Northwest Territoriesmi
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MEETING EDE 23-20-24

STANDING COMMITTEE ON ECONOMIC DEVELOPMENT AND ENVIRONMENT

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WEDNESDAY, AUGUST 28, 2024
EAGLE ROOM, LEGISLATIVE ASSEMBLY / ZOOM
1:30 PM

AGENDA

1. Call to Order

2. Prayer

3. Review and Adoption of Agenda

4. Declarations of Conflict of Interest

5. Public Matters
   a) Public Briefing from Minister of Environment and Climate Change on Low Water Levels and Transboundary Agreements

6. In Camera Matters
   a) Debrief
   b) Confidential Correspondence :
      i. 2024-08-12 Minister of Environment and Climate Change
      ii. 2024-08-12 Minister of Environment and Climate Change
   c) Hay River Itinerary
   d) Work Plan

7. New Business
   a)

8. Date and Time of Next Meetings:
   a) Tuesday, September 10, 2024 to Wednesday, September 11, 2024 – Committee Travel to Hay River, NT
   b) Thursday, September 26, 2024 – 9:00 a.m. Taltson Briefings

9. Adjournment

SCEDE Briefing: Low water on the Mackenzie River

Government of
Northwest Territories

Presentation Outline

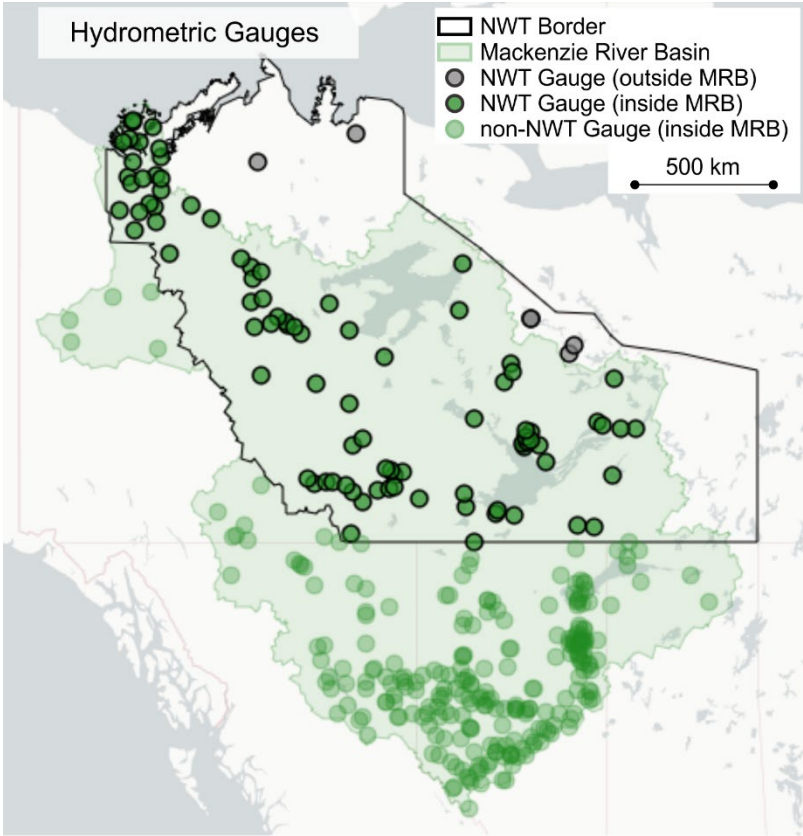
- Low water levels
  - Update on current status and cause
  - Modelling and forecast
- Hydroelectric generation on the Peace River
  - Impacts on Great Slave Lake and the Mackenzie River
  - Communication with BC Hydro and the public
- Transboundary Agreement
  - Transboundary governance
  - Information sharing
  - Dispute resolution update

Great Slave Lake at Hornby Channel, Jun. 2024

Overview of NWT hydrology

- Most of mainland NWT falls within the Mackenzie River Basin (nearly 2 million km^2)
  - Slave (42% of Mackenzie River annual flows)
  - Liard (28%)
  - Great Slave Lake local (12%)
    e.g. Hay, Taltson, Lockhart, Marian, Yellowknife
  - Peel and Arctic Red (10%)
  - Great Bear (6%)
  - Other small tributaries (2%)

- GNWT are partners with Water Survey of Canada in the NWT Hydrometric Monitoring Network
  - 107 stations in the NWT
  - Sites consist of lakes, rivers, creeks
  - Sites measure water level and/or flow

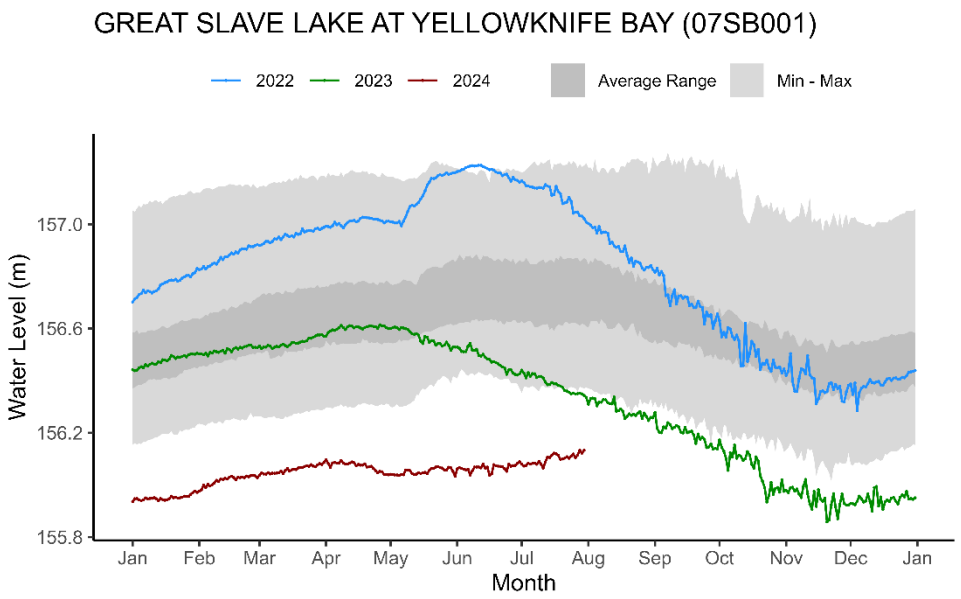


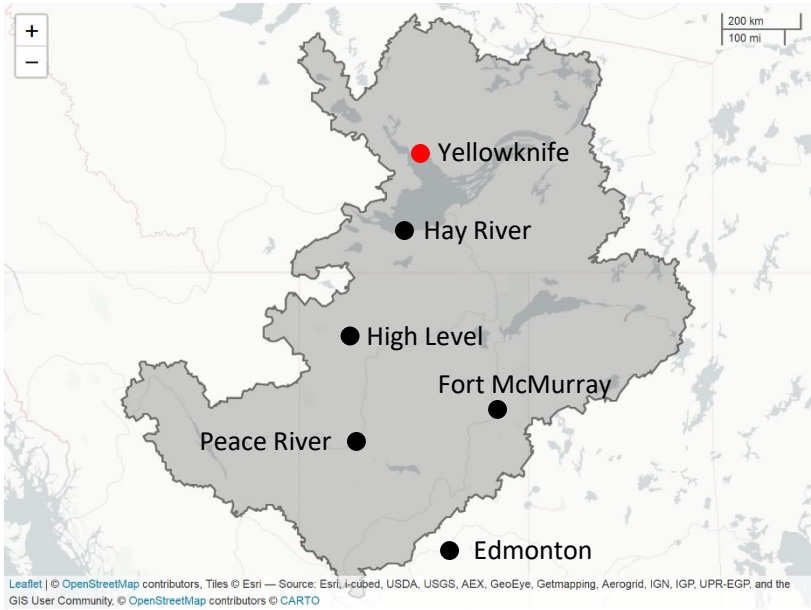
Record low water levels across NWT

- Water levels have been extremely low across much of the NWT in 2023 and 2024
- Most gauged rivers in the southern NWT reached their lowest levels on record during the summer of 2023 and remain very low
- Low water levels are a combination of abnormally warm temperatures and very little rain
  - High temperatures lead to more evaporation from lakes and transpiration from plants
  - These climate conditions are a combination of global-scale atmospheric phenomenon (e.g. El Niño/La Niña) and climate change

Hay River at Alexandra Falls, Oct. 2023

Great Slave Lake

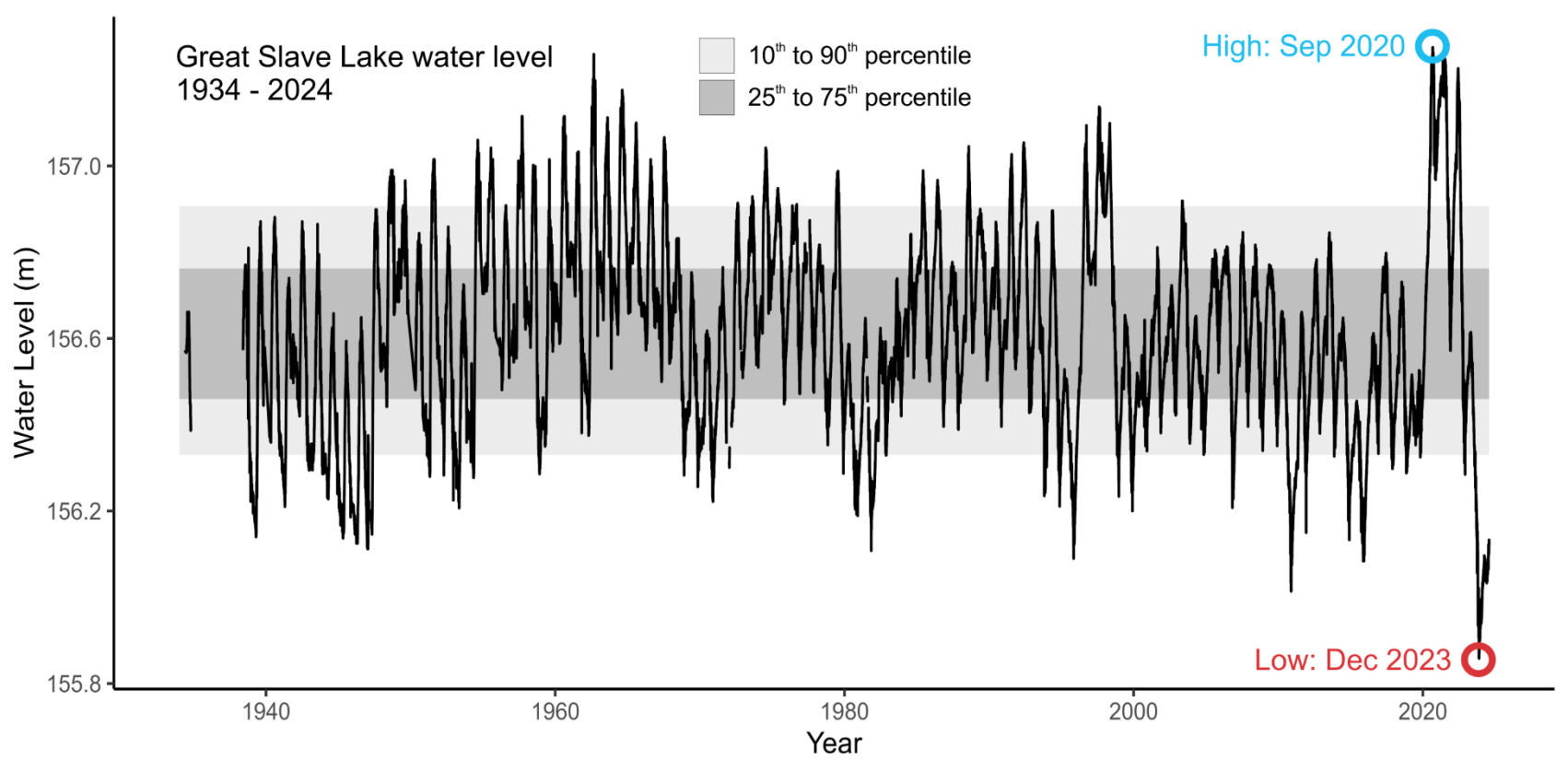




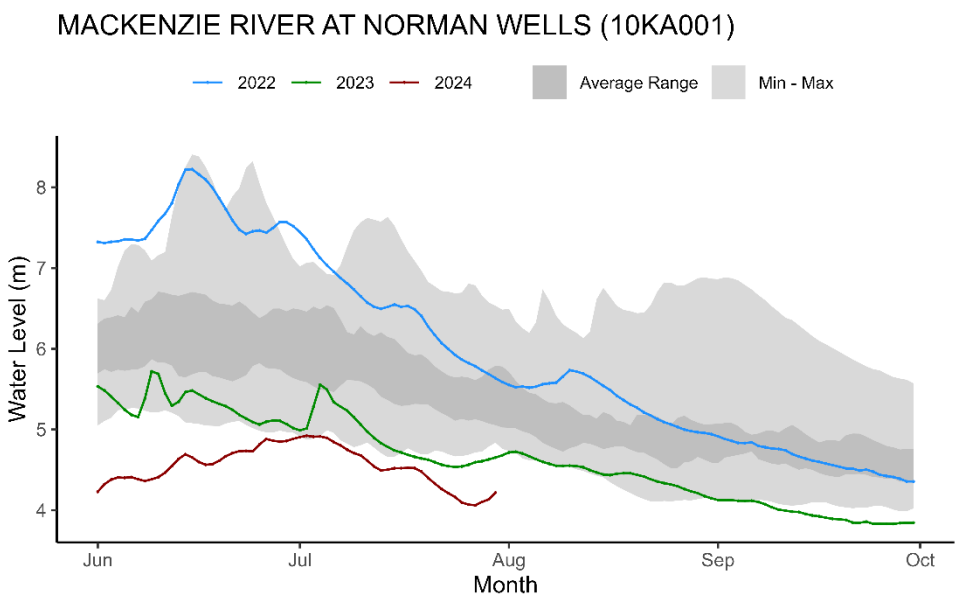
- Water levels on Great Slave Lake at Yellowknife for the past three years (2022 to 2024)
- This plot shows levels going from the highest on record in June 2022 to the lowest on record in 2023/2024

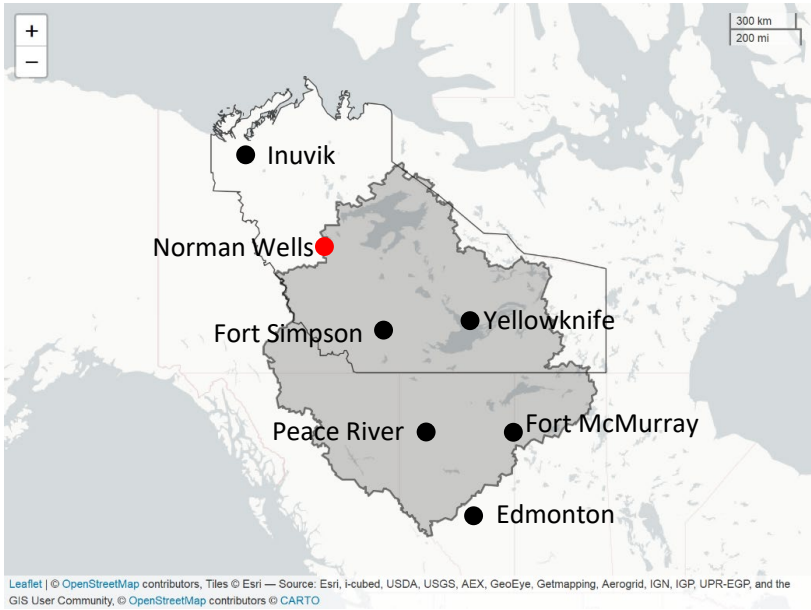
- Drainage basin of Great Slave Lake
- The red dot is where water levels have been monitored in Yellowknife Bay since 1934

Great Slave Lake at Yellowknife Bay



Mackenzie River at Norman Wells

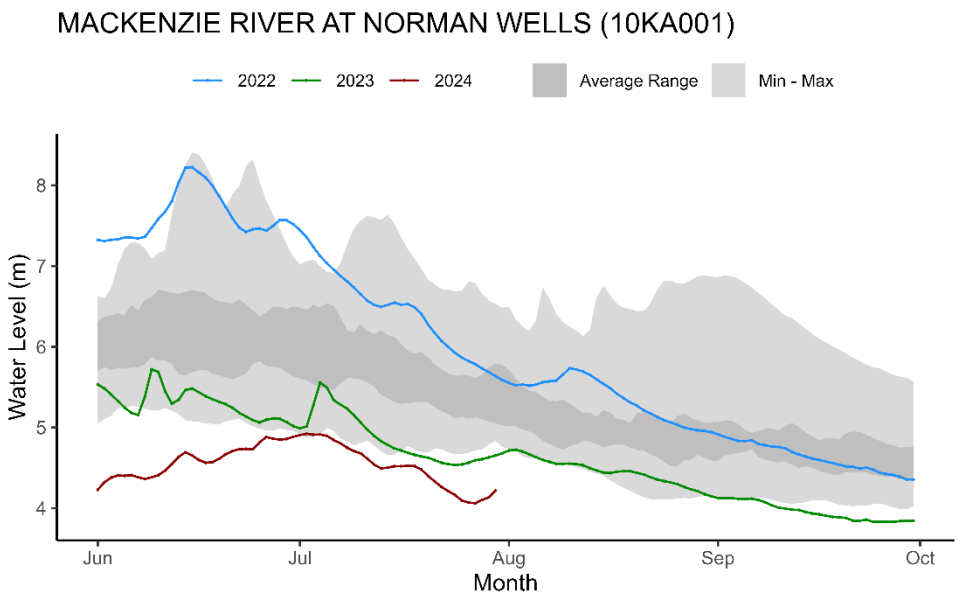


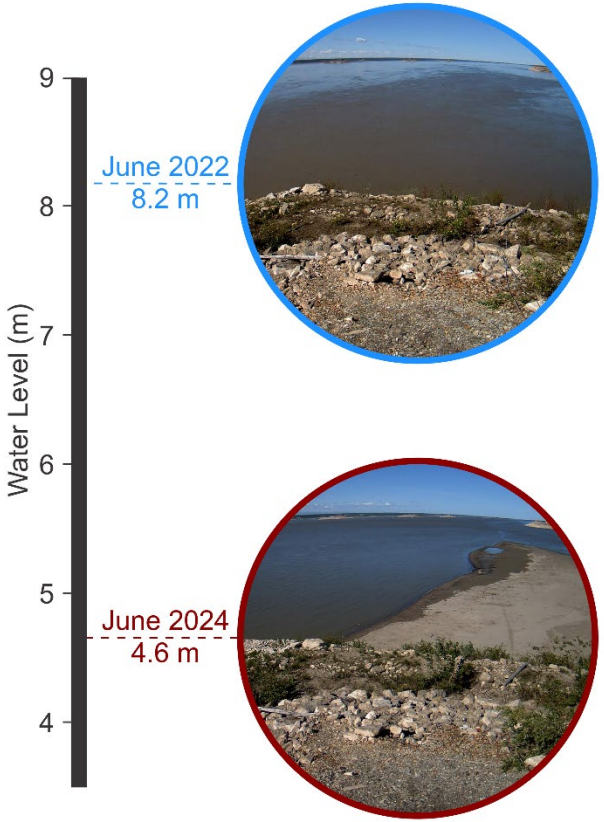


- Summer water levels on the Mackenzie River at Norman Wells for the past three years (2022 to 2024)
- Water levels in 2024 are the lowest on record for this time of year

- Drainage basin of the Mackenzie River at Norman Wells
- The red dot is where hydrometric data have been monitored since 1943

Mackenzie River at Norman Wells





Mackenzie River Ramparts

Low water: May 23, 2024

Average water: May 23, 2023

Hydrological and climate modelling in the NWT

- We do not have a physically based model for the Mackenzie River basin
  - With support from ECCC, we are developing a machine learning approach
    - Uncertainties are very high

- ECC scientists are developing an integrated hydroclimate database for the NWT which will improve model development

- A perfect hydrological model will only be as good as a weather forecast

- It is likely that the global climate will transition into a La Niña phase this fall
  - La Niña systems typically result in colder and wetter winters in western Canada
  - It is not known if the increased precipitation will fall within the Mackenzie River basin
  - We do not know the strength of the La Niña system

- ECC scientists conduct regular briefings with INF and MACA Departments

Upstream hydroelectric generation (1)

- BC Hydro provides regular updates on the status of Site C construction on their website and sends bulletins to stakeholders and the public
- Site C reservoir filling is expected to begin during the last week of August and will take up to four months to complete
- ECC calculated a maximum decrease in water levels on Great Slave Lake of 8.5 cm resulting from filling the Site C reservoir
  - This will not be a permanent loss of water and will be replenished as more water moves through the river system

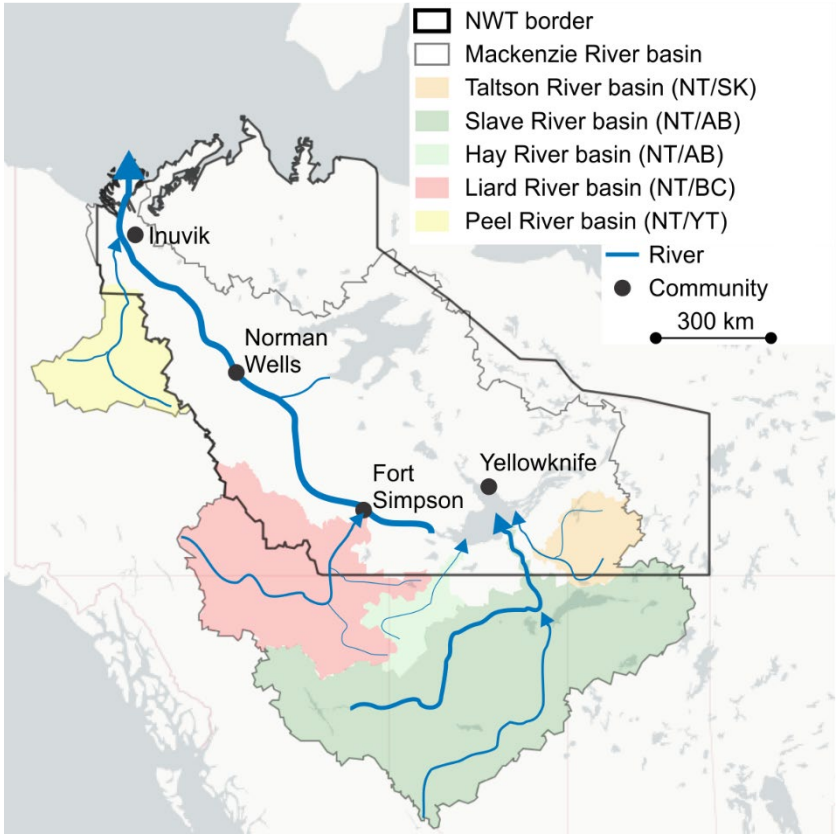
Upstream hydroelectric generation (2)

- BC Hydro maintains that downstream impacts from Peace River hydroelectric generation will not be noticeable downstream of Peace River
- Environment and Climate Change wrote a letter to the BC Hydro last year asking that BC Hydro consider the impact of filling Site C on water levels in the NWT
- BC Hydro responded that there will be no impacts on water levels in the NWT
- ECC officials are drafting a second letter to BC Hydro to initiate an information sharing agreement

Transboundary water governance

Mackenzie River Basin Transboundary Waters Master Agreement

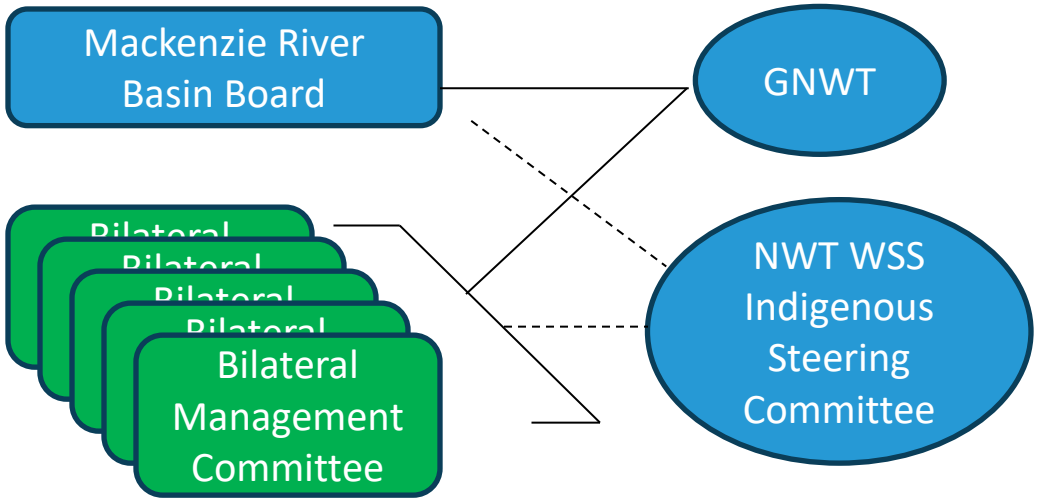
Bilateral Water Management Agreement



Transboundary water governance

Three tiers of governance:

1) Mackenzie River basin;
2) Bilateral agreements; and
3) NWT



Bilateral Management Committee (BMC)

Duties:

- Develop and approve work plans and budgets
- Classify transboundary waters based on risk
- Establish priorities for joint learning, monitoring and research
- Set, monitor, and assess transboundary objectives
- Bring forward input and interests from the public and IGIOs
- Share information and provide notification
- Undertake actions to resolve disputes and refer to Ministers if they cannot be resolved

Reporting:

- A report is submitted to the Ministers annually to document implementation activities and monitoring results for Class 3 waters
  - e.g. Slave and Hay rivers

Information Sharing and Notification

- The BMC is the central body through which notification is shared between our two jurisdictions
- The BMC meet at least twice per year, but additional meetings take place to discuss topics of interest such as oil sands mine water, low flow conditions, and the Kearl incident
- In addition to the BMC meetings, regular information sharing meetings occur between Alberta and GNWT Assistant Deputy Ministers and between the Deputy Ministers every two months
- Currently, information related to spill incidents is shared by email with the GNWT BMC member and other staff within the ECC Water Monitoring and Stewardship Division

Dispute Resolution - Kearl

- Dispute resolution process initiated by the GNWT in March 2023 following lack of notification from Alberta on Kearl Lake Oil Sands Mine spill and seepage.
- Several options listed in the Agreement to resolve disputes. Dispute can also be referred to Ministers.
- Given the level of concern, the dispute was referred to Ministers and two meetings took place.
- GNWT and Alberta are currently working to resolve the dispute by improving Alberta's notification protocols and establishing clear criteria that would trigger notification.
- Alberta is currently reviewing proposed criteria and considering including the GNWT in their internal notification system.

Thank you