

**ANNUAL
REPORT
2022
2023**

**MACKENZIE RIVER
BASIN BOARD**



**“A healthy and diverse
aquatic ecosystem for
the benefit of present
and future generations.”**

– The Mackenzie River Basin Board vision

Photo credit: eighty one images

Cover: Jak park, Inuvik, NWT

Inside cover: Boot Lake and the Mackenzie River, Inuvik, NWT

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Letter of Transmittal

Honourable Ministers:

On behalf of the members of the Mackenzie River Basin Board (MRBB), it is my pleasure to submit the Annual Report of the MRBB for the Fiscal year 2022-23.

The report summarizes the work of the MRBB and its committees and provides an update on the status of negotiation and implementation of Bilateral Water Management Agreements between individual provinces and territories. Notable highlights from the period covered in this report include:

- The *Mackenzie River Basin Transboundary Waters Master Agreement* was signed 25 years ago. ECCC contributed to developing a video on the MRBB to commemorate the occasion. MRBB members met in Yellowknife in October 2022 and dedicated part of the meeting to reflecting on the strengths and successes of the MRBB and reaffirmed reconciliation remains a primary focus now and into the future.
- The governments of Yukon and the Northwest Territories signed an updated version of the 2002 Bilateral Water Management Agreement for the Peel and Mackenzie Delta sub-basin and signed a new Bilateral Water Management Agreement for the Liard sub-basin.
- The MRBB Secretariat organized or supported sessions on reconciliation and good ways of working in the Basin. This includes a webinar with Gudia Johnson and Heidi Swanson, two co-authors of "Towards Reconciliation: 10 calls to action for natural scientists working in Canada", and a presentation by Elder Joe Copper Jack who developed the Land and Peoples Relationship Model.
- Work to address recommendations from the 2020 Strategic and Operating Review report that focused on administrative process was significantly advanced through the development of Standard Operating Procedures and a Secretariat manual for the MRBB.

Please do not hesitate to contact me if you have any questions about the report, the MRBB, or the work of its committees. I can be reached at Nadine.Stiller@ec.gc.ca.

Sincerely,



Nadine Stiller
Chair, Mackenzie River Basin Board

The Honourable Steven Guilbeault

Minister of Environment and Climate Change
Minister Responsible for Parks Canada Agency
Minister Responsible for Canada Water Agency
Government of Canada
Ottawa, Ontario

The Honourable Gary Anandasangaree

Minister of Crown-Indigenous Relations
Minister of Northern Affairs
Government of Canada
Ottawa, Ontario

The Honourable Daryl Harrison

Minister Responsible for Saskatchewan Water
Security Agency
Government of Saskatchewan
Regina, Saskatchewan

The Honourable Rebecca Schulz

Minister of Environment and Protected Areas
Government of Alberta
Edmonton, Alberta

The Honourable Randene Neill

Minister of Land, Water, and Resource Stewardship
Government of British Columbia
Victoria, British Columbia

The Honourable Jay Macdonald

Minister of Environment and Climate Change
Government of Northwest Territories
Yellowknife, Northwest Territories

The Honourable Nils Clarke

Minister of Environment
Government of Yukon
Whitehorse, Yukon

Message from the Chair

The fiscal year 2022-23 marked the start of a new hybrid phase of work for the Mackenzie River Basin Board (MRBB). MRBB members transitioned back to working in an office environment and resumed in-person meetings as public health restrictions associated with the Covid-19 virus were eased, the governments of Yukon, Northwest Territories and British Columbia adopted an innovative multilateral approach to water management in the Liard sub-basin, and the MRBB Secretariat dedicated time to developing foundational guiding documents in support of a substantive future update of the State of the Aquatic Ecosystem report.

In 2022, the MRBB marked the 25th anniversary of the signing of the *Mackenzie River Basin Transboundary Waters Master Agreement*. ECCC produced a short video that highlights the important role of the MRBB. MRBB members also planned to meet in Fort Smith, NWT, a community located in the heart of the Mackenzie River Basin, close to the Alberta – Northwest Territories border. A shortage of pilots affected commercial flights to Fort Smith so the meeting was moved to Yellowknife, NWT. In Yellowknife, MRBB members spent time with staff from the Northern Heritage Centre and learned about Indigenous place names, the effects of changing climate in the basin, and moose skin boats which are unique to the Mackenzie River Basin ([MooseSkin Boat – PWNHC | CPSPG](#)). Members also dedicated time to understand how the work of the MRBB can support the UN Declaration on the Rights of Indigenous Peoples, and Truth and Reconciliation Calls to Action. The Traditional Knowledge and Strengthening Partnerships Committee, the Bilateral Water Management Agreements and the State of the Aquatic Ecosystem Report have all influenced the evolution of the MRBB.

As of April 2023, Bilateral Water Management Agreements (BWMA) are complete between:

- British Columbia and the Northwest Territories,
- Alberta and the Northwest Territories,

- Northwest Territories and Yukon, and
- British Columbia and Yukon.

In August 2022, the governments of Yukon and the Northwest Territories signed an updated version of the 2002 Bilateral Water Management Agreement for the Peel and Mackenzie Delta sub-basin and signed a new Bilateral Water Management Agreement for the Liard sub-basin. MRBB members appreciate the time and effort that went into these agreements. The MRBB is supporting the implementation of the completed BWMA and continues to monitor the progress of negotiations for the remaining 3 BWMA.

Guided by priorities outlined in the interim Strategic Plan, MRBB members dedicated time to learning about actions that support reconciliation. There were a number of presentations from MRBB members outlining ongoing work, a special session with Gudia Johnson and Heidi Swanson (“Towards Reconciliation: 10 calls to action for natural scientists working in Canada”), and a presentation by Elder Joe Copper Jack who developed the Land and Peoples Relationship Model. The MRBB also supported a virtual knowledge sharing series that focused on some of the information gaps in the 2021 State of the Aquatic Ecosystem Report (SOAER). The sessions were well attended and included presentations on permafrost thaw, hydrological modelling and climate change.

As the MRBB positions itself for the next 25 years of collaboration, MRBB members will consider how to approach the Agreement in a time where relationships are being redefined, and climate change demands a different approach to our natural world.

Sincerely,



Nadine Stiller
Chair, Mackenzie River Basin Board

Message from the Executive Director

The fiscal year 2022-23 was a year for taking stock and preparing for a new phase of work. It was also a year MRBB members and committees could finally meet in person as public health restrictions associated with the Covid-19 virus were eased. It was good to connect in person again and reap the benefits of in-depth discussions. 2022 also marked the 25th anniversary of the signing of the *Mackenzie River Basin Transboundary Waters Master Agreement*. I am grateful to MRBB members and staff, past and present, who have supported the vision and duties of this agreement and look forward to supporting the work of the MRBB as it evolves.

The MRBB Secretariat dedicated time to addressing administrative recommendations from the 2020 Strategic and Operational Review. This resulted in the development of a MRBB Standard Operating Procedures and a Secretariat manual, a review of meeting minutes to ensure that the by-laws were up to date, a website update (ongoing) and initiating a review and update of MRBB committee Terms of Reference documents.

The State of the Aquatic Ecosystem Report (SOAER) Committee members were largely focused on developing a 5-year roadmap to guide updates and improvement to the online SOAER. The SOAER Committee held an in-person/virtual hybrid workshop in Yellowknife that clarified important areas of focus for the next update of the SOAER. The workshop report laid the foundations for the draft 5-year SOAER roadmap. A sub-group that included the SOAER Chair worked on revising the SOAER Committee Terms of Reference (ToR) to a) record and describe how the SOAER Joint Steering Committee worked together to produce the 2021 SOAER and b) outline the principles under which the committee will continue to work going forward. Both the draft 5-year roadmap and the revised ToR will be presented to the MRBB for review and decision in 2023-24.

The Traditional Knowledge and Strengthening Partnerships (TKSP) Committee spent time discussing priorities and identifying action and projects to be advanced in 2023-24. Areas of focus include development of clear direction to the MRBB on the topic of reconciliation and development of a “Bulletin” style update to be shared with Indigenous communities and organizations across the basin. This bulletin will be submitted to local newspapers and will help to better share the work of the TKSP Committee and MRBB across the basin.

Water Quality Task Team members made significant progress on their work to recommend methods for water quality trend analysis across the basin. A trend methods study report was received in July 2022 which formed the basis for additional discussion and analysis. Task team members intend to make a recommendation to the MRBB in 2023-24.

In 2023-24, the MRBB Secretariat will dedicate time to organizing a MRBB Strategic Planning meeting, continue to develop partnerships with individuals and organizations to advance shared priorities, and focus on ensuring the MRBB Secretariat has the capacity to support committees as they advance work on the SOAER, support outreach in the basin, share information and discuss technical issues that arise from implementation of the Bilateral Water Management Agreements.



Paula Siwik
Executive Director, Mackenzie River Basin Board



The Mackenzie River Basin Transboundary Waters Master Agreement

The Mackenzie River Basin Board (MRBB) acknowledges the Indigenous Peoples who live and have lived in the Mackenzie River Basin for thousands of years, since time immemorial, from the headwaters in the mountains, through the boreal forest and tundra, to the outlet at the Arctic Ocean. This report summarizes the activities of the MRBB, its Secretariat and Committees for the fiscal year from April 1, 2022 to March 31, 2023. Submission of this report fulfills one of the duties of the MRBB as outlined in the *Mackenzie River Basin Transboundary Waters Master Agreement*.

Background

The waters that feed the Mackenzie River Basin, also known as Deh-Cho (Big River) in Dene language, start in the mountains. The headwaters of the Peace and Athabasca rivers flow northeast from the Rocky Mountains toward the Peace-Athabasca Delta (PAD), the largest freshwater inland river delta in North America. The PAD consists of the convergence of the Peace River delta from the north and the Athabasca River delta from the south that come together between the western end of Lake Athabasca and Lake Claire to form the delta's myriad of lakes, wetlands and distributaries. Water generally flows north out of the PAD to the Peace River and, at the confluence of the Rivière des Rochers and the Peace River, the water continues its journey north as the Slave River. The Slave River then flows into Great Slave Lake, where it mixes with other major tributaries such as the Hay, Lockhart and Taltson. The Mackenzie River flows out of Great Slave Lake

and the water continues its journey north towards the Arctic Ocean. On the way, it is joined by the Liard River, the Peel River, and water from Great Bear Lake, the largest lake entirely in Canada. The water of the Mackenzie River ends its journey at the Mackenzie River Delta, where it meets the Beaufort Sea.

The governments of Canada, British Columbia, Alberta, Saskatchewan, Northwest Territories and Yukon (the Parties) signed the *Mackenzie River Basin Transboundary Waters Master Agreement* (the Master Agreement) to address the fundamental issue of water management cooperation. The Master Agreement came into effect on July 24, 1997, which means that as of this year, the parties have been committed to working together for 25 years. The purpose of the Master Agreement is to establish common principles for the cooperative management of the Aquatic Ecosystem of the Mackenzie River

Basin (Figure 1), to establish an administrative mechanism to facilitate the application of the principles set forth in the Master Agreement, and to make provisions for Bilateral Water Management Agreements that address inter-jurisdictional water quality, quantity and related issues.

The Master Agreement Principles

Under the Master Agreement, Part C, the Parties are committed to the following:

- Managing the Water Resources¹ in a manner consistent with the maintenance of the Ecological Integrity² of the Aquatic Ecosystem³;
- Managing the use of the Water Resources in a sustainable manner for present and future generations;
- The right of each to use or manage the use of Water Resources within its jurisdiction provided such use does not unreasonably harm the Ecological Integrity of the Aquatic Ecosystem in any other jurisdiction;
- Providing for early and effective consultation, notification and sharing of information on developments and activities that might affect the Ecological Integrity of the Aquatic Ecosystem in another jurisdiction; and
- Resolving issues in a cooperative and harmonious manner.



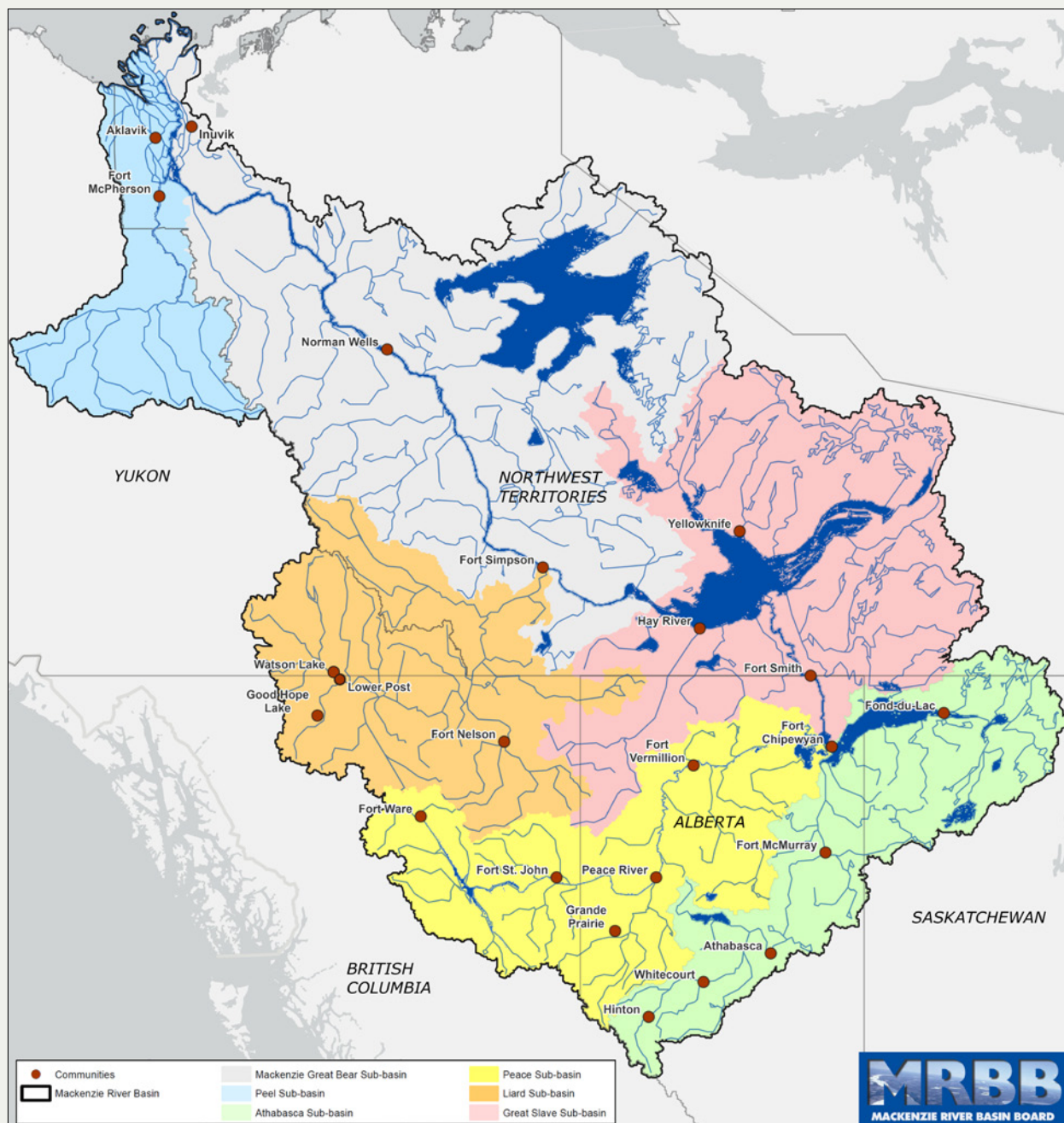
Photo credit: eighty one images
Boot Lake, Inuvik, NWT

¹ “Water Resources” is defined in the *Mackenzie River Basin Transboundary Waters Master Agreement* as the Mackenzie River and any order tributary to the Mackenzie River including deltas, tributaries of deltas, wetlands and lakes which contribute water to the Mackenzie River, whether in a liquid or frozen state, excluding groundwater except where the Parties to a Bilateral Water Master Agreement agree to its inclusion.

² “Ecological Integrity” is defined in the *Mackenzie River Basin Transboundary Waters Master Agreement* as the conditions that the Parties to any of the Bilateral Water Management Agreements determine are necessary to maintain a healthy and diverse Aquatic Ecosystem.

³ “Aquatic Ecosystem” is defined in the *Mackenzie River Basin Transboundary Waters Master Agreement* as the interacting components of air, land and water and living organisms, including humans that relate to the Water Resources of the Mackenzie River Basin.

Figure 1: The Mackenzie River Basin



The Mackenzie River Basin Board (MRBB)

Structure and Operations

The Mackenzie River Basin Board (MRBB) was established under Part D Section 1.a of the Master Agreement. The MRBB is assigned to administer the terms of the Master Agreement and to serve as a forum where all participating governments can cooperate in an effort to maintain ecological integrity.

The MRBB has no more than thirteen members. Three members, one each from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), Environment and Climate Change Canada (ECCC), and Parks Canada Agency (Parks), represent the Government of Canada. Each of the five provincial and territorial governments in the basin appoints one Indigenous member and one government member. This inter-jurisdictional partnership, the presence of members representing Indigenous interests alongside representatives of the governments, and the commitment by all Parties to maintain ecological integrity make the MRBB unique.

Part D Section 2.d of the Master Agreement establishes an administrative arm for the MRBB called the Secretariat. The Secretariat is tasked to carry out the programs, administrative duties and investigations required by the MRBB. Currently, the MRBB Secretariat consists of one permanent staff member housed within ECCC.

The MRBB is not a regulatory or licensing board and has no legal or policy basis to regulate resource use in any of the jurisdictions. However, the MRBB may inform regulatory decisions made in the various jurisdictions by providing factual material, such as the State of the Aquatic Ecosystem Report (SOAER), or by participating in and influencing pre- or post-regulatory processes, such as planning, regional or cumulative environmental impact assessment processes. The work of the MRBB is directed by the 19 duties outlined in the Master Agreement and the nine goals adopted by the MRBB in 2010 (Appendix I).

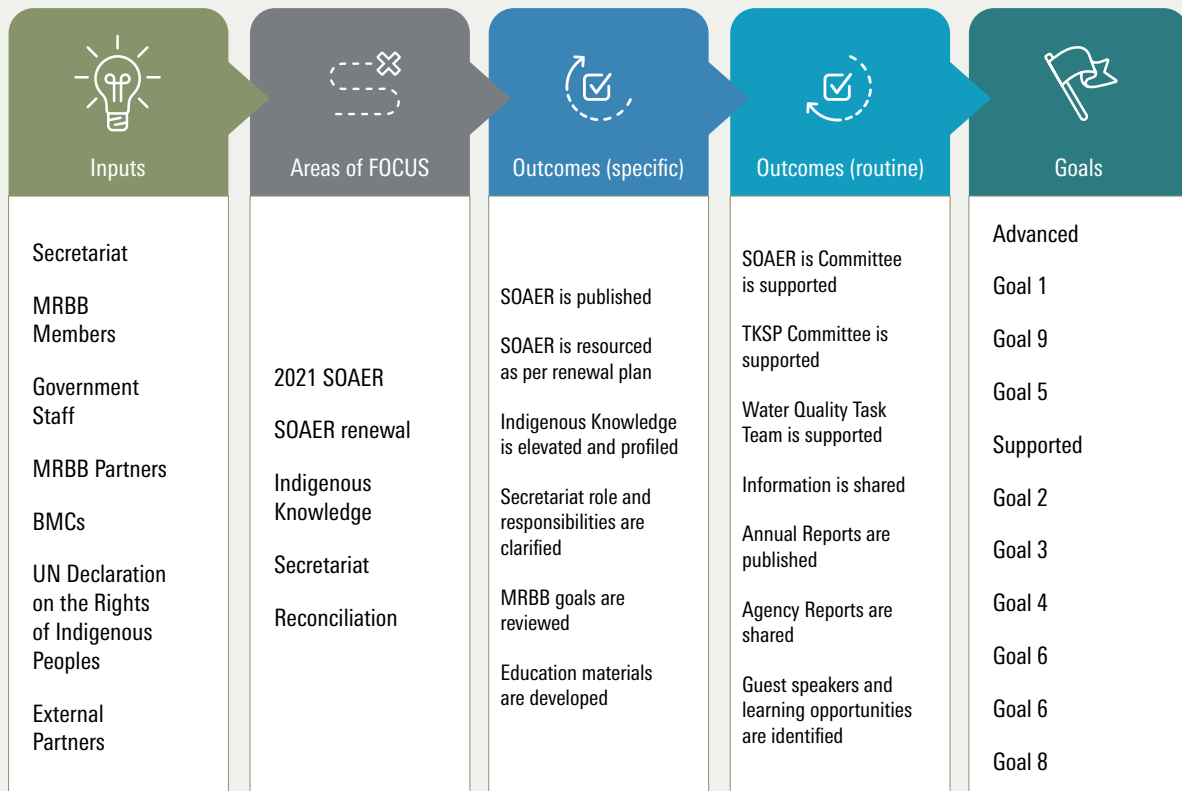
The MRBB conducts business, shares information, and provides guidance to committees and the Secretariat through a series of formal meetings. The ECCC Board Member has chaired MRBB meetings by consensus of the other Parties since the Board's inception. The MRBB met virtually and in person in 2022-23. Virtual meetings were held in May, December, and January while MRBB members met in person in Edmonton (June) and Yellowknife (October). The June and October meetings were hybrid meetings as not all members were able to travel.

Finances

Under the Master Agreement, ECCC is responsible for managing the expenditures of the Board, the costs of which are shared equally by the signatories to the agreement. MRBB costs include staffing and operation of the Secretariat, ensuring effective Indigenous participation by paying MRBB-related expenses of Indigenous members, and tendering and managing contracts that progress MRBB business when required. The MRBB is currently in a strong financial position. Please refer to Appendix II for the 2022-23 financial report.

2021-23 Strategic Plan

In 2019-20, the MRBB directed that an independent strategic and operational review of the MRBB be undertaken to ensure that the Board is fulfilling its duties in an effective and efficient manner. The Secretariat received the report entitled "Strategic and Operational Review of the Mackenzie River Basin Board" on March 31, 2020, and used surveys, small group discussion and dedicated time during meetings to prioritize report recommendations. MRBB members prioritized recommendations that touched on the work and duties of the Secretariat, State of the Aquatic Ecosystem reporting, and the sharing and inclusion of Indigenous knowledge. These themes formed the foundation of a two-year interim Strategic Plan that was approved at the fall 2021 meeting.

Figure 2: Logic model for 2021-23 Interim Strategic Plan

The plan is founded on high priority recommendations from the 2020 Strategic and Operational Review Report, and an interest in advancing reconciliation at the MRBB table.

2022-23 Highlights

In the fiscal year 2022-23, MRBB members and committees supported many of the outcomes of the 2021-23 Strategic Plan. Details about committee work are included in the committee summaries later in the report.

Table 1: Specific Logic Model Outcomes of the 2021-23 interim Strategic Plan

2021-23 Strategic Plan Specific Outcomes	Action to support outcome	Status
SOAER is published	2021 SOAER was approved by MRBB in 2021	Complete (2022-21)
SOAER is resourced as per renewal plan	SOAER committee drafting 5-year roadmap	In progress and will be presented to the MRBB in 2023-24
Indigenous knowledge is elevated and profiled	Contract with Tracking Change program to identify available IK not currently included in the SOAER	Contract is complete and work to include information is ongoing
Secretariat roles and responsibilities are clarified	Contract to develop Standard Operating Procedures and Secretariat manual	Complete (2022-23). Material under final review
MRBB goals are reviewed	Deferred	To be discussed at 2023 Strategic Planning exercise
Education materials are developed	Opportunity to advance this outcome through Bilateral Management Committees	Ongoing

MRBB members dedicated significant time and effort to learning about initiatives in the basin. MRBB members had presentations from: Government of Canada Department of Justice, Crown Indigenous Relations and Northern Affairs Canada, Government of British Columbia Ministry of Indigenous Relations and Reconciliation, and a joint Parks Canada, ECCC presentation on government level actions that support reconciliation; Gudia Johnson and Heidi Swanson on the “Towards Reconciliation: 10 calls to action for natural scientists working in Canada” ([Towards reconciliation: 10 Calls to Action to natural scientists working in Canada \(facetsjournal.com\)](#)); and Elder Joe Copper Jack shared the Land and Peoples Relationship model ([The Land and Peoples Relationship Model \(respectcareshare.ca\)](#)). This model is guiding Bilateral Water Management Agreement related work in the Liard River sub-basin.



ECCC, with support of the MRBB Secretariat, organized two science-based Knowledge Sharing webinars that start to address science gaps in the SOAER. The “Permafrost Thaw, Climate, and Monitoring Flow Regimes in Sediment Loads” session was held in January and included a series of presentations followed by a plenary session. The “Basin-scale Hydrological Modelling” session was held in March and included presentations followed by breakout room discussions. Both sessions were well attended and feedback from participants indicated that they found the sessions valuable. The MRBB Secretariat will endeavor to host a session in 2023-24.



MRBB members were invited to the October 2022 launch of the Alberta – Northwest Territories Bilateral Management Committee Traditional Knowledge Framework. The launch was the same week as the fall MRBB hybrid meeting and seven MRBB members attended the event.

Looking Forward

The primary focus of fiscal year 2023-2024 will be an in-person meeting to discuss and agree on priorities and themes to include in a 5-year Strategic Plan.

Agency Reports and Information Sharing

As per prior notification provisions within the Master Agreement, MRBB members shared information on issues and activities in the Mackenzie River Basin at both the spring and fall meetings. Written agency reports from government agencies were presented at the fall meeting. A common theme among all the 2022 agency reports is climate change with agencies focused on planning and resiliency. Links to notable highlights from the agency reports are shared below and copies of the 2022 Agency Reports can be found on the MRBB website under the resources tab ([Agency Reports – Mackenzie River Basin Board \(mrbb.ca\)](#)).

Environment and Climate Change Canada supported two webinars in 2022-23 that focussed on aquatic research and monitoring in the Mackenzie River Basin. The Knowledge Sharing Series topics were informed by information gaps in the 2021 SOAER. Recordings of the presentations are available on the MRBB website.

Government of British Columbia

- Formation of the new Ministry of Land, Water and Resource Stewardship : [Ministry of Water, Land and Resource Stewardship – Province of British Columbia \(gov.bc.ca\)](#)
- Release of the Climate Preparedness and Adaptation Strategy: [Climate Preparedness and Adaptation Strategy – Province of British Columbia \(gov.bc.ca\)](#)
- BC Hydro Site “C” Project update: [Home page | Site C \(sitecproject.com\)](#)

Government of Yukon

- Assessing Climate Change Risk and Resilience in the Yukon: [Assessing Climate Change Risk and Resilience in the Yukon](#) – main report | Government of Yukon
- Yukon State of the Environment interim report: [See Yukon state of the environment reports](#) | Government of Yukon

Government of Northwest Territories

- 2030 Energy Strategy and Climate Change Strategic Action Plan Reports: [GNWT Releases 2021-2022 Reports on Climate Action](#) | Government of Northwest Territories
- The 13th Annual Water Stewardship Strategy Implementation Workshop brought together water and climate change partners under the theme “Adapting to Change and Building a Resilient NWT” in October 2022 in Dettah, NWT.

Government of Alberta

- Alberta Environment and Protected Areas Regulatory Transformation: [Digital Regulatory Assurance System](#) | Alberta.ca
- Surface Water Allocation Directive: <https://open.alberta.ca/publications/9781460143339>
- Alberta River Forecast System update: <https://rivers.alberta.ca/>
- Major Projects: <https://www.alberta.ca/environmental-impact-assessments-current-projects>
- Alberta Energy Regulator Tailings Management Framework: [Tailings Management](#) | Alberta Energy Regulator (aer.ca)
- Water Planning and Advisory Council updates on key publications:
 - Mighty Peace Watershed Alliance, Wapiti Watershed Source Water Protection Plan (2021): <https://www.mightypeacewatershedalliance.org/>

- Athabasca Watershed Council, Athabasca Integrated Watershed Management Plan (2021): <https://awc-wpac.ca/>

Government of Saskatchewan

- Saskatchewan’s Growth Plan and Prairie Resilience Climate Change Strategy: <https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/a-made-in-saskatchewan-climate-change-strategy/saskatchewan-climate-change-strategy>

Environment and Climate Change Canada

- Wood Buffalo National Park Action Plan (joint item with Parks Canada Agency): [Wood Buffalo National Park World Heritage Site Action Plan](#) – Wood Buffalo National Park (canada.ca)
- Oil Sands Monitoring Program Data: [Surface Water Quality, Oil Sands Region – Environment and Climate Change Canada Data](#)
- Water Quality Data in the MRB: [National Long-term Water Quality Monitoring Data – Environment and Climate Change Canada Data](#)
- National Hydrometric Network : [Real-Time Hydrometric Data Map Search – Water Level and Flow](#) – Environment Canada (ec.gc.ca)

Crown-Indigenous Relations and Northern Affairs Canada

- United Nations Declaration on the Rights of Indigenous Peoples Act: [Background: United Nations Declaration on the Rights of Indigenous Peoples Act](#) (justice.gc.ca)
- Arctic and Northern Policy Framework: [Arctic and Northern Policy Framework](#) (rcaanc-cirnac.gc.ca)
- CIRNAC’s Climate Change in Indigenous and Northern Programs: [Climate change in Indigenous and Northern communities](#) (rcaanc-cirnac.gc.ca)
- Policy on Scientific and Indigenous Knowledge Integrity: [Policy on Scientific and Indigenous Knowledge Integrity](#) (rcaanc-cirnac.gc.ca)

Bilateral Water Management Agreements

The Master Agreement makes provisions for provinces and territories to complete Bilateral Water Management Agreements (BWMA). The BWMA guide how the jurisdictions work together to identify risks to water quality, quantity, and aquatic ecosystem health, and facilitate joint learning that informs bilateral water management in the Mackenzie River Basin.

Status

British Columbia and Northwest Territories completed a BWMA in October 2015.

- British Columbia and Northwest Territories' Bilateral Management Committee (BMC), which includes territorial and provincial government members and Indigenous members, administers the BC-NWT BWMA.
- The focus in 2022-23 has been to work on a multilateral approach with the governments of BC, Yukon and NWT and the Indigenous governments in the Liard Watershed to develop a Learning Plan for the Liard Watershed.
- The British Columbia/Northwest Territories BWMA applies to all transboundary waters shared directly between British Columbia and Northwest Territories in the Mackenzie River Basin, primarily the Liard Watershed.

Alberta and Northwest Territories completed a BWMA in March 2015.

- Alberta and Northwest Territories are implementing the terms of the BWMA. The Parties have established a Bilateral Management Committee to administer the agreement, as well as technical committees to support the agreement. The two-year annual report for April 2018-March 2020 is available online; the April 2020-March 2021 report is being finalized.
- An Alberta/Northwest Territories BMC Advisory Circle was established to guide the co-development of a draft Traditional Knowledge (TK) framework that will chart a course for meaningful and

respectful inclusion of TK into the BWMA implementation (Appendix C). The Advisory Circle met in Dettah in October 2022 and continues to advance this task. Indigenous Knowledge is elevated and profiled by a multi-year BMC Kát'odeh/Hay River Basin (KRB) Indigenous Community Based Monitoring (ICBM) program that is focused on building capacity within the interested KRB Indigenous communities to develop and implement an ICBM pilot project to address questions about the health of the aquatic ecosystem in the basin. The program objectives are to: build collaborative partnerships with communities; advance place-based environmental stewardship; support the mobilization and sharing of Indigenous Knowledge and bridge with Western science where applicable; and mobilize credible information to inform local and transboundary communities.

- The Alberta/Northwest Territories BWMA applies to all transboundary waters shared by Northwest Territories and Alberta in the Mackenzie River Basin.

Northwest Territories and Yukon signed two agreements in 2022: an updated BWMA for the Liard Watershed.

- The original Yukon/ Northwest Territories Transboundary Water Management Agreement was signed in 2002 and focused solely on the Peel/Mackenzie Delta sub-basin. This was the first Bilateral Agreement completed under the *Mackenzie River Basin Transboundary Waters Master Agreement*.

- In 2022, the governments of Yukon and Northwest Territories signed an updated Agreement for the Peel/Mackenzie Delta sub-basin, and a new Agreement for the 64km² of the Liard Watershed, which is not covered by either of the British Columbia/Yukon or British Columbia/ Northwest Territories BWMA.

British Columbia and Yukon signed a BWMA for the Liard Watershed in March 2017.

- British Columbia and Yukon have established a Bilateral Management Committee (BMC), which includes territorial and provincial government members and Indigenous members, to administer the agreement. A Terms of Reference has been finalized, the methodology used for classification has been updated, and the BMC has prioritized the development of a Learning Plan for the Liard Watershed.
- British Columbia and Yukon completed an Annual Implementation Report for 2021 that was released in 2022.
- The British Columbia/Yukon BWMA applies to all transboundary waters shared between British Columbia and Yukon in the Mackenzie River Basin, primarily the Liard Watershed.

Bilateral Water Management Agreements; Multilateral Initiative

- The governments of Yukon, Northwest Territories and British Columbia have embarked on a multilateral process to develop a Learning Plan for the Liard Watershed. The process is guided by the Land and Peoples Relationship Model developed by Elder Joe Copper Jack.

British Columbia and Alberta BWMA negotiations are ongoing.

- British Columbia and Alberta have negotiated a BWMA in principle and intend to coordinate engagement on the draft prior to ratifying it.

BWMA engagement has been postponed pending the outcomes of British Columbia's internal engagement work on water management with First Nations in British Columbia. Adjustments to the BWMA may need to be discussed as new understanding of the water governance in British Columbia becomes available. Regular bilateral discussions are ongoing.

- The British Columbia/Alberta BWMA applies to all transboundary waters shared between British Columbia and Alberta in the Mackenzie River Basin.

Alberta and Saskatchewan BWMA negotiations are ongoing.

- Alberta and Saskatchewan have shared information, discussed their respective interests, and discussed the components for each section of the BWMA. More detailed discussions on the BWMA contents began in September of 2022.
- The Alberta/Saskatchewan BWMA will apply to all transboundary waters shared by Saskatchewan and Alberta in the Mackenzie River Basin.

Saskatchewan and Northwest Territories BWMA negotiations are ongoing.

- Saskatchewan and the Northwest Territories have shared information, discussed their respective interests, and discussed the components for each section of the BWMA. Technical teams are reviewing the draft appendices.
- The Saskatchewan/Northwest Territories BWMA will apply to all transboundary waters shared by Saskatchewan and the Northwest Territories in the Mackenzie River Basin.

Looking Forward

- The MRBB will look for linkages between its work and the work completed for the BWMA. Information collected under the BWMA could support State of the Aquatic Ecosystem reporting.

MRBB Committees

Committees	Responsibilities
State of the Aquatic Ecosystem Report (SOAER) Steering Committee	Prepare and review SOAER reports
	Determine options for the format of the SOAER
	Establish process for the report preparation and subsequent updates
	Make recommendations on the report content
Traditional Knowledge and Strengthening Partnerships (TKSP) Steering Committee	Assist the MRBB in establishing common principals for the cooperative management of the aquatic ecosystem in the Mackenzie River Basin
	Recognize the inherent value of Indigenous Knowledge and governance in MRBB activities and encourage the meaningful integration of Indigenous Knowledge and effective governance practices into the MRBB's activities
	Provide an advisory function to the MRBB with respect to Indigenous partnership functions and activities
Water Quality Task Team (WQTT)	Provide a forum for communication and information exchange on water quality
	Recommend basin-wide agreed to approaches to assess water quality
	Develop reporting tools that support the SOAER and BWMA annual reporting requirements

State of the Aquatic Ecosystem Report (SOAER) Steering Committee

The focus of this committee in the 2022-23 fiscal year was development of a 5-year plan to update and enhance the online State of the Aquatic Ecosystem Report (SOAER). The committee met virtually and in person, and the committee chair updated MRBB members at the June MRBB meeting in Edmonton. The update included a discussion on work that had been advanced on the exploration of improved maps, the contract that identified publicly available Indigenous knowledge from the Tracking Change project, and a proposal for an in-person workshop to discuss and explore the future of the SOAER. MRBB members provided guidance and shared their expectations for a 5-year roadmap and approved an in-person workshop for the Committee to complete this work.

The SOAER Steering Committee Workshop took place in Yellowknife on November 8 and 9, 2022. The committee discussed ways to address gaps in the 2021 SOAER and identified priority tasks. The ideas and outcomes from workshop led to a draft 5-year roadmap that includes a focus on:

- Sharing Indigenous knowledge, through stories and oral knowledge and that emphasizes local priorities and concerns;
- Opportunities to adjust the website to increase interactivity and support accessibility of content, improve maps and consider their role on the website, and enhance information organization and stewardship;
- A commitment by SOAER committee members to continuously improve grounding in reconciliation through education and practice.

A small group of interested volunteers from the Committee along with the Chair and MRBB Executive Director also began work on a revised Terms of Reference (ToR). This document serves two purposes – one is to record and describe how the SOAER Joint Steering Committee has worked together to produce the 2021 SOAER and the other is to direct how the committee will continue to work together going forward.

Looking Forward

The 5-year roadmap and the new ToR will be shared with MRBB members in 2023-24. Once approved, the SOAER Steering Committee can begin the process of prioritizing and resourcing different components of the SOAER. Committee members have indicated that they see value in having one in-person meeting per year to improve communication and relationships, as well as to work towards a common understanding and vision. The Committee still has many significant hurdles ahead, most notably with the stewardship and presentation of Indigenous Knowledges. Finally, the SOAER Steering Committee has begun to look for a new Chair as the current chair will transition out of that role in spring 2023-24.

Traditional Knowledge and Strengthening Partnerships (TKSP) Steering Committee

This past year has been one of sharp focus for the Traditional Knowledge and Strengthening Partnerships (TKSP) Committee. Since the June 2022 meeting of the Board, and the subsequent hiring of Tracy Howlett to provide support, the TKSP Committee has met (virtually) three times (in November, January, and April) to discuss committee business, and once in support of the SOAER. In addition, Tracy has met with the MRBB Executive Director monthly and has engaged in several one-on-one phone calls and regular email correspondence with TKSP Committee members to ensure regular communication and knowledge sharing.

Key Activity – Workplanning

Over the year, the TKSP Committee has been future-focused, developing a work plan for their own committee-level work and contributing to the development of the SOAER work plan. As integral members of the SOAER committee, TKSP Committee members have provided a great deal of input into the production of the SOAER in its current iteration but has also provided ideas for the further enhancement of the report. Most members of the TKSP Committee were able to participate in the November SOAER workshop and contributed comments after reviewing the summary report.

For their own work, the committee reviewed notes from the previous two years to identify key issues, ideas and actions that had been discussed. Using these actions as a guide, the committee met to discuss and prioritize activities for the coming three years. An initial list of 15 actions has been refined into two focus areas for the upcoming year. These focal areas are:

Policy & Administrative Guidance – Includes the development of clear direction to the Board on the topic of reconciliation. Actions to support this work will be the development of declarative statements or directives on the topic of reconciliation and the appropriate use of Traditional Knowledge (TK). These statements must align with and be embedded in the Strategic Plan and may require an update (and review) of the TKSP Committee Terms of Reference.

Communication & Awareness – In the short term, the TKSP Committee will begin developing regular “bulletin” style communications to be reviewed by the MRBB and shared with Indigenous communities and organizations across the basin. This bulletin will be submitted to local newspapers for inclusion to help to communicate the progress of the TKSP Committee, and the MRBB, across jurisdictions.

Additional Discussions

Membership has been an active topic this past year with the end of Corrine Porter's appointment, as well as the upcoming end of Gerry Cheezie's term in September of 2023. We were fortunate to have Corrine's participation at every meeting and hope to be able to maintain connections with her as the new Yukon representative joins the committee.

Leon Andrew, and Karin Smith-Fargey, along with Tracy Howlett, have also been participating in an advisory process for the AB/NWT BWMA's commitment to the development of a TK Framework. Many great conversations are being had at that table that can inform the work of the TKSP Committee. The TKSP Committee looks forward to bringing some of those learnings, particularly a newly developed declaration, to the Board.

Overall, it has been a positive and productive year for the TKSP Committee and there is a good feeling in the group that the committee will be able to achieve some good and important work in the coming months. It has long been a worry that we are not doing enough to communicate the good work of the MRBB across the basin, and we hope to be able to reach into communities more effectively through our work on the bulletin.

Looking Forward

While we are very sad to soon be saying goodbye to Corrine and Gerry, we look forward to welcoming new members soon and returning to face-to-face meetings, hopefully to be hosted in local communities.

Water Quality Task Team (WQTT)

The mandate of the Mackenzie River Basin Board (MRBB) Water Quality Task Team (WQTT) is to promote greater coordination and efficiency of tasks related to water quality to achieve the principles of the *Mackenzie River Basin Transboundary Waters Master Agreement*. The current tasks undertaken by the WQTT include (1) enabling communication and information exchange on water quality among the jurisdictions party to the MRBB, and (2) the development of consensus-based approaches for the assessment of water quality in transboundary rivers.

For the beginning of the 2022-2023 fiscal year, the Water Quality Task Team (WQTT) was focused on the completion of the trend methods study, commissioned by the Alberta/Northwest Territories Bilateral Management Committee. The resulting final report and the decision support tool from HDR Limited were received in July 2022; they provided several recommendations and considerations to the WQTT. For the next two quarters of the year, the WQTT analyzed and discussed HDR Limited's suite of recommendations and the decision tool. The WQTT held an extended monthly meeting to work up additional data examples from jurisdictions as part of the deliberation process for coming to consensus on a WQTT-recommended approach.

Additional information sharing efforts among the WQTT members this year included the presentation and discussion of the draft Liard River Basin Learning Plan development process.

In the fall of 2022, WQTT presented an overview of its current activities and work plan progress to the MRBB. In its update, WQTT members identified that challenges exist when scoping and performing work on the basin-wide scale with existing funding mechanisms. The WQTT strongly recommended that the MRBB consider developing a new mechanism to fund basin-wide work to remove pressure from BWMA-only funding sources.

Looking Forward

The WQTT will hold their inaugural in-person meeting in April 18-19, 2023. The final products from this meeting series are in preparation. The anticipated outputs from these meetings are: a working paper containing a jurisdictional scan for water quality triggers and objectives; a document containing the trend assessment approach to be recommended by WQTT, along with a record of the consensus process used by WQTT; a discussion paper on water quality triggers; and updated versions of both the WQTT biennial work plan and WQTT Terms of Reference.

One key item on the revised work plan is a joint WQTT-TKSP meeting, set tentatively for the early fall of 2024. The WQTT is also anticipating the future sharing of the SOAER 5-year roadmap and looks forward to identifying opportunities on the roadmap where WQTT can work together with the SOAER Committee.

Appendix I: MRBB Duties and Goals

The Master Agreement includes nineteen duties for the MRBB. They are listed below.

Table 2: Duties of the MRBB

Duty	As per the <i>Mackenzie River Basin Transboundary Waters Master Agreement</i>
	The Board shall act to carry out the purposes of this Agreement in accordance with the principles stated herein by:
a	providing a forum for communication, coordination, information exchange, notification and consultation
b	identifying, recommending and implementing such studies, investigations, programs and activities as are required to carry out this Agreement
c	considering the needs and concerns of Indigenous peoples through: (i) the provision of culturally appropriate communication, and; (ii) the incorporation of their Traditional Knowledge and values
d	establishing and directing the activities of the Secretariat, which shall carry out the programs approved by the Board and shall comprise such personnel as the Board may direct
e	recommending uniform objectives or guidelines for the quality and quantity of the Water Resources
f	establishing and directing technical committees which may be required to support the work of the Board
g	encouraging consistent monitoring programs
h	monitoring the progress of implementing the Bilateral Water Management Agreements
i	administering the dispute resolution process set out in Part E
j	meeting at least annually
k	reviewing this Agreement at least once every three years and proposing amendments to the Parties
l	creating a budget which shall include: (i) within two years of the signing of this Agreement, developing a five-year expenditure plan; (ii) establishing the annual Board budget within the limits approved by the Parties, and (iii) authorizing expenditures within the limits of approved budgets including, inter alia, expenditures for the staffing and operation of the Secretariat
m	as required, engaging agencies of the Parties, Indigenous organizations, or consultants, to undertake such assignments as the Board requires
n	submitting to the Ministers an annual report, within six months after the end of the Fiscal Year
o	submitting to the Ministers a report on the state of the Aquatic Ecosystem within 5 years after the end of the first Fiscal Year and every 5 years thereafter

p	keeping complete records of all expenditures made pursuant to this Agreement, supporting such expenditures with proper documentation, and making these records and documents available to auditors appointed by the Board or any Party hereto requesting the same
q	enacting, amending or repealing by-laws for the conduct of the Board and the Secretariat
r	establishing standards and procedures required for maintenance of order at its meetings
s	Carrying out such other related duties as all the Parties may request in writing

The MRBB adopted nine goals to help guide the work of the Board. They are listed below.

Table 3: MRBB Goals

Goal 1	Evaluate the health of the whole basin.
Goal 2	Investigate matters concerning the ecological health of the whole basin.
Goal 3	Advocate for the maintenance and improvement of the ecological health of the whole basin.
Goal 4	Educate the public, share information, and learn from others about matters concerning the ecological health of the whole basin.
Goal 5	Support and facilitate the increased participation of Indigenous Peoples in MRBB activities.
Goal 6	Encourage the development and implementation of Bilateral Water Management Agreements.
Goal 7	Ministers, Indigenous leaders, and appropriate staff of jurisdictions are informed of and engaged in MRBB activities.
Goal 8	Information, knowledge, and research are shared among jurisdictions – written reports.
Goal 9	MRBB affairs are administered effectively.

Appendix II: 2022-23 Financial Report

	Total
Contribution	
2021-22 Carry forward	\$ 717,665.09
Government of Saskatchewan	40,000.00
Government of Alberta	40,000.00
Government of British Columbia	40,000.00
Government of Yukon	40,000.00
Government of Northwest Territories	40,000.00
Crown Indigenous Relations and Northern Affairs Canada	40,000.00
Salary and benefits from ECCC	45,765.55
O&M from ECCC	716.20
a) Total	\$ 1,004,146.84
Expenditures	
Salary (Provinces and Territories)	110,007.15
O&M (Provinces and Territories)	29,275.09
O&M (CIRNAC)	40,000.00
Salary and benefits (ECCC)	45,765.55
O&M (ECCC)	716.20
b) Total	\$ 225,763.99
Free Balance	\$ 778,382.85

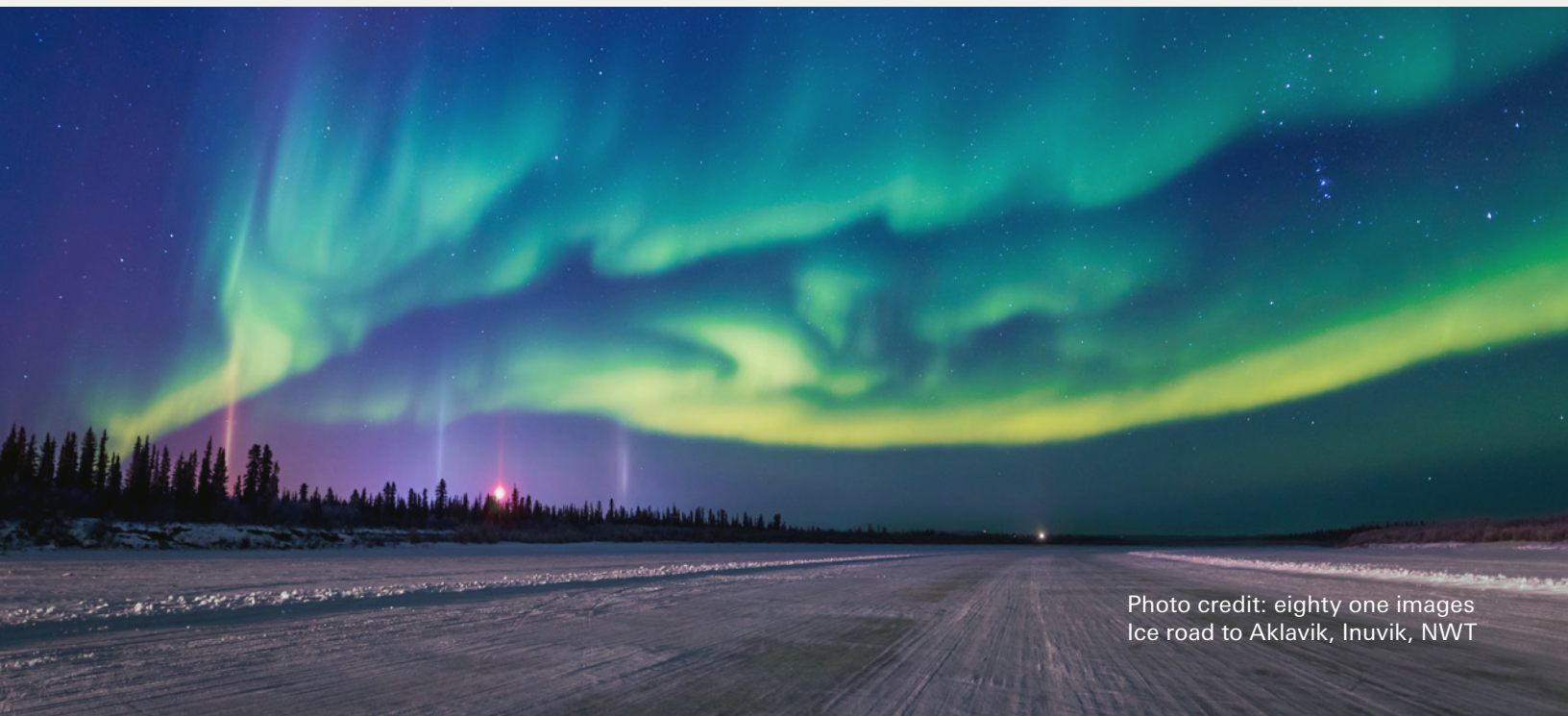


Photo credit: eighty one images
Ice road to Aklavik, Inuvik, NWT

Appendix III: MRBB Membership on March 30, 2023

Alberta

Government Member: Morna Hussey
Government Alternate: Carmen de la Chevrotière
Indigenous Member: Gerry Cheezie
*Morna Hussey replaces Andrew Wilson as member.

British Columbia

Government Member: Ted Zimmerman
Government Alternate: Sean Moore
Indigenous Member: Lana Lowe

Northwest Territories

Government Member: Julian Kanigan
Government Alternate: Nathen Richea
Indigenous Member: Leon Andrew

Crown-Indigenous Relations and Northern Affairs Canada

Government Member: Matthew Spence
Government Alternate: Nicholas Mitchell

Saskatchewan

Government Member: Thon Phommavong
Government Alternate: Vacant
Indigenous Member: Vice Chief Joseph Tsannie

Yukon

Government Member: Heather Jirousek
Government Alternate: Amelie Janin
Indigenous Member: Corrine Porter

Environment and Climate Change Canada

Government Member: Nadine Stiller
Government Alternate: Patrick Cherneski

Parks Canada Agency

Government Member: Jonah Mitchell
Government Alternate: Laurie Wein

*denotes a change in membership from April 1, 2022
to March 2023



Photo credit: eighty one images
Big Lake, Inuvik, NWT

MRBB

Mackenzie River Basin Board

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