



Working Together to Manage our Shared Waters

2021-2024 Liard Basin Implementation Report

British Columbia-Northwest Territories Bilateral Water Management Agreement

British Columbia-Yukon Bilateral Water Management Agreement

Yukon-Northwest Territories Bilateral Water Management Agreement



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Preface

This multilateral report provides a summary of activities undertaken between April 2021 and March 2024 by British Columbia (B.C.), Yukon and the Northwest Territories (NWT) to advance the implementation of the following Mackenzie River Basin Bilateral Water Management Agreements in the Liard River Basin:

- British Columbia – Northwest Territories Bilateral Water Management Agreement (2015)
- British Columbia – Yukon Bilateral Water Management Agreement (2017)
- Yukon – Northwest Territories Bilateral Water Management Agreement (2022)

This is the first time that implementation activities are reported together, highlighting the successful effort to coordinate transboundary water collaboration.







1.0 Background

In 1997, the governments of Canada, B.C., Alberta, Saskatchewan, NWT, and Yukon (YT) signed the *Mackenzie River Basin Transboundary Waters Master Agreement* to promote cooperative water management across the Mackenzie River Basin.

The Master Agreement commits all six governments to work together towards the vision of maintaining a “healthy and diverse aquatic ecosystem for the benefit of present and future generations” (<https://www.mrbb.ca/>) and provides a framework for neighbouring provinces and territories to develop bilateral water management agreements (<https://www.mrbb.ca/bilateral-water-management-agreements>). As a way to implement the Master Agreement, Bilateral Water Management Agreements (BWMA) were signed between provinces and territories at the level of each major sub-basin.

BWMAs describe the commitments, mechanisms and framework for how jurisdictions will work together to ensure the aquatic ecosystem of the sub-basin remains healthy.

The BWMA's are guided by the following key areas of collaboration:

	<p>Ensuring adequate and sufficient water quality and quantity monitoring is undertaken;</p>
	<p>Keeping track of how aquatic life is doing;</p>
	<p>Facilitating equitable and sustainable use of shared water resources;</p>
	<p>Regularly sharing information on current and projected development and activities;</p>
	<p>Using western science and Indigenous and local knowledge in decision-making about shared waters;</p>
	<p>Understanding and responding to major changes to the aquatic ecosystem.</p>

2.0 Governance Structure and Process

2.1 Bilateral Management Committees

Each Bilateral Agreement has a Bilateral Management Committee (BMC) which oversees the work related to the implementation of their respective agreement. BMCs meet at least once each year to routinely share information and advance collaborative work. Each BMC includes:

- one member from each territorial or provincial government; and,
- members representing Indigenous governments and Indigenous organizations with traditional territories overlapping with the watershed.

BMCs also approve annual workplans to guide technical staff on the implementation activities for the agreements.

Appendix A lists members of the B.C.-Yukon and B.C.-NWT BMCs as of December 2024. Information about membership and governance of these committees can be found in the Terms of Reference for [B.C.-Yukon Bilateral Management Committee](#), and the [B.C.-NWT Bilateral Management Committee](#).

The Yukon-NWT BMC has not yet been established (see section 3.3.2 for more details).

2.2 Classification

The BWMA's adopt a Risk Informed Management (RIM) approach to manage transboundary waters. The RIM approach involves assigning transboundary waters to one of four classes of risk, for water quantity, water quality and groundwater (Figure 1). The classification considers development and use in the contributing basin as well as downstream needs. Transboundary water classification is reviewed annually by the BMCs.

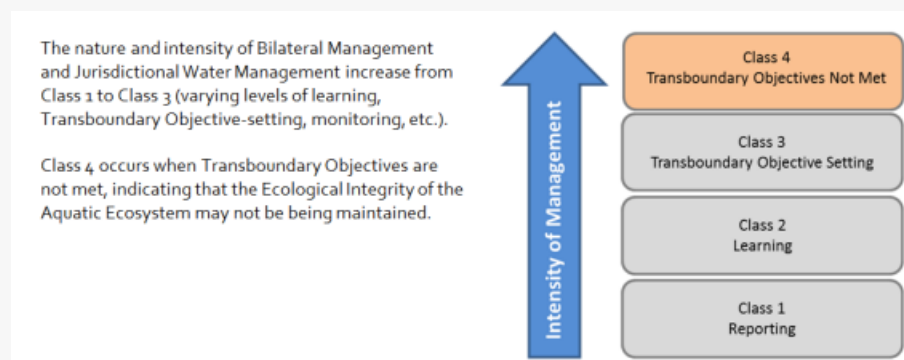


Figure 1: Risk Informed Management Approach

Transboundary waters assessed as Class 1 are considered to be at low risk. The management response required for Class 1 is to retain current water management practices and to share and report information to meet transboundary commitments. Transboundary waters set at Class 4 are considered to be at high risk, requiring active measures to address unmet transboundary water objectives (objectives must be set for any transboundary waters at Class 3 or higher).

All the transboundary waters listed in the NWT-YT agreement are classified as Class 1 for surface and groundwater.

Under the B.C.-NWT Agreement, the Petitot River and Liard River are classified as Class 2 for surface and groundwater quality and Class 1 for surface and groundwater quantity. All other transboundary waters are classified as Class 1 for surface and groundwater quality and quantity.

Under the B.C.-Yukon Agreement, the Upper Liard, La Biche and Beaver Rivers are set at Class 2 for surface water quality, and the La Biche and Beaver Rivers are also set at Class 2 for surface water quantity. All other transboundary waters are set at Class 1.

3.0 Implementation Highlights

This section presents key implementation activities that took place between April 2021 to March 2024 under each agreement. The intention moving forward is to report on implementation highlights annually.

3.1 B.C.-Yukon Bilateral Water Management Agreement

3.1.1 Reclassification of the Liard River to make space for Indigenous Knowledge

One of the commitments of the Bilateral Agreements is to classify transboundary waters based on the level of risk posed to aquatic health. The B.C.-Yukon BMC developed a revised classification system for transboundary waters in 2021 based on a framework approach that assesses both qualitative and quantitative factors rather than a set of numerical scores. This revised classification framework brings together Indigenous and western ways of knowing (Figure 2).

The revised classification framework was applied to the Upper Liard River in 2021-2022. To gather local and Indigenous perspectives, an online community survey was conducted. The Dane nan yé dāh (DDC Land Guardians) also delivered the survey door-to-door in Lower Post. Responses were received from 40 individuals. Following information gathering, a classification worksheet capturing western science and community inputs was prepared, justifying an amendment from Class 1 to Class 2 for water quality. This change requires the development of a Learning Plan. The new classification for the Upper Liard River now aligns with the classification of the Lower Liard River under the B.C.-NWT Bilateral Agreement.

Transboundary water classification for Liard River sub-Basin (BC/YT BWMA)

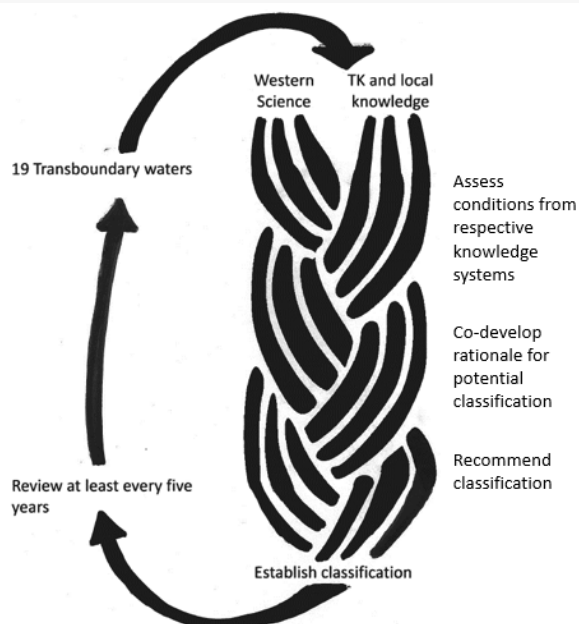


Figure 2: Conceptual diagram indicating how Traditional Knowledge (TK), local knowledge and western science are incorporated to classify transboundary waters in the Liard Basin by the Yukon- B.C. BMC.

3.2 B.C.-NWT Bilateral Water Management Agreement

3.2.1 BMC meeting and work planning

In January 2022, members of the BMC met to discuss work planning, reporting, and sharing information about monitoring and other initiatives underway in the Liard River Basin. The BMC identified the need for a facilitated workshop to assist with the development of a Learning Plan to guide learning priorities under the implementation of the agreement.

3.3 NWT-Yukon Bilateral Water Management Agreement

3.3.1 Agreement signed in 2022

On August 30, 2022, a new Bilateral Water Management Agreement was signed between the NWT and Yukon for transboundary waters in the Liard Basin. The agreement covers the drainage of four unnamed streams that flow from the Yukon into the NWT. Since there is a low level of concern based on the level of projected and current development in the shared portion of the basin, the four tributaries were classified as 1 (low risk).

3.3.2 Implementation of the NWT-Yukon BWMA

During consultation with Indigenous governments and Indigenous organizations for the Yukon-NWT Agreement (Liard), it was recommended that a multilateral approach be taken with existing BMCs for the implementation of the Agreement. This approach was recommended to limit duplication with existing BMCs and to use existing resources efficiently. Yukon and NWT have been working collaboratively with B.C. on the development of a Learning Plan for the Liard River.

3.4 Multilateral collaboration for a Liard Basin integrated approach

This section presents key activities jointly implemented by B.C., the NWT, and Yukon as part of their decision to work together at a Liard Basin level, with the aim to advance more effectively their respective agreements.

3.4.1 Developing a joint Learning Plan for the Liard River Basin

A Learning Plan is required for transboundary waters classified as Class 2 or higher. The goal of a Learning Plan is to “learn about transboundary waters to proactively address any negative trends”. This involves identifying and gathering knowledge through collaborative water research, monitoring and stewardship. A Learning Plan identifies gaps in knowledge and prioritizes activities to fill those gaps. Past BWMA implementation progress [reports](#) have outlined the work undertaken towards a Learning Plan. The details outlined below indicate the progress made towards advancing the Learning Plan during the 2021-2024 time period.

In May 2022, a meeting between Yukon-B.C. and B.C.-NWT BMC members took place to discuss potential basin-wide collaborations. At this meeting, members from both committees agreed to work together to develop a joint Learning Plan for the entire Liard River. This decision was made because the portion of the Liard River under the B.C.-Yukon agreement was recently reclassified as Class 2 whereas the portion of the Liard River under the B.C.-NWT was already classified as Class 2. Class 2 classification triggers the requirement to develop a Learning Plan. This coordinated approach reduces duplicative processes, limits engagement fatigue for all members, and is a more holistic approach that considers the whole of the Liard River system.



Image: Members of the Liard Basin Bilateral Management Committees and invited guests take a field trip to visit Marsh Lake, Yukon, as part of the meetings in May 2022.

The two BMCs adopted the [Land and Peoples Relationship Model](#) as the framework for bringing together Indigenous Knowledge and western science in the development of the Learning Plan. The model was assembled by Land Relationship Planner and Yukon First Peoples Knowledge Holder Copper Joe Jack. As described by Copper, *“The Land and Peoples Relationship Model is a collaborative knowledge-building process that respects both First Nations’ Long-Ago Peoples Way and Western knowledge. Collaborative knowledge-building is a process by which participants reach favorable conclusions through the sharing and exchange of knowledge.”* Essential elements of the process include abiding by the three laws of respect, care, share, and paying attention to the ‘no voice perspective’ by establishing a seat for water at the table.

3.4.2 Elders Circle sharing Liard Basin water knowledge

In May 2023, as the first step in the Land and Peoples Relationship model process, 15 Elders from across the Liard Basin participated in an Elders Circle in Fort Nelson, B.C. The intent of the Elders Circle was to discuss water knowledge and answer questions to help develop a Learning Plan for the Liard River watershed, which will guide future water monitoring and stewardship.

The Elders Circle was organized by the B.C.-Yukon and the B.C.-NWT BMCs and facilitated by Copper Joe Jack. This was a first step to develop an inclusive Learning Plan for the Liard River watershed that connects Indigenous watershed values, laws and knowledge systems with western science.

The knowledge and information collected as part of this event was arranged by Copper Joe Jack into a [What We Heard report](#). The What We Heard report contains direct quotes from the Elders as well as summaries of the key concerns and recommendations raised. All participating Elders have approved the report. Since the workshop, the BMCs have met to coordinate next steps, including work to synthesize western science in the basin and hosting a workshop to outline core elements for the Learning Plan.



Image: Photo taken during the Liard Basin Elders Circle, in Fort Nelson B.C.

4.0 Monitoring and Data Sharing

With support from the federal government, each province and territory monitors surface water quality and quantity, groundwater, snowpack, and aquatic life in the Liard River Basin (see map 1 for location).

4.1 Federal, provincial and territorial-led monitoring

4.1.1 Surface water quality

The list below provides a summary of some of the key long-term government-led water quality monitoring sites in the B.C.-Yukon-NWT transboundary region:

- **Liard River at Upper Crossing** led and funded by Government of Yukon and Environment and Climate Change Canada (ECCC), since 2002. In 2017 the Dane nan yé dāh (Kaska Land Guardians program with the Dena Kayeh Institute) took over monthly sampling at this station through a transfer payment agreement with Government of Yukon. This site is located at the Alaska Highway bridge near the Yukon-B.C. border and is co-located with a hydrometric station, led by the Water Survey of Canada (ECCC). As part of work to improve networks to better track climate change, a pilot project was launched in Fall 2023 to install a continuous water temperature and conductivity logger at this site.
- **Liard River above Kotaneelee River**, led and funded by the Government of the Northwest Territories (GNWT), since 1992. This site is about 10 km upstream from Fort Liard, between the confluence with the Kotaneelee to the north and the NWT-B.C. boundary to the south.

- **Liard River at Fort Liard**, led and funded by ECCC since 1998.¹ This site is located approximately 40 km downstream from the border with B.C., below the Kotaneelee River but above the Petitot River. It is co-located with a hydrometric station, led by the Water Survey of Canada (ECCC).
- **Petitot River below Highway 77**, led and funded by ECCC and B.C., since 2012. This site is located about ½ km below the bridge crossing with the B.C.-NWT boundary to the north. It is co-located with a hydrometric station, led by the Water Survey of Canada (ECCC).
- A new Canada-B.C. long-term monitoring station was established on the **Muskwa River upstream of the Highway 97 bridge** near Fort Nelson in November 2023. It is funded by the Climate Preparedness and Adaptation Strategy (CPAS), managed by B.C. and ECCC and sampled by Fort Nelson First Nation along with the Petitot Station.
- Parks Canada monitors several sites in the Nahanni National Park.

These water monitoring sites were established to characterize water quality and track changes over time. Water samples are collected throughout the year and analyzed for routine substances including nutrients (e.g., phosphorus), salts (e.g., calcium and magnesium) and metals (e.g., aluminum, arsenic and lead). To help address concerns about contaminants in the rivers, samples are also occasionally analyzed for pesticides, herbicides, Polychlorinated Biphenyls (PCBs) and hydrocarbons.²

In addition to monitoring stations on rivers, the B.C. Lake Monitoring Network also received CPAS funding to add long-term lake monitoring stations on Muncho Lake and Summit Lake beginning in the spring of 2024. Stations are sampled twice per year in the spring and late summer/fall for chlorophyll a, nutrients, metals, plankton, and physical profile parameters.

Water quality data are available online at: [Mackenzie DataStream](#) and [Water Quality Monitoring \(ECCC\)](#)

4.1.2 Water quantity monitoring

- Water Survey of Canada operates eight hydrometric stations in the Yukon-portion of Liard River Basin, some of them are co-located with water quality monitoring sites. The Yukon Government operates an additional station in the Yukon portion of the Basin.
- Water Survey of Canada also operates ten hydrometric stations in the B.C. portion of the Liard River Basin, several of which are co-located with water quality monitoring sites. Of note in 2024, B.C. Energy Regulator (BCER) established a collaborative long-term hydrometric monitoring station on Beaver Creek in partnership with Prophet River First Nation through funding from the B.C. Oil and Gas Research and Innovation Society. Beaver Creek is a small watershed and tributary to the Minaker River.
- In the NWT, Water Survey of Canada operates nine hydrometric stations. Of the nine sites, two are located directly on the Liard River, while seven are located on tributaries. Most of the sites are federally funded with the exception of the Liard River at Fort Liard, which is jointly funded by the GNWT, and two sites, 10ED010 Grainger River at Canadian Zinc Road and 10EC002 Prairie Creek at Cadillac Mine, which are funded by Prairie Creek Mine.

¹ The complete monitoring period for this site includes 1960-1974 and 1998-present.

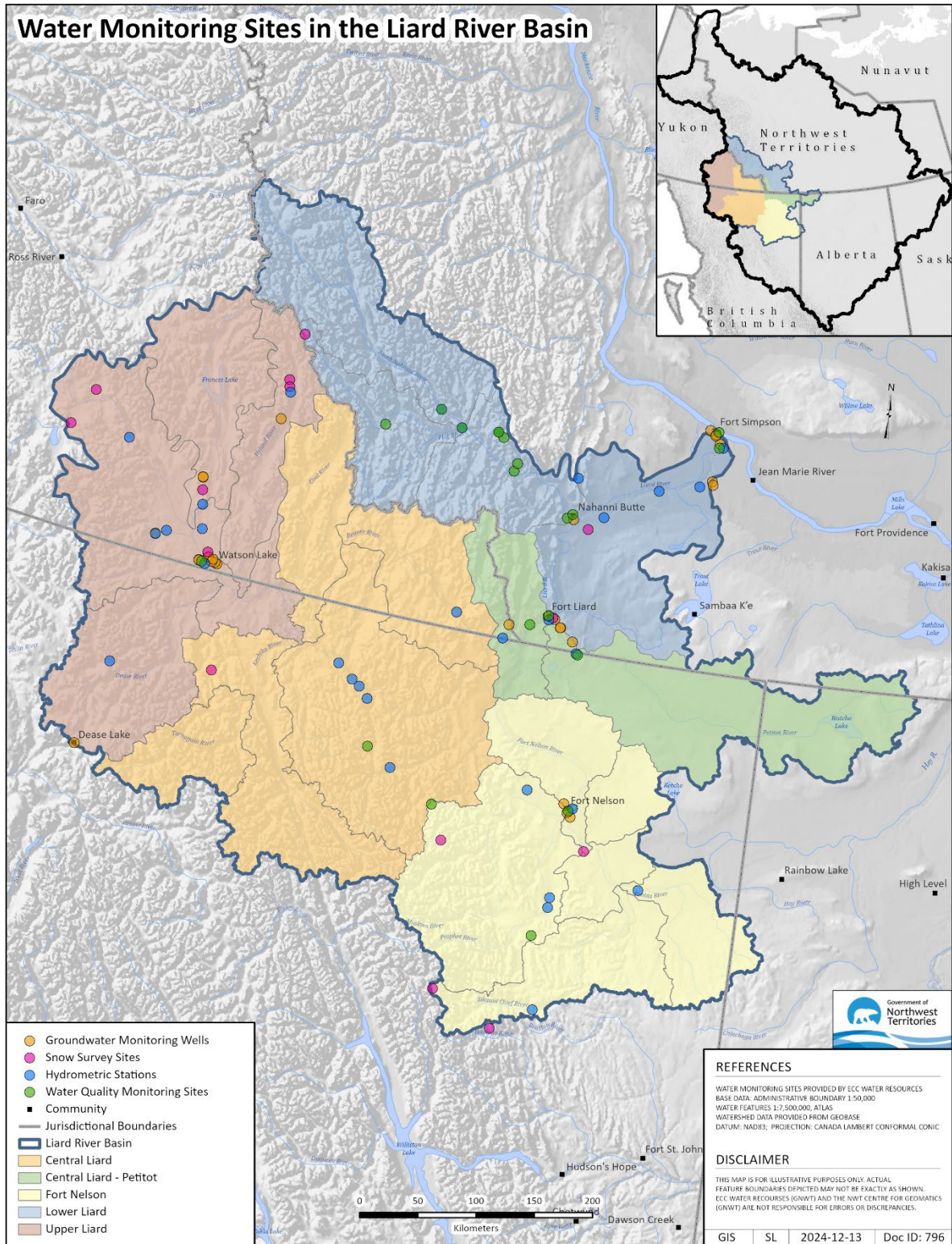
² Hydrocarbons are both naturally occurring and as a result of human activities, while pesticides, herbicides and PCBs are only human-made.

- Water quantity data collected as part of the Water Survey of Canada are available online at: [Real-Time Hydrometric Data \(ECCC\)](#).

4.1.3 Snowpack monitoring

Snow survey data are collected at various locations in the Liard Basin to inform risk indicators for flood, drought and wildfire and to understand potential snowmelt contributions to spring freshet flows. See below for a summary of snow survey stations by jurisdiction:

- As part of the long-term snow monitoring program, the GNWT department of Environment and Climate Change (ECC) conducts on-the-ground snow surveys to inform flood monitoring, wildfire prediction, year-to-year variability and research. Snow water equivalent data are particularly important for assessing potential snowmelt contributions to spring flows. GNWT-ECC monitors two snow survey sites in the Liard Basin.
- B.C. monitors snow accumulation at five sites in the Liard Basin. Three manual snow survey sites are located at Fort Nelson Airport (elevation 380 m), Summit Lake (elevation 1,280 m) and Mount Stearns (elevation 1,505 m). Additionally, there are two automated snow weather stations located at Deadwood River (elevation 1,250 m) and Sikanni Lake (1,387 m). Two new stations are targeted for Summer 2025 in the Toad River and Prophet River drainages. For more information and current snow survey reports, visit [Snow Survey Data](#) and the [Snow Survey Stations Interactive Map](#).
- The Government of Yukon operates six [manual snow courses](#) in the Yukon portion of the Liard Basin and one automated snow weather station with a snow pillow, snow depth sensor, and total precipitation gauge co-located with the Hyland River snow course. Snow depth and snow water equivalent data are published three times a year after March 1, April 1 and May 1 on [Yukon.ca](#). All historical snow course data are available through the [Yukon open data portal](#) while automated data are available on request.



Map 1. Liard River Subbasins and Monitoring Stations

4.1.4 Groundwater monitoring

- The Yukon actively monitors five wells in the Liard Basin as part of the Yukon Observation Well Network. Two of these wells are located at the Upper Liard solid waste disposal facility, and one is at the Watson Lake solid waste disposal facility. In 2022, the government drilled two additional monitoring wells to support an aquifer mapping project in Watson Lake, and these wells will continue to be monitored.

In 2022, the Government of Yukon partnered with Yukon University, the Geological Survey of Canada, the Village of Watson Lake, the Liard First Nation, and the Dena Kayeh Institute to map aquifers beneath Watson Lake. This project identified two aquifers. The resulting reports will be available on Yukon.ca once published.

- In B.C., four monitoring wells in the Liard Basin are part of the Provincial Groundwater Observation Well Network. Three of these, near Fort Nelson, have collected data on various aquifers since 2019 and 2020, including one within the Fort Nelson First Nation. These wells were installed as part of the Liard and Petitot Sub Basins Transboundary Groundwater Resources Assessment Project, which supports the Bilateral Water Management Agreement between B.C. and the Northwest Territories (NWT) on Groundwater. A fourth well, located in Dease Lake at the edge of the basin, has monitored pollution since its establishment in 1973. Real-time data can be accessed from the [Groundwater Level Data Interactive Map](#).
- The NWT has clusters of shallow groundwater monitoring wells in solid waste and sewage lagoon facilities in Fort Liard and Fort Simpson, as well as at contaminated sites around Checkpoint near the confluence of NWT Highways 1 and 4.

Two production wells supply Fort Liard and Nahanni Butte communities with drinking water.

In 2018, the NWT initiated a groundwater study near Fort Liard, which continued in 2021 and 2024. This work brings together the GNWT, the University of Guelph, the University of Calgary, McMaster University, and the Acho Dene Koe First Nation. The objectives of the project are to characterize the fresh groundwater zone, determine the baseline conditions of the groundwater quality, and evaluate the vulnerability of the local and basin-scale aquifers from current and future oil and gas development, as well as climate variability.

Key field events that have taken place include a rock outcrop reconnaissance survey on the Petitot River (2022), drilling of six boreholes and three sites and the installation of monitoring systems and sensors (2023), and groundwater monitoring (2023). Project's findings were presented at the NWT Water Stewardship Implementation workshop in October 2023 and October 2024. Annual newsletters are also being shared with the community and other interested parties.

4.1.5 Biomonitoring

- Biomonitoring stream assessments that sample benthic invertebrates using Canadian Aquatic Biomonitoring Network (CABIN) sampling protocols are completed by the B.C. Ministry of Environment and Climate Change Strategy (B.C. ENV) and ECCC in the Liard River Basin. The Dena Kayeh Institute and the Kaska Dena, the Fort Nelson First Nation, and the Tahltan Central

Government are contracted by B.C. ENV to sample and/or assist with sampling within their respective territories of the Liard River Basin.

- Biomonitoring is also completed at the Canada-B.C. stations (i.e., the Petitot and eventually the Muskwa) and the Canada-Yukon station (Liard at Upper Crossing) every 3 years with the objective of long-term benthic monitoring. ECCC does this sampling with assistance from B.C., Yukon and First Nation water quality samplers.

4.2 Indigenous-led water monitoring activities in the Liard River Basin

The BMCs recognize the important role of Indigenous partners and Indigenous knowledge systems in the supporting the implementation of Bilateral Agreements. Many implementation activities are being advanced through Indigenous leadership.

4.2.1 Fort Nelson First Nation Guardians

Fort Nelson First Nation has been leading water quality monitoring in their territory to understand impacts to small streams from industry. Data is available online through DataStream: [Fort Nelson First Nation Water Quality Monitoring \(datastream.org\)](https://datastream.org). Fort Nelson First Nation has also developed a Water Strategy, which includes a vision for water for the water in their traditional territory. Check out their website for more information: <https://fortnelsonfirstnation.org/lands/our-rivers/>. In 2019, Fort Nelson First Nation produced a Watersheds Report Card, which includes an assessment into various stressors on the watersheds within their traditional territory. This publication is available on their website: <https://fortnelsonfirstnation.org/lands/our-publications/>.

4.2.2 Dehcho First Nations Aboriginal Aquatics Resource Ocean Management (AAROM) program

The Government of the NWT's Department of Environment and Climate Change plays a key role in supporting communities across the NWT in the development and implementation of community-based monitoring programs. These programs empower local communities to take an active role in environmental stewardship and data collection. Since 2013, the Dehcho First Nations, through its Aboriginal Aquatic Resources and Oceans Management (AAROM) program, has led comprehensive monitoring efforts Dehcho region as part of the NWT-wide Community Based Water Quality Monitoring Program. This initiative includes collaboration with local monitors from various Indigenous organizations, fostering community leadership in water stewardship and environmental protection. For more information: [NWT Water Stewardship](#) & [Dehcho AAROM: Indigenous-led Monitoring and Stewardship - Indigenous Climate Monitoring Toolkit](#).

4.2.3 Dane Nan Yé Dāh Kaska Land Guardian Network

The Dena Kayeh Institute coordinates a network of land guardians called the Dane Nan Yé Dāh Land Guardian Network. Guardians are active in various water projects including installing climate monitoring stations, creek sampling in placer mining areas, and monitoring water temperature at the Liard hot springs. Learn more in their December 2023 newsletter here: <https://denakayeh.com/dki-newsletter-vol02-iss01-dec2023/>. In August of 2024, the Land Guardians worked with Government of Yukon's Water Resources Branch to pilot a new lake monitoring program.

4.2.4 Acho Dene Koe (ADK) First Nation

Through the NWT Cumulative Impact Monitoring Program (CIMP), ADK is working to monitor water in their traditional territory with a project ongoing from 2023-2026. The goal of this project is to document present and historic conditions of important waterbodies within ADK territory. The work will aim to increase community capacity in water monitoring to enable the development of a continuous monitoring program.

4.2.5 B.C.-Fort Nelson First Nation (FNFN) knowledge building

B.C. has been investing in building relationships and undertaking focused work with FNFN to pull together datasets and conduct preliminary analysis to help characterize conditions of watershed values in the B.C. portion of the Liard Basin. To establish a transparent and common understanding of presently available water data and knowledge related to conditions of the Liard River basin, a Technical Working Group (TWG) collated, mapped, and summarized all accessible data from the Province of B.C. and Fort Nelson First Nation (FNFN). All known groundwater, surface water and snow monitoring programs, datasets and reports including, but not limited to, quality, quantity, biomonitoring, and Indigenous Knowledge was collected. A summary of each knowledge dataset provided an overview of the data, assumptions and limitations, why the data was collected, and where the data can be accessed.

Informed by this comprehensive data summary, B.C. and FNFN determined an appropriate next step would be to draw from the knowledge systems to address the current state and trends of a priority watershed within the Liard River basin. It was agreed to undertake an analysis of the Sahtaneh River watershed. At the time of this report, the TWG was working on developing a framework to assess how and when information will need to be collected, supporting next steps for a What We Know Project with an initial focus on the Sahtaneh River watershed.

5.0 Connection to the Broader Mackenzie River Basin

5.1 State of the Aquatic Ecosystem Report

[The Mackenzie River Basin Board State of the Aquatic Ecosystem Report](#) (SOAER) documents conditions and changes within the Mackenzie River Basin to inform the public about the aquatic ecosystem health, and to support decision-making. The 2021 SOAER includes a section dedicated to the state of the aquatic health of the Liard River sub-basin. The report outlines that “Changes to aquatic ecosystem health in the Liard River Sub-basin were minor and localized, as there is little land disturbance in the sub-basin. Moderate localized changes were observed in water quantity, likely related to climate change, and in community health and wellbeing, as a result of industrial development.” More information specific to water quantity, quality, habitat and species, and health and wellbeing can be found on the [SOAER website](#).

5.2 Water quality trends assessment

Development of a status and trends report for water quality at key sites throughout the Mackenzie River Basin is underway, led by the Mackenzie River Basin Board Water Quality Task Team. The report will include water quality data for the Liard River at Upper Crossing and at Fort Liard. It will identify trends and highlight substances (e.g., metals, nutrients, etc.) that may need to be explored further. The report

is expected to be completed by the fall of 2025 and will contribute to the broader Mackenzie River Basin SOAER.

6.0 Conclusion and Next Steps

The B.C.-NWT and B.C.-Yukon BMCs have joined efforts to implement a new collaborative approach for working together multilaterally. This approach connects representatives of five different Indigenous nations, two territories and one province to learn and share about the Liard River Basin using multiple knowledge systems. While a multilateral approach requires additional coordination, it also presents several worthwhile opportunities, including:

- Pooling financial and human resources to undertake large projects such as the development of a comprehensive Liard Learning Plan;
- Strengthening relationships and communication channels across multiple governments to help align water management visions and actions; and,
- Regularly engaging members across multiple governments and organizations to ensure the right people are involved in the right conversations.

The BMCs will continue to work together towards the completion of the Learning Plan, improve how they work together, and move towards a collective and holistic understanding of risks and opportunities in the watershed.

For questions about this report or comments on transboundary water management in the Liard River Basin, please contact:

- Government of Yukon: waterresources@yukon.ca
- Government of British Columbia: livingwatersmart@gov.bc.ca
- Government of the Northwest Territories: nwtwaterstrategy@gov.nt.ca

Appendix A: Lists of the BMC members

British Columbia-Yukon Bilateral Management Committee	
Government or organization	Committee member
Yukon Indigenous Representative	Frank Kotchea, Acho Dene Koe First Nation
British Columbia Indigenous Representative	Corrine Porter, Executive Director, Dena Kayeh Institute (representing Dease River First Nation, Daylu Dena Council and Kwadacha Nation) <i>Alternate: Vanessa Law, Manager of Lands and Resources, Daylu Dena Council</i>
Yukon Indigenous Representative	Stefan Howarth, Natural Resource Manager, Teslin Tlingit Council (Observer status)
Government of British Columbia	Lana Miller, Director of Water Sustainability, Watershed Stewardship and Security Branch, Ministry of Water, Land and Resource Stewardship
Government of Yukon	Brendan Mulligan, Senior Scientist-Groundwater, Water Resources Branch, Department of Environment
British Columbia Indigenous Representative	<i>Currently vacant</i>
Yukon Indigenous Representative	<i>Currently vacant</i>

British Columbia- Northwest Territories Bilateral Management Committee	
Government or organization	Committee member
Northwest Territories Indigenous Representative	Frank Kotchea, Acho Dene Koe First Nation, representing the NWT Water Stewardship Strategy Indigenous Steering Committee
British Columbia Indigenous Representative	<i>Currently vacant</i>
Government of the Northwest Territories	Julian Kanigan, Assistant Deputy Minister Department of Environment and Climate Change
Government of British Columbia	Lana Miller, Director of Water Sustainability, Watershed Stewardship and Security Branch, Ministry of Water, Land and Resource Stewardship

Appendix B: Where to access water data for the Liard

	Water Quality	Groundwater	Hydrology	Other
Basin-wide	Mackenzie DataStream		ECCC Real-Time Hydrometric Data	
British Columbia	<p>B.C. Water Portal for Water Quality and Water Quality Monitoring</p> <p>B.C. Lake Monitoring Program</p> <p>B.C. Lake Monitoring Portal</p> <p>Canada-B.C. Water Quality Monitoring Program</p> <ul style="list-style-type: none"> Federal Open Data <p>Water Quality Guidelines and Objectives</p> <p>EMS Surface Water Quality Monitoring Sites</p> <p>EMS Open Data Results</p>	<p>B.C. Provincial Groundwater Observation Well Network</p> <ul style="list-style-type: none"> Groundwater Levels Open Data <p>B.C. Groundwater Wells and Aquifers (GWELLS)</p> <p>B.C. Groundwater Review Assistant</p> <p>B.C. Aquifer Stress Tool</p> <p>B.C. Groundwater Environmental Reporting Indicator</p>	<p>B.C. Provincial Hydrology Program</p> <p>Provincial Snow Survey Program</p> <p>Open Snow Station Data (automated)</p> <p>Open Snow Station Data (manual)</p> <p>Northeast Water Tool</p>	<p>Ecological Reports Catalogue (EcoCat)</p> <p>B.C. Biomonitoring</p> <p>B.C. Climate Related Monitoring Program</p> <p>B.C. Environmental Assessment Office</p>
Yukon	<p>Canada-Yukon Water Quality Monitoring Program</p> <ul style="list-style-type: none"> Federal Open Data 	Yukon Water Well Registry	<p>Find out water levels in Yukon lakes and rivers Government of Yukon</p> <p>Yukon Snow Bulletin and Water Supply Forecast</p>	Yukon Water Data Catalogue
Northwest Territories	<p>ECCC Water monitoring</p> <p>NWT Community-Based Monitoring</p>		<p>ECCC Real-Time Hydrometric Data</p> <p>GNWT Water Monitoring Bulletin</p> <p>GNWT Snow Survey Bulletin</p>	