



**British Columbia  
Ministry of Environment and Climate Change Strategy**

**Agency Report to the  
Mackenzie River Basin Board**

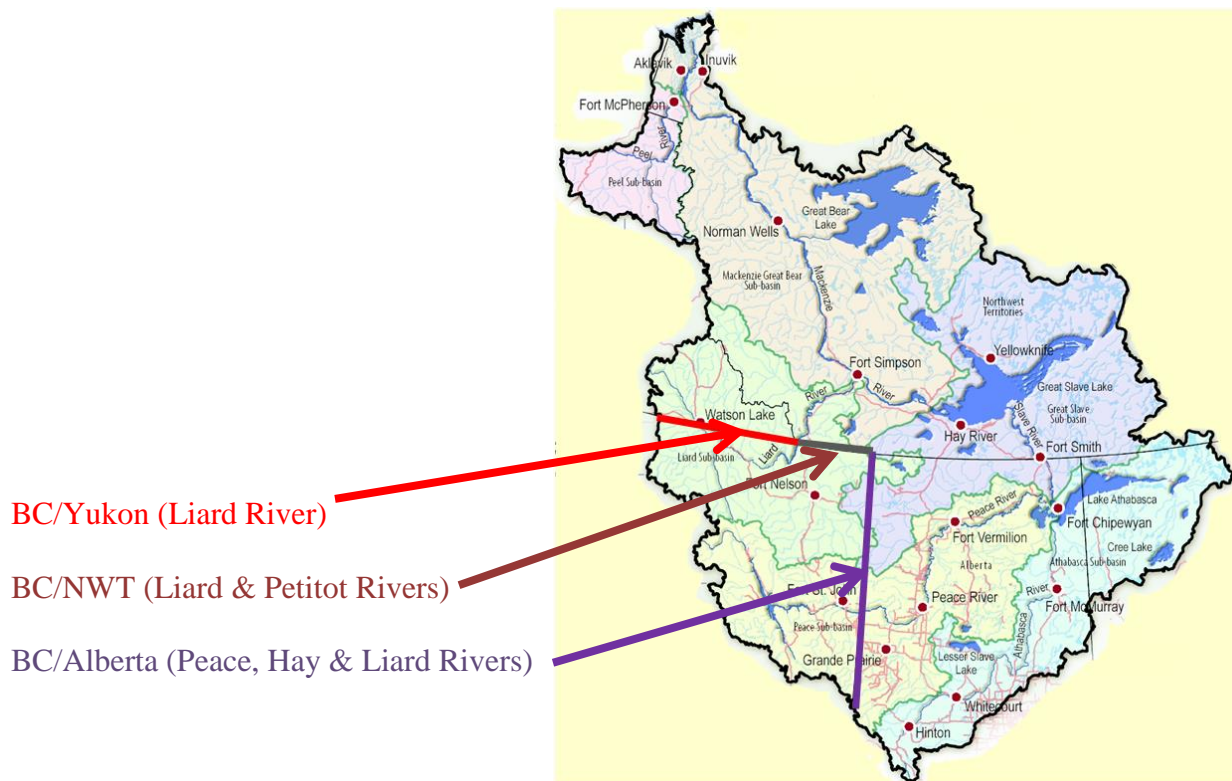
**Meeting #62 of the  
Mackenzie River Basin Board  
December 4-5, 2019  
Edmonton, Alberta**

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# 1 Bilateral Water Management Agreements

The *Mackenzie River Basin Transboundary Waters Master Agreement* provides for neighbouring jurisdictions to negotiate Bilateral Water Management Agreements (BWMA) to address shared surface water quantity, quality and groundwater. Under the Master Agreement, British Columbia is required to negotiate three such agreements with the Northwest Territories, Yukon and Alberta.



## British Columbia/Northwest Territories

British Columbia and the Northwest Territories signed their BWMA in October 2015. The Agreement is available on the MRBB website at: <http://www.mrbb.ca/information/120/index.html>

The British Columbia/Northwest Territories BWMA applies to all transboundary waters shared between British Columbia and the Northwest Territories in the Mackenzie River Basin, primarily the Liard River Watershed. On August 31, 2017 the British Columbia government approved implementation of the BC/NWT BWMA through an Order in Council.

Since then, British Columbia and the Northwest Territories have focused on advancing implementation of the BWMA. The Parties have established a Bilateral Management Committee (BMC) to administer the Agreement, including Indigenous members from Fort Nelson First Nation (BC) and the Aboriginal Steering Committee (NWT), and will also be establishing technical committees to support implementation of the Agreement. The inaugural BMC meeting took place in April, 2019. Work plan priorities include finalizing the Terms of Reference for the

BMC, identifying knowledge gaps for the Petitot River, establishing efficient methods for sharing information across jurisdictions and organizations, and establishing major project notification procedures.

As part of implementation over 2019, the Fort Nelson First Nation (FNFN), British Columbia and the Northwest Territories have coordinated efforts to move forward on establishing new groundwater monitoring wells on both sides of the border. The wells will contribute to improving understanding of the shared groundwater in the Liard Basin. The Province also supported CABIN training for FNFN staff over the summer.

### **British Columbia/Yukon**

British Columbia and the Yukon completed signing of their BWMA on March 30, 2017. The Agreement is available on the MRBB website at:  
<http://www.mrbb.ca/information/126/index.html>

On August 31, 2017 the British Columbia government approved implementation of the BC/Yukon BWMA through an Order in Council. The British Columbia/Yukon BWMA applies to all transboundary waters shared between British Columbia and Yukon in the Mackenzie River Basin, primarily the Liard River Watershed. Transboundary waters shared between the jurisdictions outside the Mackenzie River Basin, such as the headwaters of the Yukon River, are not included in the BWMA.

Implementation of the British Columbia and the Yukon Territories BWMA over 2019 has focused on establishing a bilateral management committee (BMC). Two BMC meetings were held in 2019: the first in June by teleconference, and the second in October. The BMC currently includes Indigenous Members from Kaska, Acho Dene Koe, and Tahltan Nations. Information sharing featured prominently at the BMC meetings. The BMC also undertook collaborative work planning was undertaken to identify priorities for the upcoming year.

### **British Columbia/Alberta**

Alberta and British Columbia negotiations are ongoing and the Agreement is near completion. The British Columbia/Alberta BWMA will apply to all transboundary waters shared between British Columbia and Alberta in the Mackenzie River Basin, with a significant focus on the Peace River.

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## **2 Water-Related Legislation / Policy / Regulations / Planning**

### ***Water Sustainability Act Implementation Continues***

Implementation of the 2016 *Water Sustainability Act* (WSA) continues. Focus in 2019 is on transitioning groundwater users into the water licensing system, updating operational policies to align with the new legislation, developing regulations related to enabling provisions under the WSA (e.g. water objectives, water sustainability plans and governance). The First Nations Fisheries Council was funded to facilitate an Indigenous working group to provide advice on ways government could improve engagement with Indigenous peoples on WSA related policy and regulation development work.

For more information about the WSA and regulations, visit the [Water Sustainability Act](#), the [WSA public engagement and blog](#) and [Water Licensing and Rights](#) web pages.

### ***New Legislation to Recognize Indigenous Rights in BC***

Continuing the Province's commitments to advance reconciliation and adopt and implement the UN Declaration on the Rights of Indigenous Peoples, BC passed new legislation to recognize Indigenous human rights on November 26, 2019. The legislation is called the *Declaration on the Rights of Indigenous Peoples Act* and is the foundational framework for reconciliation in BC. The legislation requires the development of an action plan to meet the objectives of the UN Declaration, annual public reporting on progress, discretion for new decision-making agreements in between the Province and Indigenous governments where decisions directly affect Indigenous peoples, and recognize additional forms of Indigenous governments in agreement-making, such as multiple Nations working together as a collective, or hereditary governments.

### ***Nicola Watershed Governance Project***

British Columbia continues work to pilot some of the new provisions of the *Water Sustainability Act*. The Nicola Watershed Governance Project Memorandum of Understanding (MOU) between the Province and five Nicola First Nations was signed on March 23, 2018. The MOU aligns with the Province's commitments to reconciliation.

The Nicola Watershed Governance Project aims to develop a co-governance model for water resources with a goal of sustainable management and improved health of the Nicola watershed. The project is an opportunity to test new *Water Sustainability Act* tools, address environmental, economic and social risks and resiliency, build relationships, capacity and knowledge, and collaboratively manage the watershed.

Since the signing of the MOU, the BC government and the Nicola First Nations have established joint decision making and operational working groups focusing on collaborative work planning and broad stakeholder and community engagement, watershed restoration projects, watershed planning, and exploring co-governance options.

Work accomplished over the past year includes initiating research on Indigenous laws and legal principles led by the University of Victoria Indigenous Laws Research Unit, a broad public workshop, completion of a watershed characterization study, and hosting a Water Governance Roundtable that brought together Indigenous and water leaders, researchers and environmental organizations.

## Major Wildlife Management and Habitat Conservation Projects

**Together for Wildlife:** The Province has recently released a strategy: [Together for Wildlife: A Proposed Pathways for Improving Wildlife Management and Habitat Conservation in BC](#), that outlines 5 Goals (and 23 actions) that include reviewing current practices as well as regulations and legislation in order to improve wildlife stewardship across the province. The strategy has been reviewed by the First Nations' Wildlife Forum and Goal 5 focuses on advancing reconciliation. The other goals are around shared priorities, data and information, delivering stewardship and accountability and transparency. Additional engagement and consultation is to come. More information about the initiative here: <https://engage.gov.bc.ca/wildlifeandhabitat/>

**Caribou Recovery Program:** Caribou are in decline in BC – over the last century, population of the province's 54 herds has dwindled from 40,000 to less than 19,000, and the caribou population continues to face challenges (climate change, increased access, habitat changes). The federal government has initiated conservation efforts under its *Species at Risk Act* to address the issue, and the Caribou Recovery Program will develop long-term, comprehensive, science-based solutions to the recovery of caribou.

In November 2019, the Province announced the formation of a Leaders' Table on Caribou Recovery. The Leaders' Table, comprising Chiefs of the Saluteau and West Moberly First Nations, CEOs and executives of forestry, mining and oil and gas industries, local government representatives, and deputy ministers from the governments of Canada and BC, will build on work previously initiated by the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. The Table's priority will be to discuss next steps to implement the Intergovernmental Partnership Agreement that was negotiated in response to the threat to the caribou identified under the federal *Species at Risk Act* and review potential approaches to mitigate natural resource and land use impacts of the Agreement, while advancing caribou protection.

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### **3 Science, Monitoring and Information**

#### **Groundwater Science Program**

BC's Groundwater Science Program exists to continuously improve the level of scientific knowledge on provincial groundwater, aquifers and the interactions between surface water and groundwater in order to support the sustainable management of groundwater. Science and research is often conducted collaboratively with leading experts, stakeholders, and, increasingly in partnership with local communities and Indigenous groups. These activities support the implementation of the *Water Sustainability Act* and Groundwater Protection Regulation.

The following key projects are underway in 2019/20:

- Identifying Drought Susceptible and Drought Resilient Aquifer-Stream Systems in British Columbia (in collaboration with Simon Fraser University, Canadian Mountain Network, Okanagan Basin Water Board, Okanagan Nation Alliance)
- A Hydroecologic Assessment of Hydraulic Connectivity (in collaboration with Simon Fraser University)
- Assessing Opportunities for Aquifer Storage and Recovery (ASR) systems in BC
- Year 2 of Stream depletion and lag time study (in collaboration with the University of Victoria)
- Year 2 of Mapping and mitigation of artesian risk (in collaboration with Simon Fraser University)
- Further development of the Aquifer Dashboard/Summary Page and updating aquifer factsheets
- Ongoing expansion of provincial groundwater observation wells monitoring network

#### **The Northeast Regional Strategic Environmental Assessment**

The Northeast Regional Strategic Environmental Assessment is a collaborative approach between seven Treaty 8 First Nations and the Province to assess the cumulative effects of natural resource development activities on Treaty 8 Rights and to develop joint management recommendations.

In 2018, an agreement was signed between the Province and the seven Treaty 8 Nations to renew their commitment to work together on the Regional Strategic Environmental Assessment. The RSEA Water Working Group is focused on completing an assessment of the current condition of watersheds (surface and groundwater) within the study area (approximately, Northeast BC) as a means to assess aquatic ecosystem health, as well as opportunities to understand the state and trends of traditional uses and the ability for meaningful practice of Treaty Rights.



## **Northeast Water Strategy**

The Northeast Water Strategy was first released in 2015 and is a proactive, long-term approach for the sustainable use and management of water resources in Northeast BC. The strategy recognizes that water is our most valuable resource, necessary for all life to exist, for communities to be healthy and for our economy to thrive.

The Northeast Water Strategy recently published a Surface Water Quality Data Summary for Northeast British Columbia. The Summary Report began with a 2016 project to inventory the available water quality data in the 69 NEWS watersheds and identify gaps to inform future monitoring opportunities in Northeast BC. This was followed by a progress report in 2017.

The final water quality summary report is available online at:

[https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/northeast-water-strategy/news\\_ne\\_wq\\_summary\\_2018.pdf](https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/northeast-water-strategy/news_ne_wq_summary_2018.pdf)

## **Canadian Aquatic Biomonitoring Network in BC**

The Province has worked closely with Environment and Climate Change Canada (ECCC) over the past 15 – 20 years to promote the nationally standardized Canadian Aquatic Biomonitoring Network (CABIN) program across BC, which uses benthic invertebrates as indicators of ecological condition. CABIN uses data from a wide range of reference sites (i.e., minimally affected by human activities) to build predictive models that can be used to evaluate the condition of test sites (i.e., where there are concerns about the aquatic ecosystem). The differences between the invertebrate communities at the test site and the “healthy” reference sites provides an indication of the extent of effects to aquatic biota.

In Northeast BC, the Province and ECCC completed intensive sampling to characterize streams and develop CABIN models for watersheds of interest to the MRBB. A CABIN model for the Fort Nelson/Liard/Petitot was updated in 2018 using data from approximately 120 reference sites. In addition, a new CABIN model for the Peace River is under development using data from approximately 110 reference sites and should be available in January 2020. Both models will provide an effective tool to monitor and assess aquatic ecosystem health within the BC portion of the Mackenzie River Basin.

## **Independent Scientific Review of Hydraulic Fracturing in British Columbia – Report Response**

In 2018, the provincial government commissioned an independent Scientific Review of Hydraulic Fracturing (SRHF) in British Columbia<sup>1</sup> to understand the role of hydraulic fracturing as it relates to induced seismicity, fugitive emissions and its impacts on water quantity and quality. The Review Panel was tasked to answer the following two questions:

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<sup>1</sup> The report is available here: [https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-gas-oil/responsible-oil-gas-development/scientific\\_hydraulic\\_fracturing\\_review\\_panel\\_final\\_report.pdf](https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-gas-oil/responsible-oil-gas-development/scientific_hydraulic_fracturing_review_panel_final_report.pdf)

1. Does BC's regulatory framework adequately manage for potential risks or impacts to safety and the environment that may result from the practice of hydraulic fracturing?
2. How could BC's regulatory framework be improved to better manage safety risks, risk of induced seismicity, and potential impacts to water?

The three-member independent scientific panel submitted its final report, *Scientific Review of Hydraulic Fracturing in British Columbia*, to Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources, on February 20, 2019.

In response, the Province established a cross-government working group to conduct a thorough review of the report and its recommendations in reviewing and improving the existing regulatory framework governing hydraulic fracturing. In June 2019, the Government identified a number of early actions in response to the report (IB June 27, 2019)<sup>2</sup>, including installing new hydrometric monitoring stations in collaboration with First Nations communities, installing new groundwater observation wells near Fort Nelson, completing the mapping of more than 55 aquifers, implementing outreach and education for land and dam owners in the northeast region, and initiating a project to map zones that are likely to experience greater ground motion from seismic events. In December 2019, the working group will provide the minister of Energy, Mines and Petroleum Resources with a status update and a detailed long-term plan that identifies actions government will take to effectively and fully address the independent panel's recommendations.

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<sup>2</sup> [Information Bulletin from June 27, 2019 available at: https://news.gov.bc.ca/releases/2019EMPR0027-001344](https://news.gov.bc.ca/releases/2019EMPR0027-001344)

## 4 Major Projects

Since the last agency report in November 2018, there are currently ten major projects in the Mackenzie River Basin listed by the BC Environmental Assessment Office as being in the scoping phase. A total of 48 projects are listed as being certified / complete. Two newly listed projects are the Wonowon Landfill and Frontier (Energy) Project. One project, the Sukunka Coal Mine Project, remains under review.

TITLE	CATEGORY and LOCATION	PHASE	COMMENTS
Red Willow Wind Project	Energy Approximately 40 km southeast of the District of Tumbler Ridge	Scoping	Red Willow Wind Limited Partnership is proposing to construct and operate a 200 megawatt wind energy facility in the Peace River region in BC. The Project is located southeast of the District of Tumbler Ridge and within the traditional territory of Treaty 8 First Nations.
Aley Mine Project	Mining 140 km N of Mackenzie, 118 km NE of Hudson's Hope	Scoping	10,000 tonne per day open-pit niobium mine situated approximately 20 km northeast of the head of the Ospika Arm of Williston Reservoir.
Pacific Northern Gas Looping Project	Energy Summit Lake to Kitimat	Scoping	The Pacific Northern Gas Looping Project would supply natural gas, via a 525 km long pipeline, from Summit Lake to proposed liquefied natural gas (LNG) export facilities in Kitimat, BC. It would have an initial capacity of 600 million standard cubic feet per day
Taylor Wind Project	Energy 10 km south of the District of Taylor	Scoping	Taylor Wind Project would be located on private land and have a nominal power production capacity of up to 400 MW.
Sundance Wind Project	Energy 20km north of Tumbler Ridge	Scoping	The Sundance Wind Project would have a nominal power production capacity of up to 250 MW.
Carbon Creek Coal Mine Project	Mining Approximately 40 km west of Hudson's Hope	Scoping	Cardero Coal Ltd. proposes to develop a new open-pit surface and underground metallurgical coal mine with an average annual production rate of 2.9 million metric tonnes of clean coal.
Gething Coal Project	Mining 25 km Northwest of Hudson Hope	Scoping	Proposed new underground coal mine with an onsite coal preparation plant. The production rate is 2 million tonnes per year with a mine life estimated at 40 years.
Hackney Hills Wind Project	Energy 100 km West of Fort St. John	Scoping	Aeolis Wind Power Corporation (the proponent) proposes to develop a wind farm east of Fort St. John. The wind park has an estimated generating capacity of 1000 MW.
Sukunka Coal Mine Project	Mining 55km south of Chetwynd 40km west of Tumbler Ridge	Under Review	Xstrata Coal Canada (Proponent) proposes to develop and operate an integrated surface and underground mining operation and coal handling and processing plant to produce hard coking coal for export to overseas steel manufacturers. The Sukunka Project will initially produce 1.5 to 2.5 million tons per year (Mt/y) of washed coal, increasing to approximately 6 Mt/y when underground mining begins. The mine life is expected to exceed 20 years.
Wonowon Landfill	Waste Disposal 9 kms southeast of Wonowon	Scoping	Secure Energy services Inc. proposes to construct and operate the Wonowon Landfill Project, which is anticipated to handle approximately 200,000 tonnes of waste annually, over a 25 - 75

			year lifespan, dependent on disposal services demand.
Frontier Project	Energy 36 kms west of Chetwynd	Not shown	Enbridge proposes to construct a natural gas liquids straddle plant and 130 to 170 kilometre (km) pipeline in northeastern British Columbia. The straddle plant and initiating pump station are located approximately 36 km west of Chetwynd, and the pipeline is proposed to span from the straddle plant to Taylor. The Frontier Project is also proposing a 15 to 45 km long electrical transmission line with associated substation at the straddle plant.

### Important Links:

- BC Environmental Assessment Office: <http://www.eao.gov.bc.ca/>
- Frequently asked questions: <http://www.eao.gov.bc.ca/FAQ.html>
- EAO Fairness and Service Code: [http://www.eao.gov.bc.ca/pdf/EAO\\_Service\\_Code\\_20090115.pdf](http://www.eao.gov.bc.ca/pdf/EAO_Service_Code_20090115.pdf)
- Project Information Centre (e-Registry or “EPIC”), including links to projects: [http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic\\_home.html](http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_home.html)
- List of projects: <https://projects.eao.gov.bc.ca/>
- Map of projects: <http://maps.gov.bc.ca/ess/sv/epic/>

### BC Hydro Site “C” Clean Energy Project



Source: [http://www.bchydro.com/energy-in-bc/projects/site\\_c.html](http://www.bchydro.com/energy-in-bc/projects/site_c.html)

Site C will be the third dam and hydroelectric generating station on the Peace River in northeast BC. The project will provide 1,100 megawatts of capacity and about 5,100 gigawatt hours of energy each year to the Province’s integrated electricity system.

In December 2014, after a three year long independent environmental assessment by the federal and provincial governments, the Project received approval from the provincial government to proceed. Construction on the Project began in July 2015. Beginning in August 2017, the Project was subject to an inquiry by the BC Utilities Commission, which provided a report to the BC Government on November 1, 2017. This led to a decision announced by the Provincial Government on December 11, 2017 to proceed with the Project.

The Project continues to be on track for river diversion (September 2020) and for the overall in-service date of 2024. The project budget (\$10.7 billion including Treasury Board Reserve) was approved by the BC Hydro Board of Directors in February 2018.

Each quarter and annually, BC Hydro voluntarily files reports with the BC Utilities Commission on the Site C Project, which includes information on construction progress, project milestones, project costs and financing and material project risks. For more information, please see <https://www.sitecproject.com/news-and-information/progress-reports-to-the-bcuc>.

Since the Project was approved, the Environmental Assessment Office has approved several amendments to the provincial Environmental Assessment Certificate for the Site C Project, related to:

- The generating station and spillway (Amendment #1)
- The bridge design at Halfway River (Amendment #2)
- The expanded use of West Pine quarry as an aggregate source (Amendment #3)
- The use of machines for reservoir clearing in riparian areas (Amendment #4).

On Oct 15, 2019, the Executive Project Director for Site C issued a statement to the BC Hydro and Power Authority that the Site C Clean Energy Project has been substantially started. The Environmental Assessment Office certificate issued in October 2014 will remain in effect for the duration of the Project.

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## 5. Events, Conferences and Seminars

### **Adaptive management for an international river basin: the future of the Columbia River Treaty**

British Columbia MRBB Member Lynn Kriwoken was invited to a workshop on [\*Adaptive management for an international river basin: the future of the Columbia River Treaty\*](#), at the University of California Berkeley, May 9-11, 2019 where she shared her experience and perspective on the Mackenzie River Basin water agreements and associated governance. The workshop participants examined a number of examples of where adaptive management is being applied in a transboundary setting and concluded that adaptive management and governance be considered as a promising approach to implement in the Columbia River Basin.

### **Other Outreach and Engagement**

BC regularly participates in, or leads presentations and panel discussions, at a number of local, provincial, national and international events, conference, workshops and outreach/training seminars and webinars. Recent events include the International Association of Hydrogeologists - Canadian National Chapter Conference in Quebec City, Biennial CABIN Forum in Yellowknife, Canadian Ecotoxicity Workshop in Quebec City, and many other activities and opportunities to work collaboratively and share knowledge with our colleagues.