENR with observations made by caribou harvesters. • Ongoing – GNWT, TG, WRRB, SRRB, GRRB, Inuvik Native Band and Dene Nation participate in the National Boreal Caribou Knowledge Consortium (NBCKC), a knowledge-sharing forum launched in 2018 under Canada's federal action plan for boreal caribou. • Ongoing – DGG, Gwich'in Nation, GRRB, IGC, Inuvik Native Band, K'áhsho Got'Inè, SRRB, Shúhtaot'Inè, TG and WRRB participate in the Indigenous Knowledge Circle (IKC) of the NBCKC. The IKC advocates for and provides the NBCKC with guidance and feedback on their relationship with Indigenous peoples and Indigenous Knowledge Systems.
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Objective #4: Manage boreal caribou collaboratively, using adaptive management practices and the best available information.				
<p>Approach 4.1: Annually review boreal caribou management and any new information, and adapt management practices as necessary.</p>	<p>4.1.1: Management Authorities annually review progress on recovery actions and current information on population and habitat, including community and traditional knowledge.</p>	Critical/Ongoing	<p>Number of co-management meetings where information and progress on boreal caribou is reviewed.</p> <p>Number of management recommendations created and implemented by co-management boards.</p>	<ul style="list-style-type: none"> Ongoing – Management Authorities for boreal caribou⁹ meet annually at the February CMA meeting to review the progress on boreal caribou implementation actions and current information on population and habitat. CMA participants¹⁰ are invited to observe or participate in these meetings. Ongoing – The CMA receives an updated status report and assessment from SARC prior to the listing end date for the species (approximately every 10 years). The next report and reassessment for boreal caribou are due in 2022.
	<p>4.1.2: If necessary, consider alternative recovery actions (e.g. stricter habitat and/or harvest management) and make management recommendations.</p>			<ul style="list-style-type: none"> Implementation action is not underway. Alternative recovery actions have not been deemed necessary to date.
	<p>4.1.3: Every five years, review the NWT Recovery Strategy and report on the actions undertaken to implement it and the progress made towards meeting its objectives.</p>			<ul style="list-style-type: none"> Ongoing – Review and reporting are underway. This progress report, developed by the CMA and due for publication in 2022, describes the actions undertaken to implement the Recovery Strategy and the progress made towards meeting its objectives. Review outcomes are reported in section 7 of this report (Recovery Strategy Review).
<p>Approach 4.2: Work with other jurisdictions to share information and coordinate cross-boundary</p>	<p>4.2.1: Continue to participate on the National Boreal Caribou Technical Committee to share knowledge, develop strategies and resolve key technical questions amongst jurisdictions.</p>	Necessary/Ongoing	<p>Number of cross-boundary groups with active NWT participation.</p> <p>Number of active cross-boundary agreements.</p>	<ul style="list-style-type: none"> Ongoing – GNWT, TG, WRRB, SRRB, GRRB, Inuvik Native Band and Dene Nation participate in the National Boreal Caribou Knowledge Consortium (NBCKC). Ongoing – GNWT participates in the Population Management Working Group of the NBCKC. Ongoing – DGG, Gwich'in Nation, GRRB, IGC, Inuvik Native Band, K'áhsho Got'Ine, SRRB, Shúhtaot'Ine, TG and WRRB participate in the

⁹ **Management Authorities for boreal caribou in the NWT:** Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Sahtú Renewable Resources Board, Wek'èezhii Renewable Resources Board, Tłı̨chǫ Government, Government of the Northwest Territories and Government of Canada. See section 3 (Management Authorities for Boreal Caribou) or Appendix A (Progress Report Partners) for further information.

¹⁰ **CMA participants include:** Acho Dene Koe First Nation, Akaitcho Territory Government, Beverly and Qamanirjuaq Caribou Management Board, Dehcho First Nations, Kátł'odeeche First Nation, North Slave Métis Alliance, Northwest Territory Métis Nation and Salt River First Nation

planning, monitoring and management.				<p>Indigenous Knowledge Circle (IKC) of the NBCKC. The IKC advocates for and provides the NBCKC with guidance and feedback on their relationship with Indigenous peoples and Indigenous Knowledge Systems.</p> <ul style="list-style-type: none"> • Ongoing – GNWT participates in the National Boreal Caribou Technical Committee (NBCTC).
	4.2.2: Continue to implement the Memorandum of Understanding for Cooperation on Managing Shared Boreal Populations of Woodland Caribou between the GNWT and Government of Alberta.			<ul style="list-style-type: none"> • 2020 – GNWT completed a Memorandum of Understanding (MOU) for Cooperation on Managing Shared Boreal, Central and Northern Populations of Woodland Caribou in October 2020. • Ongoing – GNWT participates in regular cross-jurisdictional meetings with Yukon, B.C. and Alberta under the MOU for Cooperation on Managing Shared Boreal, Central and Northern Populations of Woodland Caribou.
	4.2.3: Continue working with Gwich'in and Government of Yukon on range planning and exchanging information for the shared NWT-Yukon population.			<ul style="list-style-type: none"> • 2020-2021 – GNWT and Government of Yukon participated in regular cross-jurisdictional meetings as partners in the MOU for Cooperation on Managing Shared Boreal, Central and Northern Populations of Woodland Caribou. • 2021 – Yukon representative was invited to, and attended, the February 2021 Gwich'in Working Group meeting associated with boreal caribou range planning.
	4.2.4: Continue sharing information about boreal caribou with neighbouring jurisdictions (e.g. determining metapopulation status, sharing collaring data).			<ul style="list-style-type: none"> • 2018 – GNWT shared information on boreal caribou for the National Action Plan in February 2018. • Ongoing – GNWT shares information on boreal caribou for the national Progress Reports on Steps Taken to Protect Critical Habitat (section 63 reports), published every six months. • Ongoing – GNWT shares NWT boreal caribou and habitat data with ECCC on an ongoing basis for range-wide initiatives. • Ongoing – Information from caribou collaring programs for transboundary herds, as well as habitat information, is shared among NWT, Yukon, Alberta and B.C. governments.
Approach 4.3: Work with other co-management	4.3.1: Continue working with Renewable Resources Boards, local harvesting committees, Dehcho Boreal Caribou Working Group, and Indigenous	Necessary/Ongoing	Number of meetings where information and	<ul style="list-style-type: none"> • Ongoing – GNWT works with Indigenous governments and Indigenous organizations, renewable resources boards, land use planning boards, regulatory boards, and relevant federal government departments as part of boreal caribou range planning.

<p>partners, Indigenous governments and organizations, communities, resident hunters, non-governmental organizations, and industry to share information and collaborate on management actions.</p>	<p>governments and organizations on boreal caribou management.</p>		<p>progress on boreal caribou is reviewed.</p> <p>Number of collaborative or partner-driven management initiatives on boreal caribou.</p>	<ul style="list-style-type: none"> • 2019-2021 – WRRB continued collaborative range planning work as a member of the Wek'èezhii Boreal Caribou Range Planning Working Group. • 2021 – SRRB supported community engagement in development of range plans and t̄dzı conservation plans. • 2021 – GRRB invited renewable resource councils and community members to GNWT's information sessions on range planning in Inuvik and Aklavik. • 2021 – ENR presented twice to the Corridor Working Group for the T̄ich̄ Highway about caribou monitoring in the North Slave region. This working group includes industry, regulators and Indigenous governments and Indigenous organizations. • 2021 – ENR met with Indigenous governments and Indigenous organizations for further discussions about the Boreal Caribou Sustainable Harvest Assessment report (ENR 2020). • Ongoing – Since 2015, ENR has hosted an annual meeting of bodies and organizations responsible for wildlife management in the NWT, as required under section 15 of the NWT <i>Wildlife Act</i>. In 2021, ENR provided a presentation on the Boreal Caribou Sustainable Harvest Assessment report (ENR 2020). A summary of the report is available here.
	<p>4.3.2: Continue engaging resident hunters, non-governmental organizations, industry and the public on boreal caribou management.</p>		<ul style="list-style-type: none"> • Ongoing – Engagement with the range planning process is ongoing through the External Stakeholders Advisory Group. • 2021 – GNWT presented to the External Stakeholders Advisory Group in September 2021 on the interim Wek'èezhii range plan. • 2021 – GNWT held a public review period for the interim Wek'èezhii range plan in August to October 2021. • 2021 – GRRB invited renewable resources councils (RRCs) and community members to GNWT's information sessions on range planning in Inuvik and Aklavik. • 2021 – SRRB promoted engagement through the 2021 Public Listening Session (Hearing). 	
	<p>4.3.3: Encourage cooperative work with all parties on boreal caribou stewardship and other conservation activities.</p>		<ul style="list-style-type: none"> • 2020-2021 – GNWT disbursed funds received from ECCC under a section 11 conservation agreement (GNWT 2019b) to allow other partners to participate in range planning and carry out related projects. 	

				<ul style="list-style-type: none"> • 2021 – SRRB promoted engagement through the 2021 Public Listening Session (Hearing). • Ongoing – GNWT encourages and supports cooperative work on boreal caribou stewardship through the NWT Species Conservation and Recovery Fund (SCARF), NWT Cumulative Impact Monitoring Program, and the NWT Environmental Studies Research Fund.
	<p>4.3.4: Encourage cooperative research, monitoring and information sharing with all parties.</p>			<ul style="list-style-type: none"> • Ongoing – Most GNWT work described in these implementation actions is cooperative (e.g. cooperation and information sharing agreements with other jurisdictions; supporting Indigenous governments and Indigenous organizations to apply for funding to do Indigenous knowledge research; inviting representatives of wildlife co-management boards to the annual ENR Biologists’ meeting). • Ongoing – WRRB continues to encourage cooperative research, monitoring and information sharing as a member of the Wek’èezhìi Boreal Caribou Range Planning Working Group and through semi-annual updates to the Corridor Working Group for the Tłıchǫ Highway. • Ongoing – GRRB works with external researchers, ENR staff and other partners on cooperative initiatives. Activity reports are provided through bi-annual newsletters and updates on GRRB’s website and Facebook page. Stewardship funding and opportunities for involvement in species at risk conservation and recovery are shared with schools and community groups and through social media.
	<p>4.3.5: Develop standard monitoring protocols for boreal caribou that could be adopted by government, industry and other parties to facilitate data sharing and increase the geographic scope of monitoring programs.</p>			<ul style="list-style-type: none"> • 2021 – GNWT partnered with SRRB, Tulita RRC and Norman Wells RRC on a winter track survey pilot project conducted in the Sahtú region from 2015-2021. One objective of the study was to monitor changes in caribou distribution in response to changes in oil and gas development in the region. The final report is being prepared.
	<p>4.3.6: Ensure meaningful consultation, as required under section 35 of the <i>Constitution Act</i>, when a government action with respect to boreal caribou could potentially infringe on an asserted or existing Indigenous or treaty right.</p>			<ul style="list-style-type: none"> • 2018 – GNWT conducted section 35 Aboriginal consultation when developing a framework for boreal caribou range planning.

<p>Approach 4.4: Increase capacity, both human and financial, to implement management actions in this Recovery Strategy.</p>	<p>4.4.1: Build and strengthen partnerships and collaborations to increase capacity for implementing management actions.</p>	<p>Necessary/Ongoing</p>	<p>Number and amount of funding partnerships related to implementation actions.</p>	<ul style="list-style-type: none"> • 2019 – GNWT and the Government of Canada completed a conservation agreement for boreal caribou under section 11 of the <i>Species at Risk Act</i> (SARA) (GNWT 2019b). The agreement aims to advance work on boreal caribou recovery in the NWT over the next five years. • 2020-2021 – GNWT led the development and implementation of many measures in the agreement along with the CMA and Indigenous governments, Indigenous organizations and communities. • 2021 – GNWT worked with WMAC (NWT), Gwich'in Tribal Council (GTC) and SRRB to apply to ECCC for funding to conduct further traditional knowledge research on boreal caribou in the Sahtú, Gwich'in and Inuvialuit regions to support range planning. • 2021 – GNWT provided support to TG caribou monitoring programs related to the Tłıchǫ Highway. • 2021 – SRRB secured funding for three years to pilot the Dene Béré (Country Foods) program, a community harvest program designed to support improved food security in Sahtú communities. • Ongoing – ENR provides support and funding for interested Indigenous governments, Indigenous organizations and other partners to help facilitate the collection of Indigenous harvest information. The availability of fiscal support to build the capacity for harvest reporting programs is routinely messaged to all partners. • Ongoing – GRRB works with external researchers, ENR staff and other partners on cooperative initiatives. Activity reports are provided through bi-annual newsletters and updates on GRRB's website and Facebook page. Stewardship funding and opportunities for involvement in species at risk conservation and recovery are shared with schools and community groups and through social media.
	<p>4.4.2: Identify and pursue opportunities for public and private investments in Recovery Strategy implementation, with help from non-government organizations.</p>			<ul style="list-style-type: none"> • 2019 – GNWT signed a section 11 conservation agreement with ECCC (GNWT 2019b), which provides funding over 5 years to support boreal caribou recovery measures, including boreal caribou range planning and Indigenous engagement. • 2020-2021 – GNWT implemented a section 11 conservation agreement with ECCC (2019b) to support the development of regional range plans in the NWT, plus additional funding to support engaging Indigenous governments and Indigenous organizations in regional range planning.

				<ul style="list-style-type: none"> • 2021 – GNWT received funding from the ECCC Priority Places for Species at Risk program, part of Canada's Nature Fund, for boreal caribou work. • 2021 – TG received funding from ECCC's Community Nominated Priority Places for Species at Risk program, part of Canada's Nature Fund, for a wetland inventory/mapping project that will help identify areas of important habitat for Ṯḏzi (boreal caribou) on Ṯçẖ Government lands. • Ongoing – ECCC provides funding through the Habitat Stewardship Program and the Aboriginal Fund for Species at Risk. GNWT and other NWT organizations have received funding for various boreal caribou projects. • Ongoing – Various boreal caribou research projects are supported by academic institutions (e.g. Sentinel North). • Ongoing – GNWT provides funding for boreal caribou-related work through the NWT Species Conservation and Recovery Fund (SCARF), the NWT Environmental Studies Research Fund and the NWT Cumulative Impact Monitoring Program, as well as other directed funding (e.g. Wildlife Act implementation).
Objective #5: Exchange information with NWT people about boreal caribou in all regions.				
<p>Approach 5.1: Encourage flow of information between communities, caribou hunters, Management Authorities, industry, non-governmental organizations and the interested public within and across all regions.</p>	<p>5.1.1: Communicate about boreal caribou using a variety of approaches, depending on the demographic (e.g. Elders – community meetings or home visits; Youth – social media, internet, visits to schools; Harvesters – harvesters' conference; All radio, "out on the land" trips, information sessions in communities).</p>	Necessary/Ongoing	<p>Number of communication events about boreal caribou (e.g. meetings, workshops, conferences, media campaigns, presentations, and school visits).</p> <p>Number of publications on boreal caribou.</p>	<ul style="list-style-type: none"> • 2019 – GNWT published a fact sheet and summary for the NWT Framework for Boreal Caribou Range Planning (GNWT 2019a), which were posted online and shared on social media. • 2020 – GNWT published and distributed a newsletter about range planning in the NWT. • 2020 – National Boreal Caribou Knowledge Consortium (NBCKC) launched an interactive map to showcase boreal caribou research and monitoring projects across Canada. • 2021 – GNWT developed an infographic poster depicting the approach to boreal caribou range planning in the NWT. • 2021 – Researchers developed an infographic to communicate findings on caribou habitat (lichen) recovery after wildfire (shared by the WRRB). • 2021 – GNWT held community information sessions about boreal caribou range planning in the Gwich'in Settlement Area and Inuvialuit

				<p>Settlement Region. Community meetings were held in Southern NWT to review and verify Indigenous knowledge mapping.</p> <ul style="list-style-type: none"> • 2021 – ENR developed an online slideshow presentation on the Resource Selection Function models and maps for boreal caribou habitat selection. • 2021 – SRRB published submissions about t̥d̥z̥i, predators and competitors on the public registry as part of the 2021 Public Listening Session (Hearing). • Ongoing – WRRB communicates with communities and the public through online newsletters, website and social media, as required. • Ongoing – GRRB coordinates annual conservation calendars, produces newsletters twice a year, attends career fairs and science fairs, leads 'nature day' activities in schools, and presents all of this information to renewable resources councils (RRCs), GRRB and ENR through regular updates. • Ongoing – National Boreal Caribou Knowledge Consortium (NBCKC) provides communications resources, including infographics, fact sheets, newsletters and a toolkit for monitoring boreal caribou.
	<p>5.1.2: Continue/enhance communication with local harvesting committees, Dehcho Boreal Caribou Working Group, and local First Nations.</p>			<ul style="list-style-type: none"> • 2018 – ENR and Dehcho First Nations held a Dehcho Regional Wildlife Workshop in Fort Simpson where boreal caribou issues were discussed. • 2019 – WRRB communicated about boreal caribou through semi-annual updates to the Corridor Working Group for the T̥j̥ch̥q̥ Highway and as a member of the Wek'èezhìi Boreal Caribou Range Planning Working Group. • 2019 – ENR held a South Slave Regional Wildlife Workshop where boreal caribou issues were discussed. • 2021 – GNWT held meetings with Indigenous governments and Indigenous organizations (TG, NSMA, DKFN, LKFN, KFN and WPFN) about the Boreal Caribou Sustainable Harvest Assessment report (ENR 2020). • 2021 – SRRB published submissions about t̥d̥z̥i, predators and competitors on the public registry as part of the 2021 Public Listening Session (Hearing). • Ongoing – ENR meets with local Indigenous governments, Indigenous organizations and harvesting committees on an ongoing basis to discuss wildlife issues including boreal caribou.

				<ul style="list-style-type: none"> • Ongoing – ENR hosts an annual meeting of bodies and organizations responsible for wildlife management in the NWT to promote cooperative and collaborative working relationships for effective wildlife management at local, regional and territorial levels. This meeting is required under section 15 of the NWT <i>Wildlife Act</i>. • Ongoing – GRRB communicates with local harvesting communities through the GRRB's harvest survey completed twice annually.
Objective #6: Further to the national Recovery Strategy, ensure recovery obligations for protecting critical habitat and maintaining a self-sustaining population are met or exceeded in the NWT.				
Approach 6.1: Track and report on critical habitat indicators established in the national Recovery Strategy to trigger adaptive management where necessary.	6.1.1: Measure total undisturbed habitat in the NWT range annually and compare it to the 65% threshold in the national Recovery Strategy.	Necessary/Ongoing	Number of times that critical habitat indicators were measured and compared to national indicators and reported to Management Authorities.	<ul style="list-style-type: none"> • Ongoing – GNWT measures total undisturbed habitat in the NWT annually. Most recent data (wildfires from 1981-2020; human disturbance from 2015) showed that 71% of habitat remained undisturbed in the NT1 boreal caribou range. Natural disturbances (e.g. fire) account for the majority of the disturbance (21.5% of the range). • Ongoing – GNWT shares information on boreal caribou for the national Progress Reports on Steps Taken to Protect Critical Habitat (section 63 reports), published every six months.
	6.1.2: Report results at annual boreal caribou management meeting to allow Management Authorities to make recommendations.		Number of times that self-sustaining population status indicators were measured and compared to national indicators and reported to Management Authorities.	<ul style="list-style-type: none"> • Ongoing – Reports are provided annually at the February CMA meeting through implementation updates.

<p>Approach 6.2:</p> <p>Track and report on self-sustaining population status indicators established in the national Recovery Strategy, to trigger adaptive management where necessary.</p>	<p>6.2.1: Annually compare short term population trend, population size, and percentage of habitat disturbance in the NWT to the self-sustaining status indicators in the national Recovery Strategy.</p>	Necessary/Ongoing	<p>Estimate short-term population trend, population size, and rate of change annually.</p> <p>Estimate percentage of habitat disturbance (natural and anthropogenic combined) annually.</p>	<ul style="list-style-type: none"> • 2020 – ENR conducted a boreal caribou population abundance survey in the North Slave region and reported the results in the Water Licence Annual Report 2020 for the Tłjchq All-Season Road (TASR). The report was shared with Indigenous governments and Indigenous organizations. The density estimate was more than twice as high as the previous density estimate for the region. This information may be used in future to update the NWT boreal caribou abundance estimates. • Ongoing – NWT population and habitat indicators for boreal caribou indicate boreal caribou population in the NWT is considered likely self-sustaining.¹¹
	<p>6.2.2: Report results at annual boreal caribou management meeting to allow Management Authorities to make recommendations.</p>			<ul style="list-style-type: none"> • Ongoing – Reports are provided annually at the February CMA meeting through implementation updates.
<p>Approach 6.3:</p> <p>As new information becomes available, refine and improve indicators for critical habitat and population status.</p>	<p>6.3.1: As new information becomes available, use it to improve and refine habitat indicators for the NWT.</p>	Necessary/Ongoing	<p>Number of times that habitat and population indicators were critically evaluated using new information.</p> <p>Number of times that NWT information was provided to Environment and Climate Change Canada for their review of national recovery efforts.</p>	<ul style="list-style-type: none"> • 2019 – ENR shared NWT boreal caribou data to support a national enhanced meta-analysis led by ECCC, which examined the effects of human disturbances and fire (alone and in combination) on variation in caribou calf recruitment and adult female survival (Johnson et al. 2020). • Ongoing – Since 2017, ENR has been using improved fire disturbance mapping (National Burned Area Composite) to more accurately reflect annual changes to area burned.
	<p>6.3.2: As new information becomes available, use it to improve and refine population status indicators for the NWT.</p>			<ul style="list-style-type: none"> • Implementation action is not underway.

¹¹ Estimated current population size is 6,000-7,000 individuals. In the past three years (2019-2021), the average lambda (growth rate) is above 1 (increasing) in all study areas. 71% of habitat remains undisturbed in the NT1 boreal caribou range.

7. RECOVERY STRATEGY REVIEW

The CMA is required under the *Species at Risk (NWT) Act* to review a management plan or recovery strategy every five years. The first review of the recovery strategy for boreal caribou took place on March 31, 2022.

The review determined that the [Recovery Strategy for the Boreal Caribou \(*Rangifer tarandus caribou*\) in the Northwest Territories](#) continues to meet the needs of Management Authorities to achieve the conservation and recovery goal for the species. As there is no indication the threats facing boreal caribou have been reduced and there remain gaps in the information required to support their conservation and recovery, there is a continued need for the guidance provided in the recovery strategy.

The review looked at the goal and objectives of the recovery strategy and determined they are still appropriate for the conservation and recovery of boreal caribou in the NWT.

Management Authorities and CMA participants also discussed changes that should be considered *if* or *when* the recovery strategy is amended, including:

- Including consideration of forecasted fire behaviour as it relates to wildlife use and habitat regeneration among the fire management tools that could be used to maintain high value caribou habitat areas (Action 1.3.2).
- Including wood harvesting as an activity where boreal caribou habitat supply should be considered when issuing permissions (Action 1.4.8).
- Clarifying what issuances of permissions and rights are referred to Action 1.4.10, as well as the mechanisms by which development activities could be revoked, scaled back, or delayed under Action 1.4.10.
- Adding a new action to address restoration of boreal caribou habitat damaged by human disturbance by developing a restoration strategy (Approach 1.4).
- Increasing the relative priority of research actions to encourage filling of knowledge gaps for boreal caribou, with emphasis on leveraging Indigenous and local knowledge (Objective 3).

While all Management Authorities agree more information on boreal caribou is needed, in particular around current abundance and pressures, it is recognized that capacity and resources are limited. If or when the recovery strategy is amended, the relative priority of *all* approaches should be reviewed and updated, as necessary.

8. NEXT STEPS

Progress has been made towards ensuring a healthy and sustainable boreal caribou population across its NWT range that offers harvesting opportunities for present and future generations. However, continued research and monitoring is required to improve information on current abundance, harvest levels, genetics and habitat recovery rates so that boreal caribou conservation can be based on the best possible information.

The recovery strategy for boreal caribou will continue to guide conservation and recovery of the species. The recovery strategy will be reviewed again in five years and progress on its implementation (2022–2026) will be reported in 2027.

9. REFERENCES

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APPENDIX A – PROGRESS REPORT PARTNERS

The following governments and organizations contributed to the development of this progress report on boreal caribou:

Wildlife Management Advisory Council (NWT)

The Wildlife Management Advisory Council (NWT) advises governments on wildlife policy, management, regulation, and administration of wildlife, habitat, and harvesting in the NWT portion of the Inuvialuit Settlement Region (*Inuvialuit Final Agreement*, section 14). The Wildlife Management Advisory Council (NWT) works collaboratively with the Inuvialuit Game Council, hunters and trappers committees, and government in research, monitoring, and management of wildlife and habitat. The Wildlife Management Advisory Council (NWT) consults regularly with the Inuvialuit Game Council and hunters and trappers committees, and these groups assist the Council in carrying out its functions, upon request.

Gwich'in Renewable Resources Board

The Gwich'in Renewable Resources Board is the main instrument of wildlife management in the Gwich'in Settlement Area. Its powers include approving plans for the management and protection of particular wildlife populations (including endangered species), particular wildlife habitats, and forests (*Gwich'in Comprehensive Land Claim Agreement*, sections 12 and 13). The Gwich'in Renewable Resources Board works collaboratively with renewable resources councils and government in research, monitoring, and management of wildlife and habitat. The Gwich'in Renewable Resources Board consults regularly with the renewable resources councils, and its management authority may be delegated to renewable resources councils.

Sahtú Renewable Resources Board

The Sahtú Renewable Resources Board is the main instrument of wildlife management in the Sahtú Settlement Area. Its powers include approving plans for the management and protection of particular wildlife populations (including endangered species), particular wildlife habitats, and forests (*Sahtu Dene and Metis Comprehensive Land Claim Agreement*, sections 13 and 14). The Sahtú Renewable Resources Board works collaboratively with renewable resources councils and government in research, monitoring, and management of wildlife and habitat. The Sahtú Renewable Resources Board consults regularly with the renewable resources councils, and management authority may be delegated to renewable resources councils.

Wek'èezhìi Renewable Resources Board

The Wek'èezhìi Renewable Resources Board is the wildlife co-management authority responsible for managing wildlife, wildlife habitat, forests, plants, and protected areas in Wek'èezhìi as set out in the *Tłı̄chq Agreement* (*Tłı̄chq Agreement*, sections 12-14 & 16). Responsibilities include making determinations or recommendations on management proposals for activities that may affect wildlife and wildlife habitat. The Wek'èezhìi Renewable Resources Board works collaboratively with the Tłı̄chq communities and

Tłıchq, territorial, and federal governments in research, monitoring, and management of wildlife and habitat.

Tłıchq Government

The Tłıchq Government has powers to enact laws in relation to the use, management, administration, and protection of lands and renewable resources on Tłıchq lands. This includes laws relating to the management and exercise of harvesting rights for wildlife, plants, and trees (*Tłıchq Agreement*, section 7). The Tłıchq Government has prepared the *Tłıchq Land Use Plan* to assist in managing approximately 39,000 km² of Tłıchq lands. The Plan provides a guide for future development by outlining how Tłıchq land will be protected and how activities and development on Tłıchq lands should occur.

Government of the Northwest Territories (GNWT)

The Government of the Northwest Territories (GNWT), represented by the Minister of Environment and Natural Resources (ENR), has ultimate responsibility for the conservation and management of wildlife, wildlife habitat, and forest resources in the NWT, subject to land claims and self-government agreements. It is the Minister of ENR's ultimate responsibility to prepare and complete management plans and recovery strategies under the *Species at Risk (NWT) Act*. Other GNWT departments also have responsibilities, including for land management, resources, communities, public infrastructure, and economic development. ENR 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 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).

Acho Dene Koe First Nation

Acho Dene Koe First Nation's traditional territory and waters span three jurisdictions: British Columbia, the Yukon Territory and the Northwest Territories. As the longstanding stewards of this land, Acho Dene Koe members have carefully maintained traditional practices that value balance, sustainability and responsibility. Acho Dene Koe plays an important role in the conservation and management of species at risk in the Northwest Territories, including boreal caribou.

North Slave Métis Alliance

The North Slave Métis Alliance (NSMA) is a non-profit society that represents the Aboriginal rights-bearing Métis people of the Northwest Territories, who primarily exercise their Aboriginal rights north and east of Great Slave Lake. The NSMA environment department partners with other Indigenous governments, municipal, territorial and the federal government to manage and monitor the traditional lands and waters of the NSMA.