Government of
Northwest Territories

NWT Water Monitoring Bulletin – Sept 6th, 2024

NWT Water Monitoring Bulletins are posted monthly. These bulletins are intended to provide an update of water flow and level data at select NWT Hydrometric Network gauge stations across the Northwest Territories.

Where available, data from river sites are presented as flow (discharge) or water level and data from lake sites are presented as level. The figures in this report represent current conditions for this year, relative to historic minimum and maximum values, extreme values (10th to 90th percentiles) and the average range, which is calculated as the interquartile range.

The NWT Hydrometric Network is a partnership between ECC and Environment and Climate Change Canada (ECCC) and is operated by the Water Survey of Canada (ECCC). Both historic and real-time data for all stations are available at https://wateroffice.ec.gc.ca/index_e.html. All 2023 and 2024 data are considered provisional and may contain values that are later corrected.

Any questions regarding information contained in this Bulletin can be directed to NWTWaters@gov.nt.ca.

Current status:

- Water levels and flow rates remain very low across most of the NWT, with little change observed in August. Some rivers and lakes have seen slight fluctuations, but there have been no significant changes. Looking forward, a decrease in water levels and flow rates is expected for September and October, as is normal for this time of year, when precipitation amounts are reduced and fall freeze up approaches.
    - Great Slave Lake remains at its lowest water level recorded for this time of year and is lower than last year at this time. The water level has increased since the start of summer by about 12 cm.
    - Flow rates on the Slave River have increased in August and are approximately average for this time of year, although cumulative flows for the summer are still very low relative to average.
    - Flow rates on the Hay River are at their lowest recorded value for this time of year.
    - Flow rates on the Liard River are well below normal for this time of year, and cumulative flows on the Liard River have been extremely low this summer.
    - Flow rates at most locations along the Mackenzie River are well below average or at their lowest recorded values for this time of year.
    - Flow rates at the outlet of Great Bear Lake are below average for this time of year.
    - Water levels in the Mackenzie River Delta have slightly increased in August but remain low for this time of year.

- Low water levels continue to be the result of extreme drought conditions that began in the summer of 2022, and have persisted through 2023 and 2024.

- Cumulative precipitation **so far this spring and summer** has been well below average for NWT communities, apart from Inuvik with well above average precipitation. Cumulative precipitation in Yellowknife is at its lowest value on record.

- **August precipitation** across the NWT was well below normal for nearly all communities. The only exception was Inuvik, which received approximately average precipitation.

- August temperatures across the NWT were much warmer than average, driving higher evapotranspiration rates.

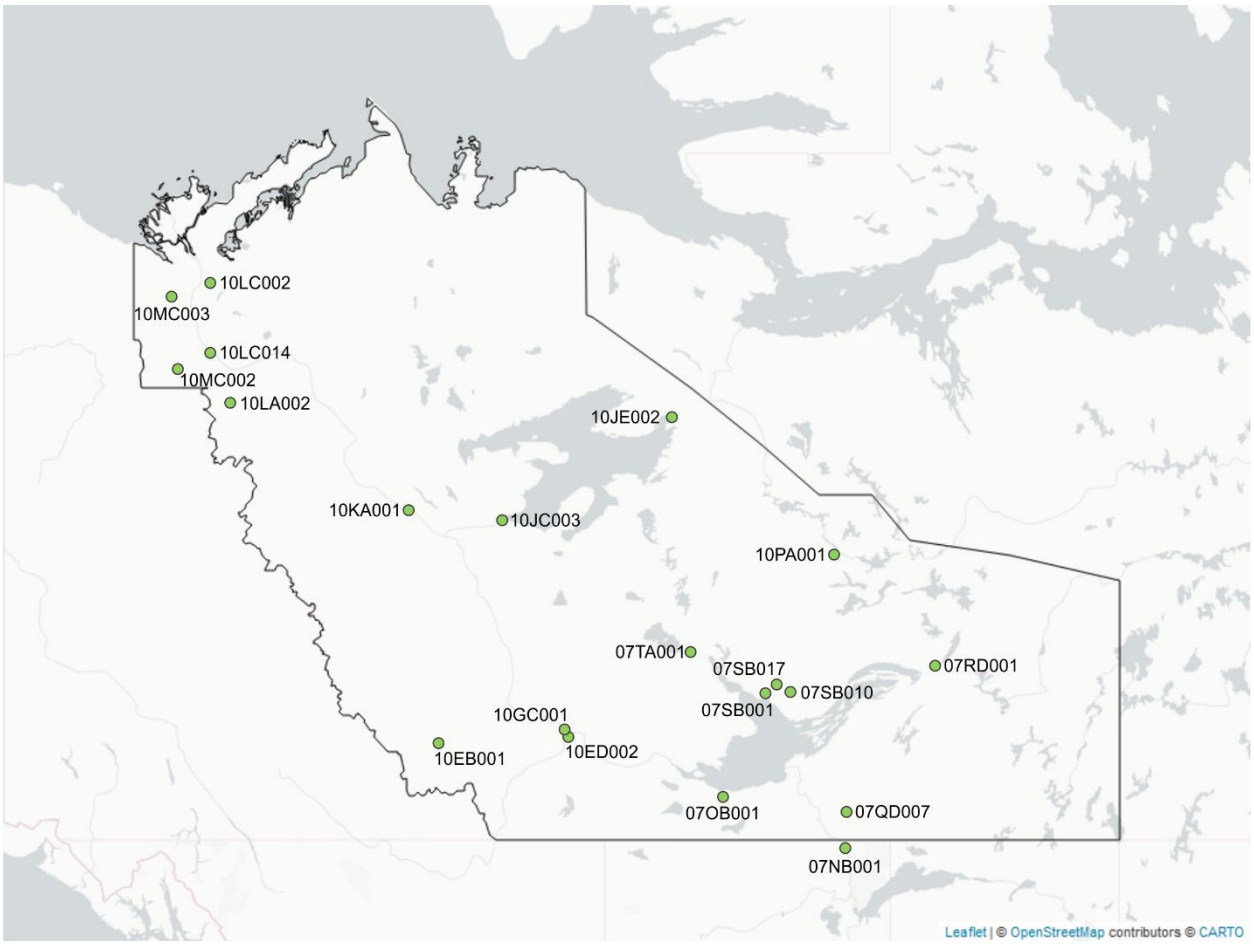
- Low water levels on Great Slave Lake and the Mackenzie River are influenced by rainfall received in northern British Columbia, Alberta, Saskatchewan, and southern NWT.
    - Precipitation in the Mackenzie River basin in northern BC and AB has been approximately average so far this summer, with some variability between communities.
    - Average precipitation has not been enough to overcome the extreme drought and soil moisture deficit. Several months of above average precipitation is needed to raise water levels.
    - As of August 25, 2024, BC Hydro started filling the Site C reservoir. The process is anticipated to take up to four months to complete. The filling of Site C is projected to have a relatively minor impact on our water levels compared to the

effects of our current drought which caused water levels to drop significantly during the summer of 2023.

- Guidance from Environment and Climate Change forecasts suggests that most of the NWT will likely (greater than 40% chance) see above normal precipitation for the months of September, October and November.

Contents

Hydrometric station map



Above – A map of the hydrometric stations included in this report.

Information on interpreting figures:

Water level and flow figures:

Note: New for this month's bulletin - additional grey bands have been added to represent the 10th and 90th percentiles.

The light blue line shows water levels/flows from last year (2023), while the dark blue line shows current water levels/flows from 2024. The darkest grey band represents the average range (calculated as the interquartile range, which is the 25th to 75th percentile), the next lightest grey bands represent a wider range of values (10th to 90th percentiles) and the lightest grey bands represent the highest and lowest levels or flows on record. If the dark blue line is within the dark grey band, current conditions can be assumed to be normal.

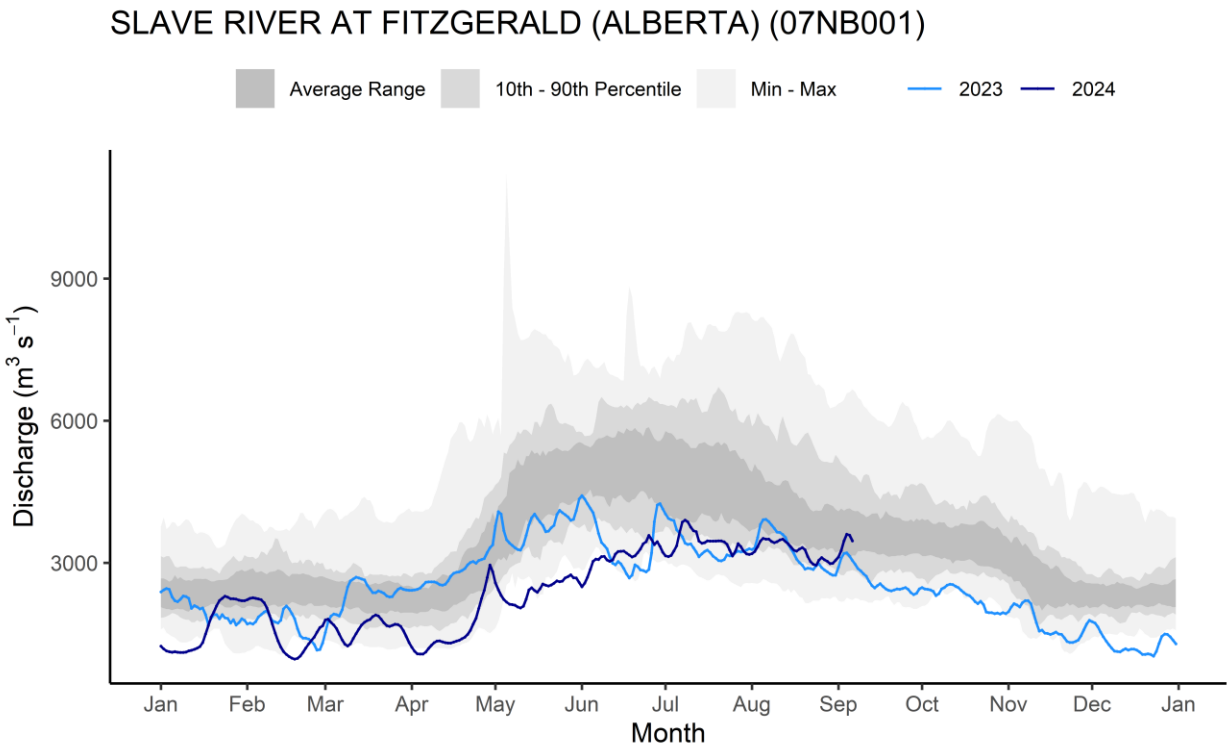
Note: The grey bands are calculated for data prior to 2023. If the line from 2023 or 2024 is above (or below) the grey band, it means that the water level or flow from that year was the highest (or lowest) on record.

Climate figures:

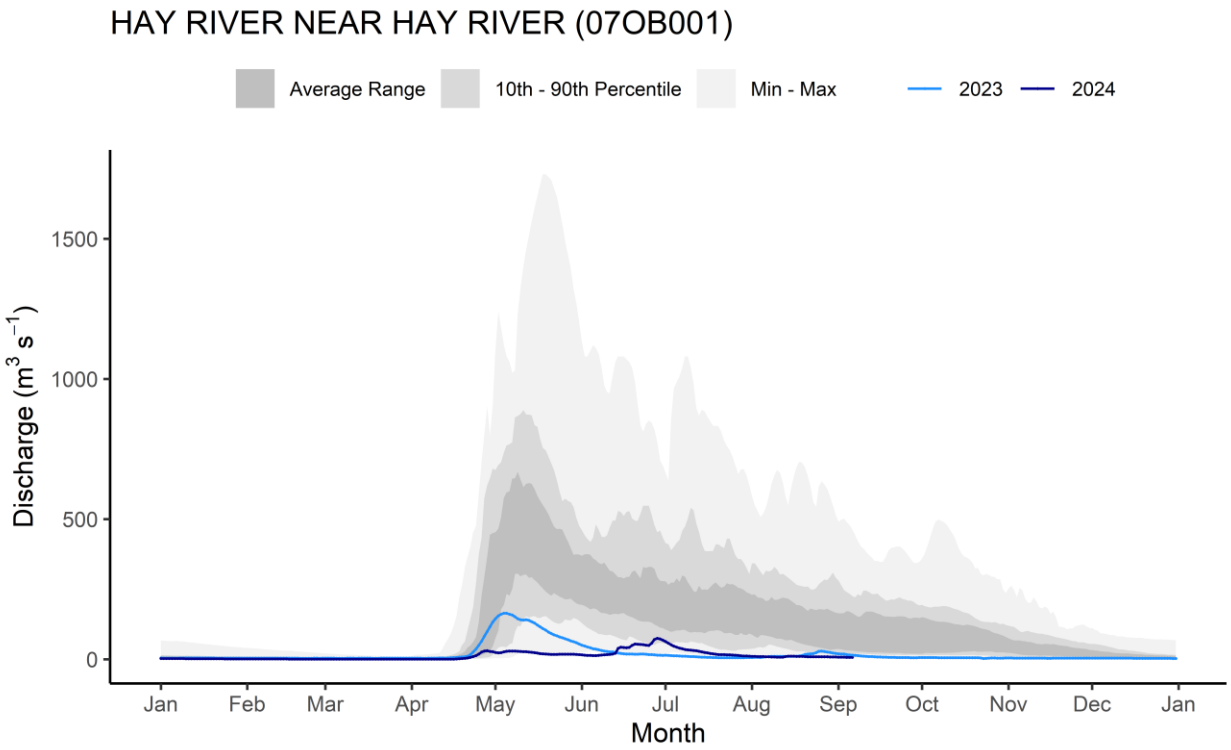
Monthly air temperature and precipitation data are displayed for six communities in the NWT (Fort Smith, Hay River, Yellowknife, Fort Simpson, Norman Wells, and Inuvik) and presented as box and whisker plots. The box in each plot represents the average range (calculated as the interquartile range) for each month, and the whiskers are the vertical black lines that represent the extreme values (10th to 90th percentiles). Each grey dot is the value from a previous year, beginning in 1950. The red or blue dots represent the values for the current year. These data are primarily acquired and managed by Environment and Climate Change Canada, but in some cases 2024 values have been infilled with GNWT climate station data when ECCC data are unavailable.

Water level and flow data:

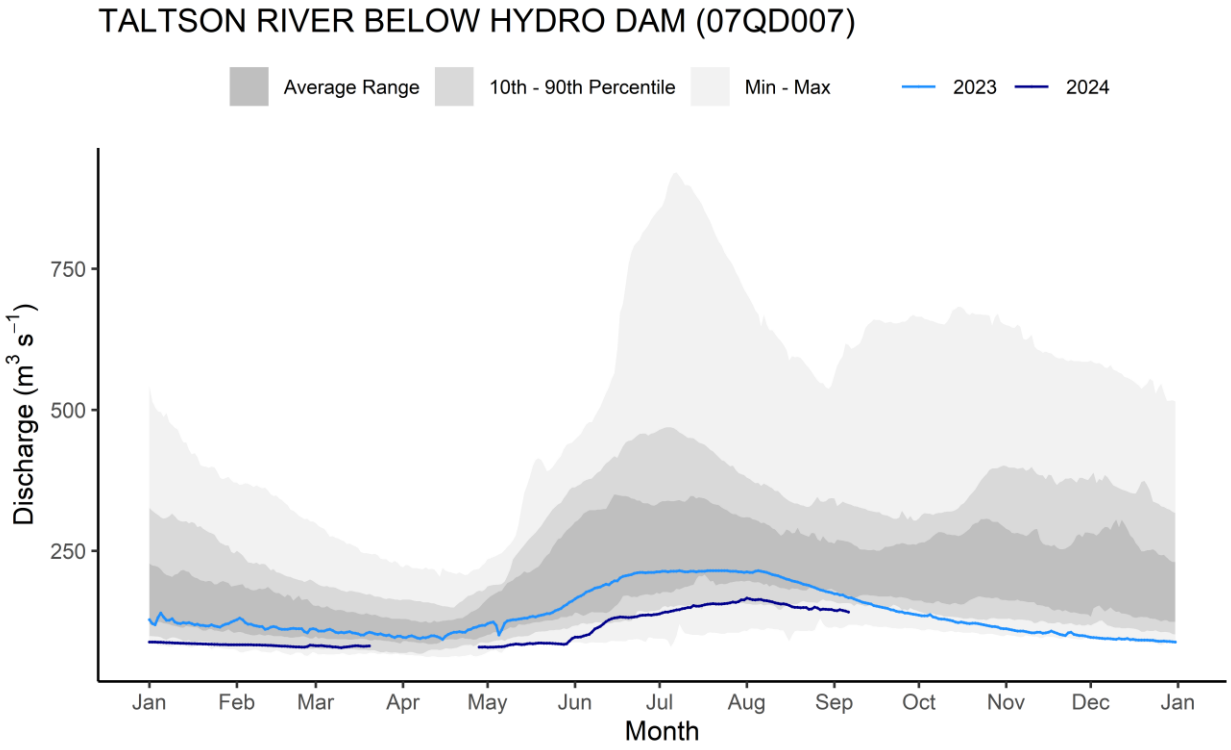
Slave River at Fitzgerald [07NB001]



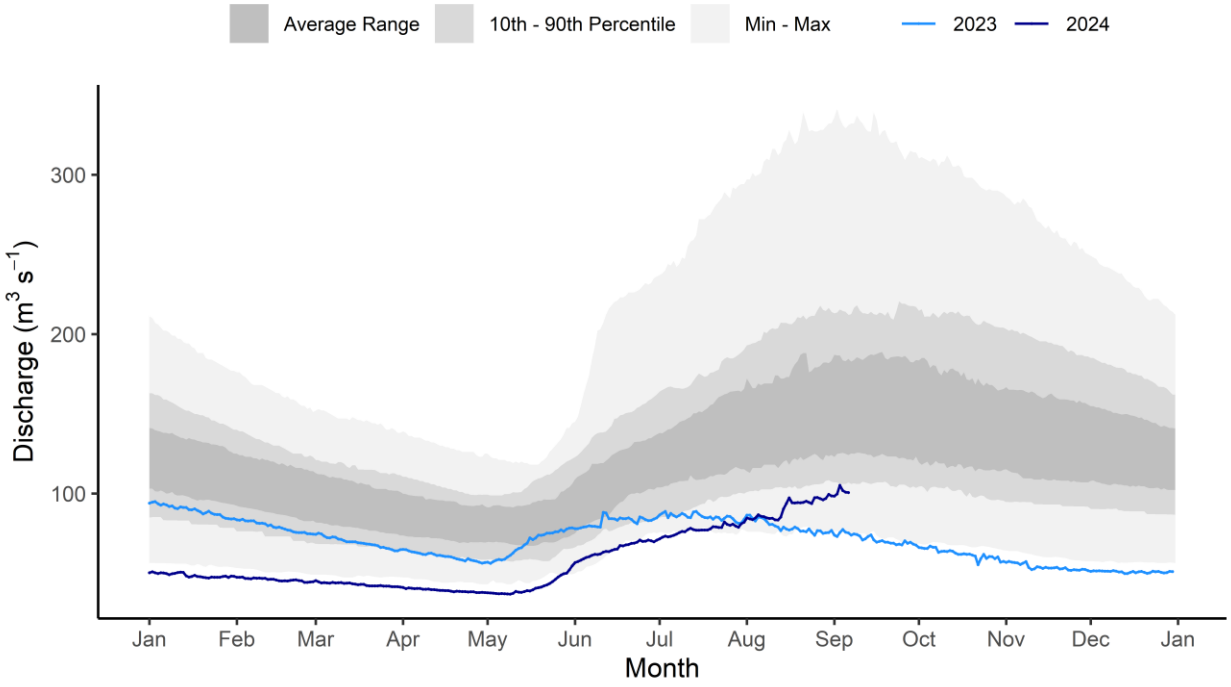
Hay River near Hay River [07OB001]



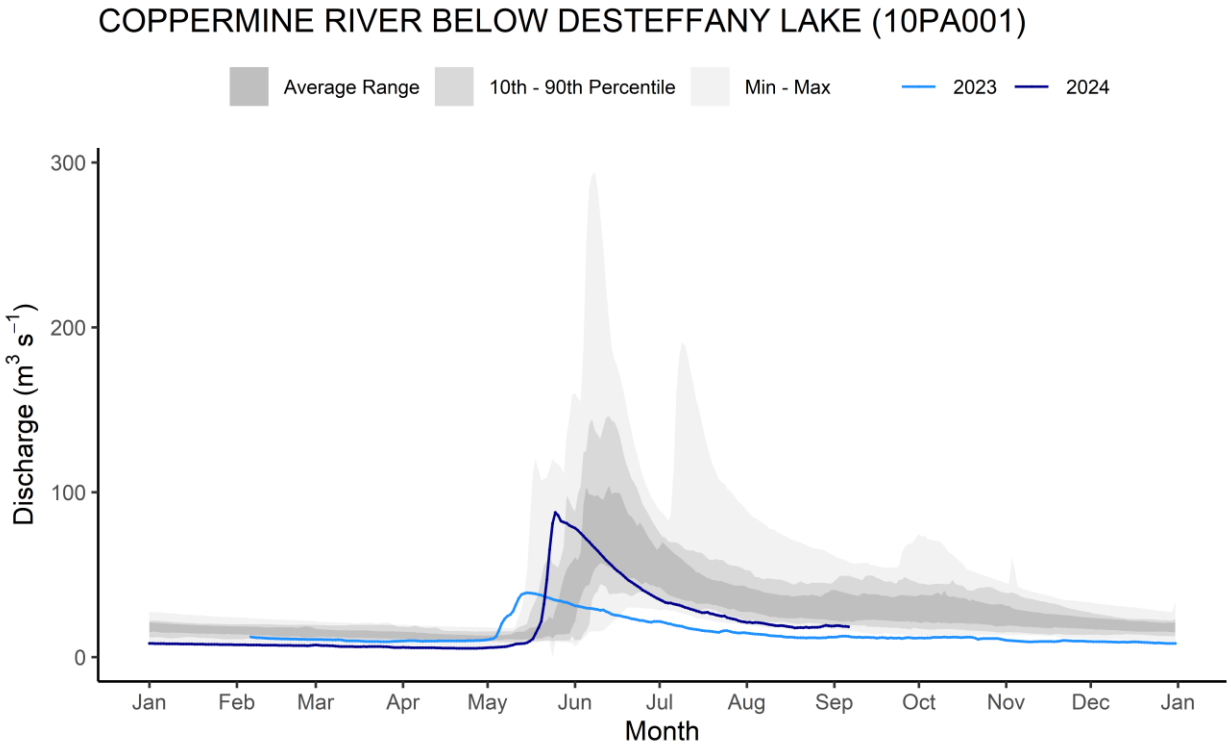
Taltson River below Hydro Dam [07QD007]



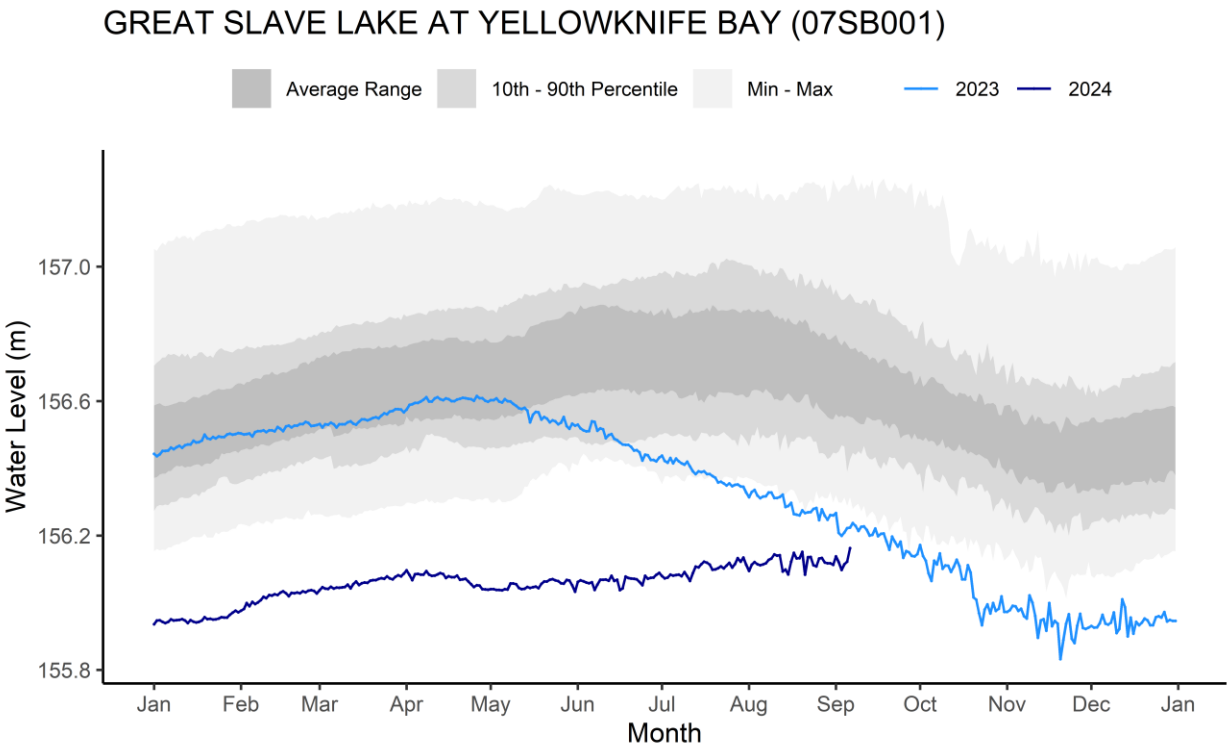
Lockhart River at outlet of Artillery Lake [07RD001]



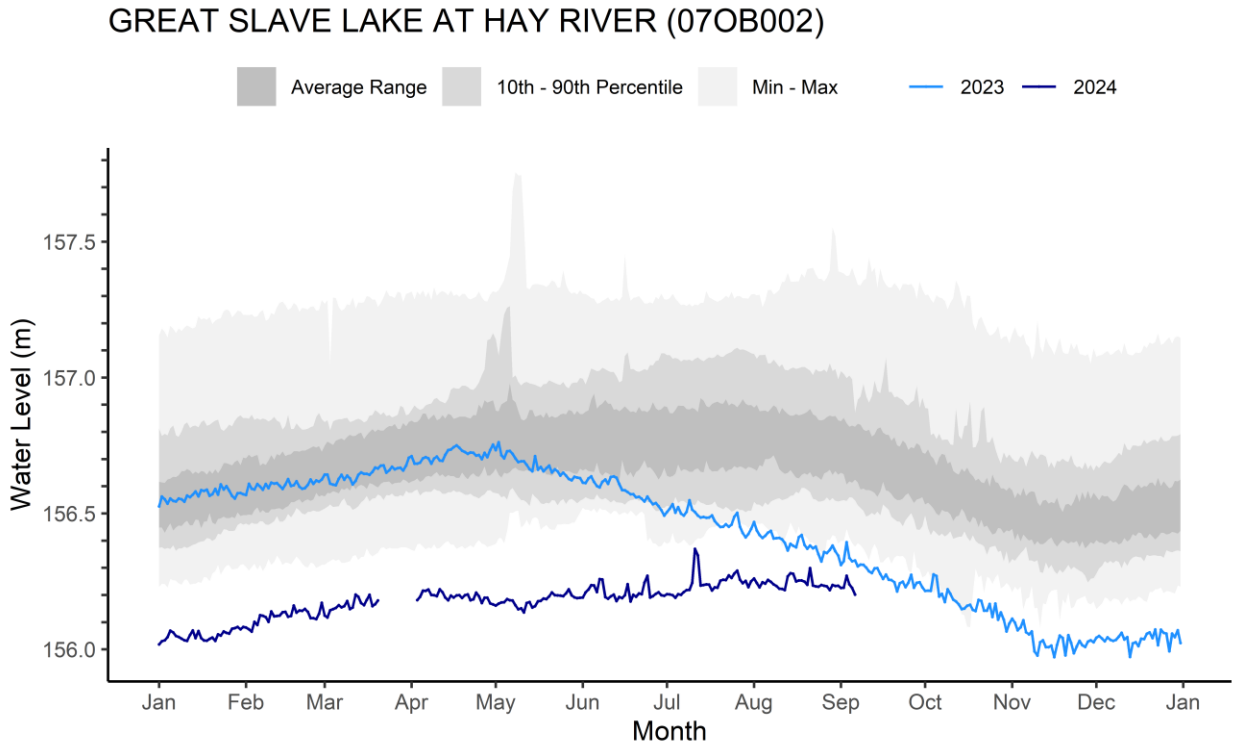
Coppermine River below Desteffany Lake [10PA001]



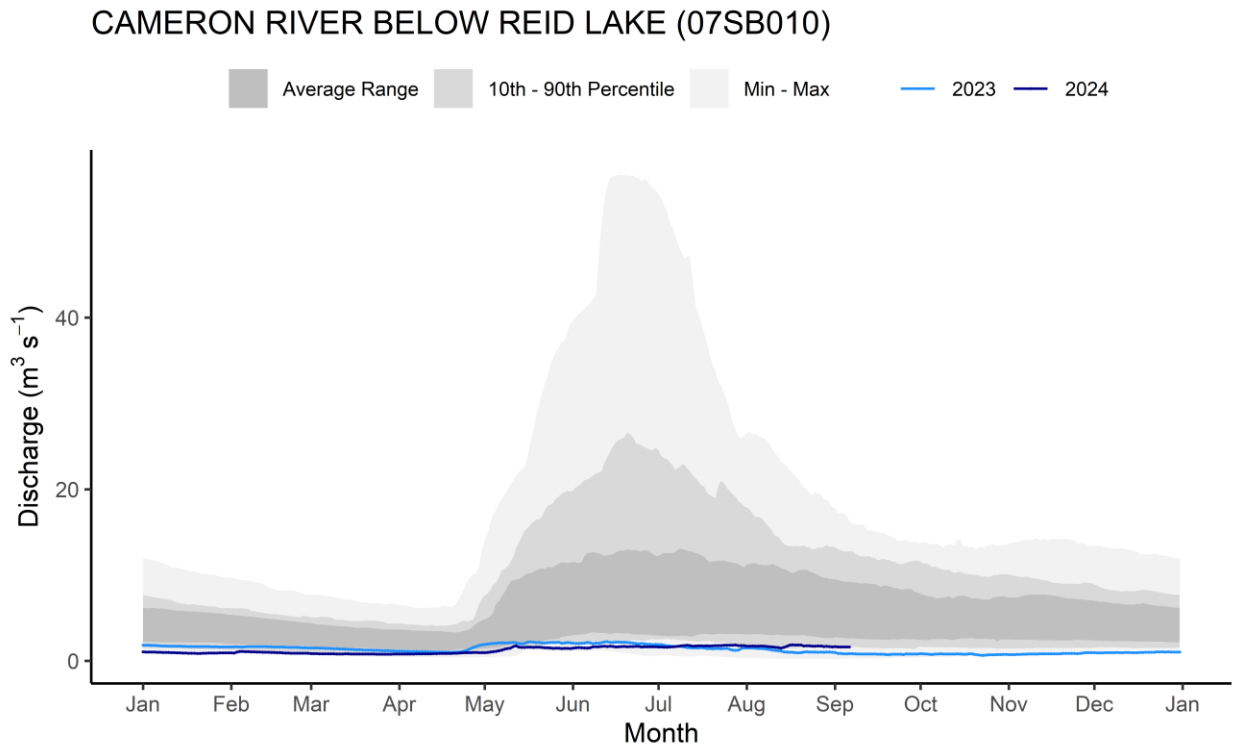
Great Slave Lake at Yellowknife Bay [07SB001]



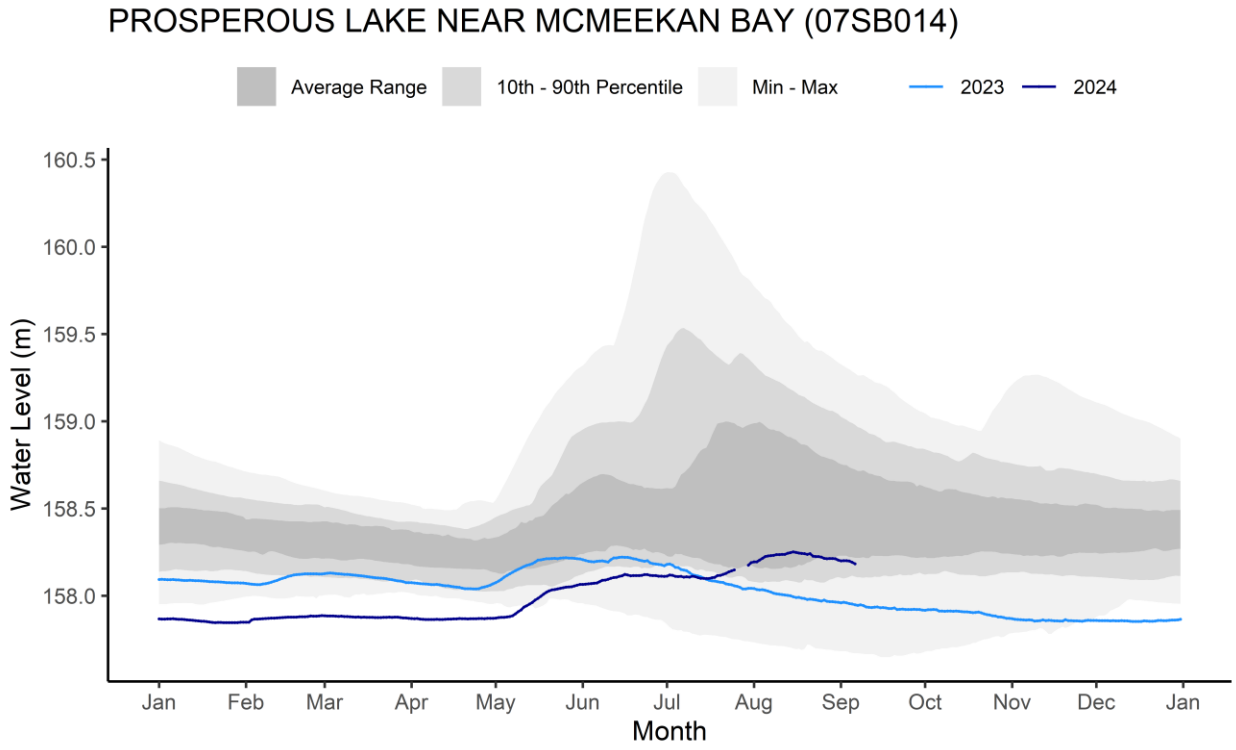
Great Slave Lake at Hay River [07OB002]



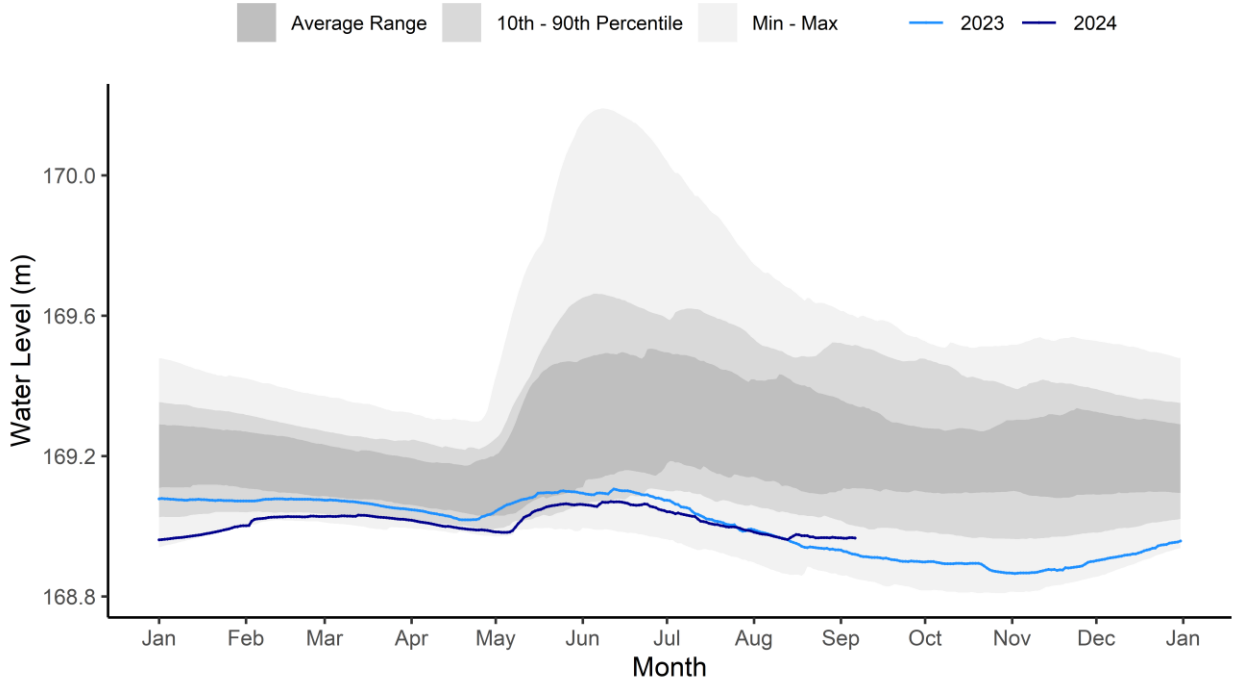
Cameron River below Reid Lake [07SB010]



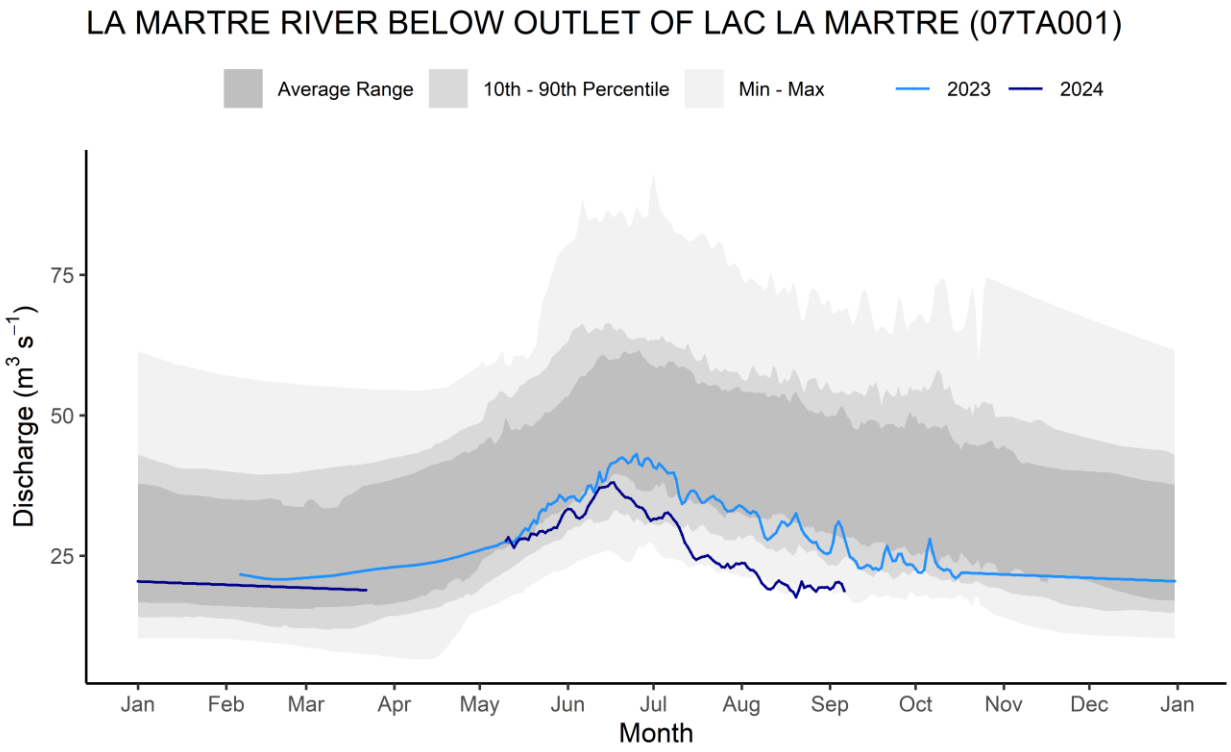
Prosperous Lake near McMeekan Bay [07SB014]



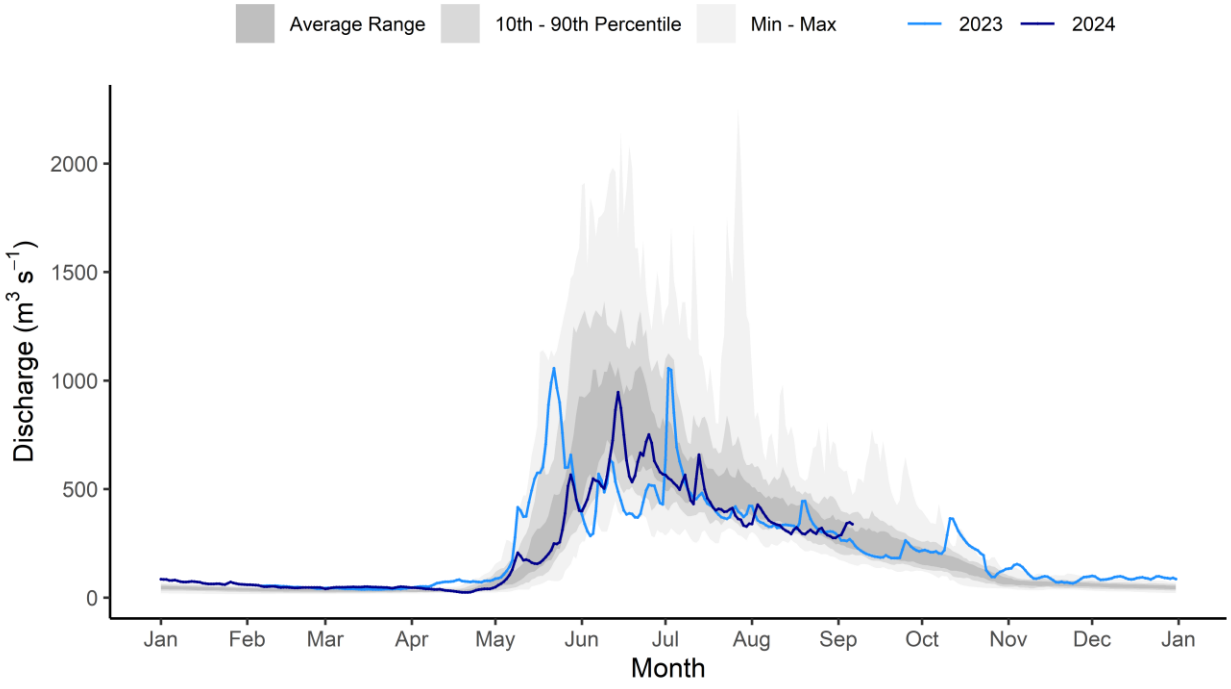
Prelude Lake near Yellowknife [07SB017]



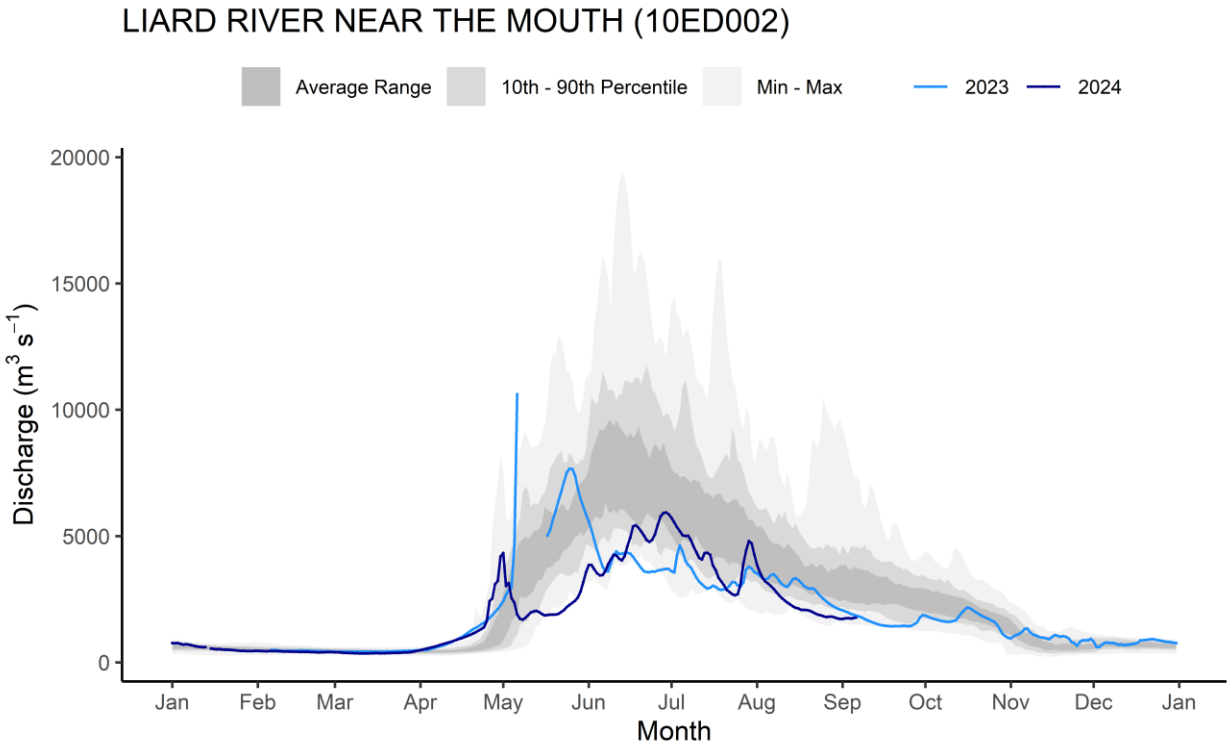
La Martre River below outlet of Lac La Martre [07TA001]



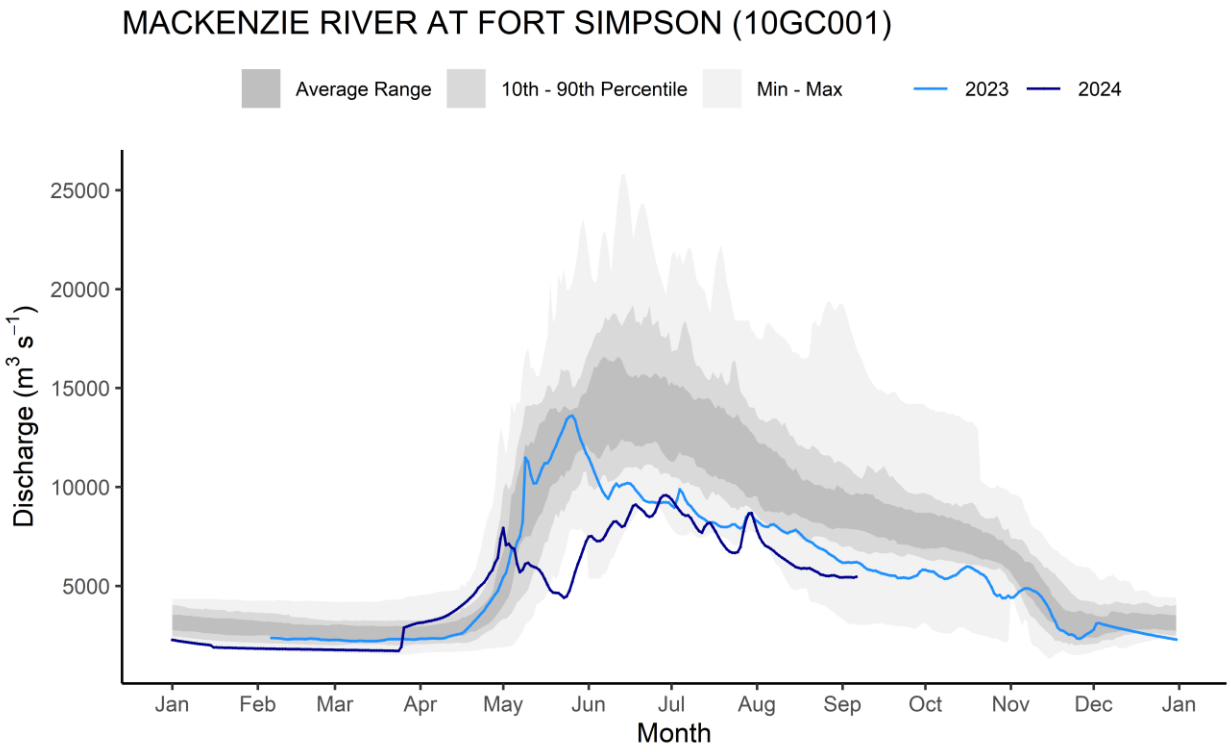
South Nahanni River above Virginia Falls [10EB001]



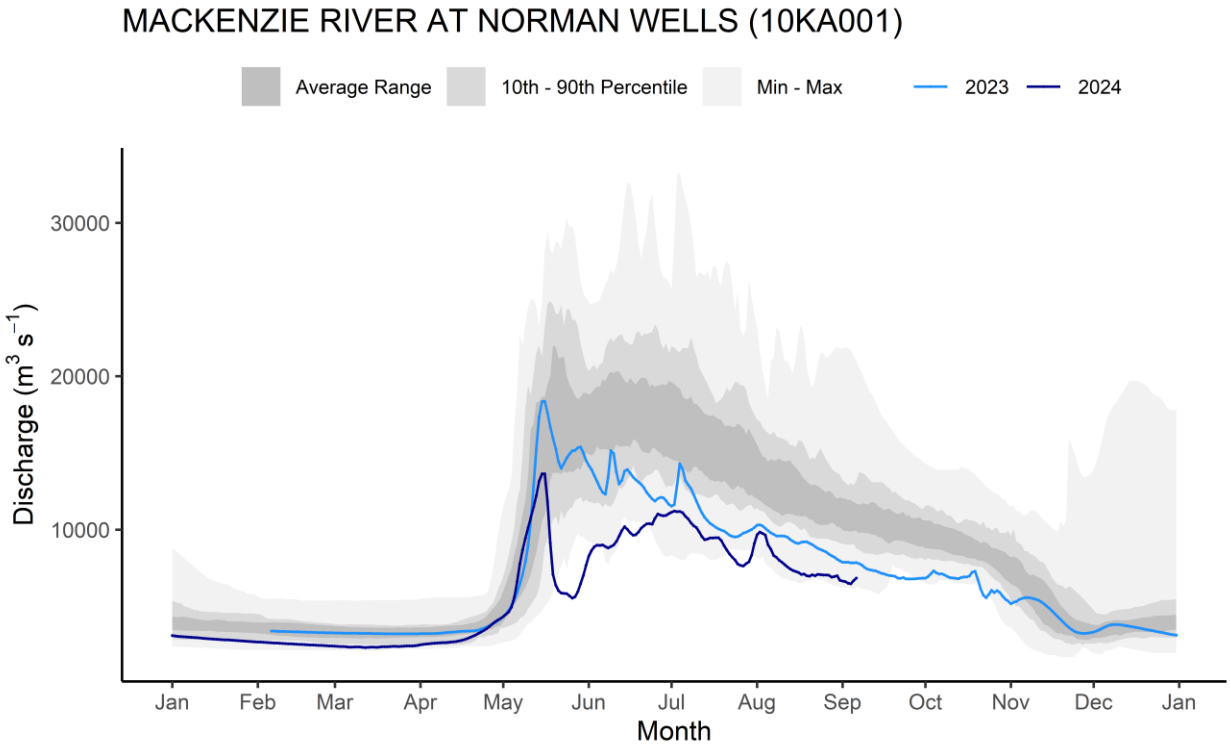
Liard River near the Mouth [10ED002]



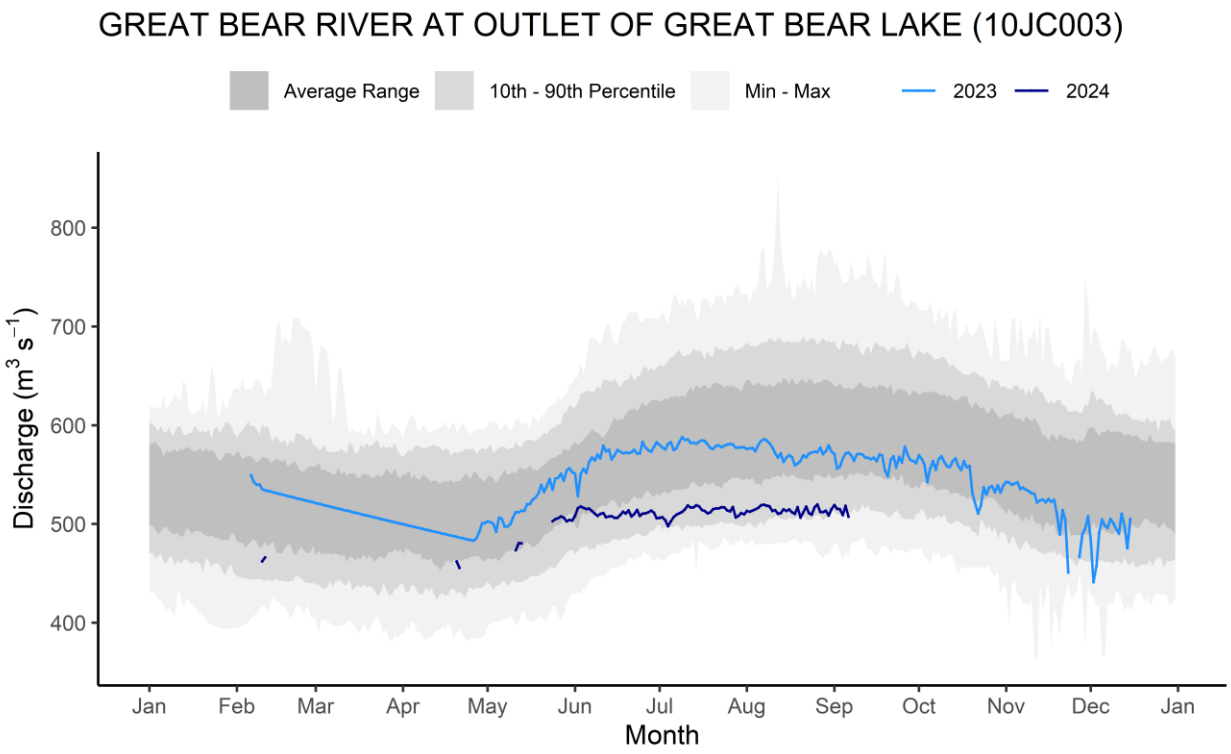
Mackenzie River at Fort Simpson [10GC001]



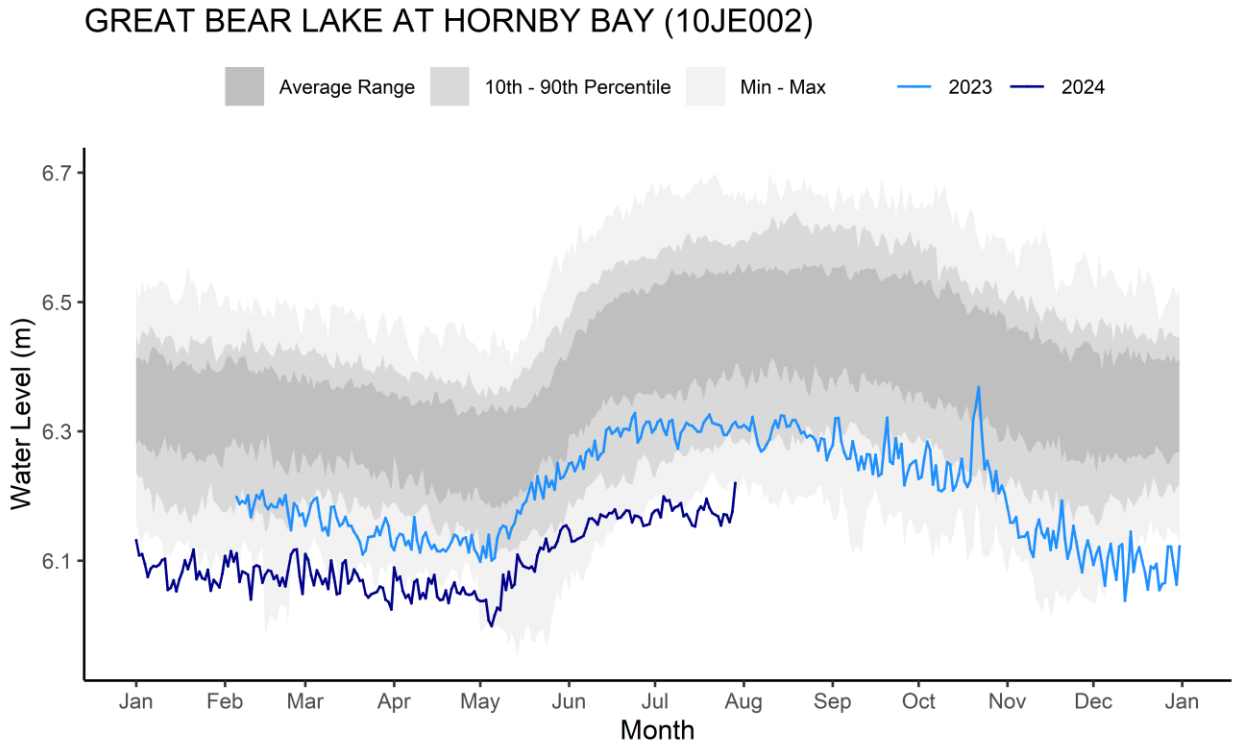
Mackenzie River at Norman Wells [10KA001]



Great Bear River at outlet of Great Bear Lake [10JC003]

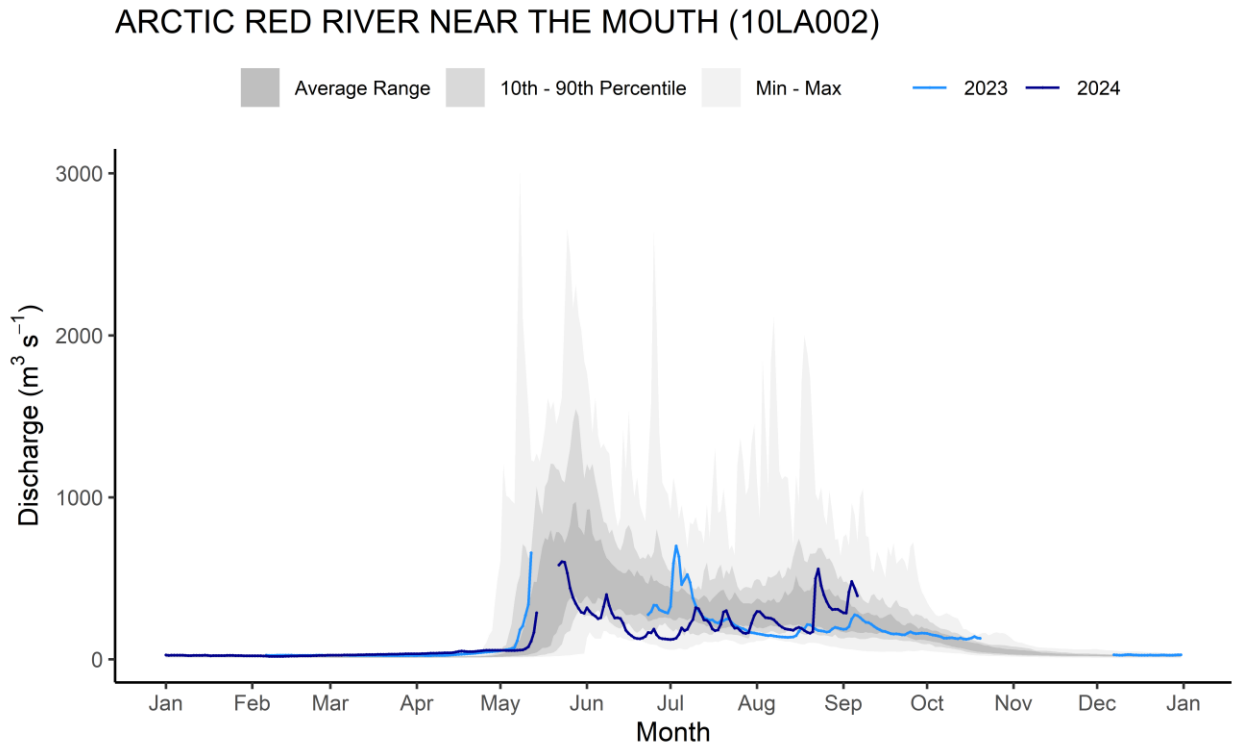


Great Bear Lake at Hornby Bay [10JE002]

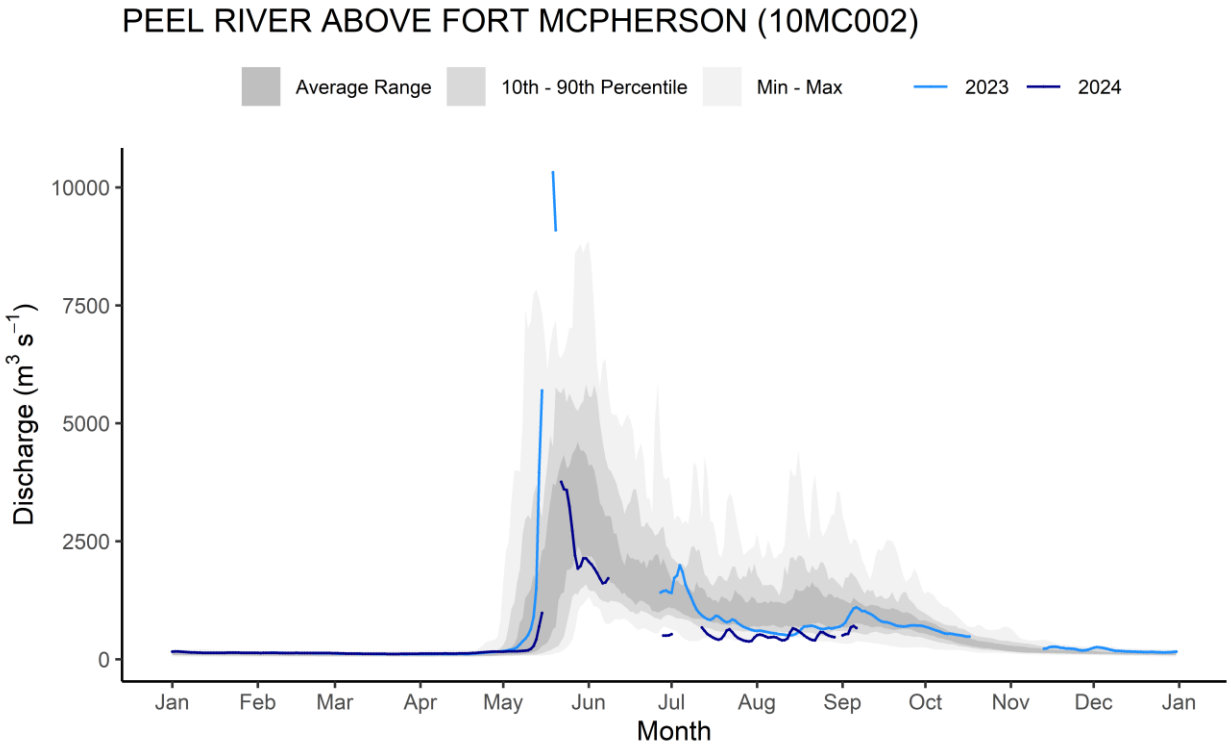


Note: August water levels are not available for 10JE002.

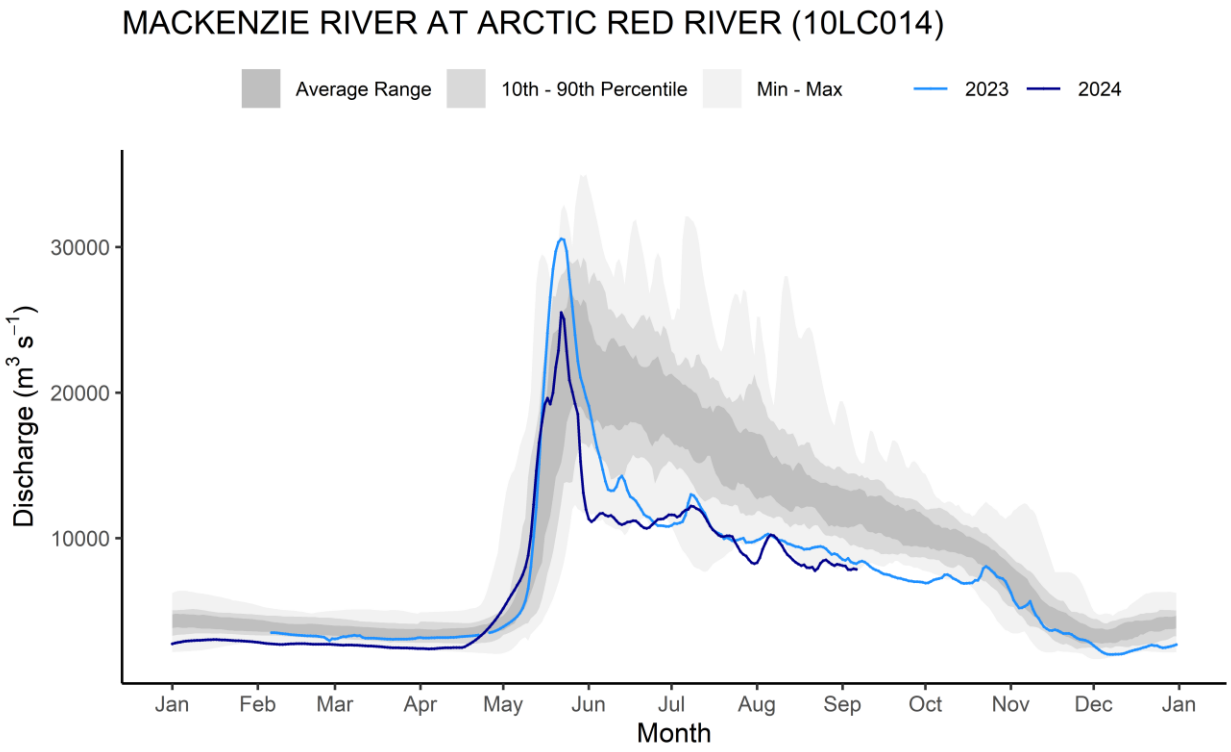
Arctic Red River near the mouth [10LA002]



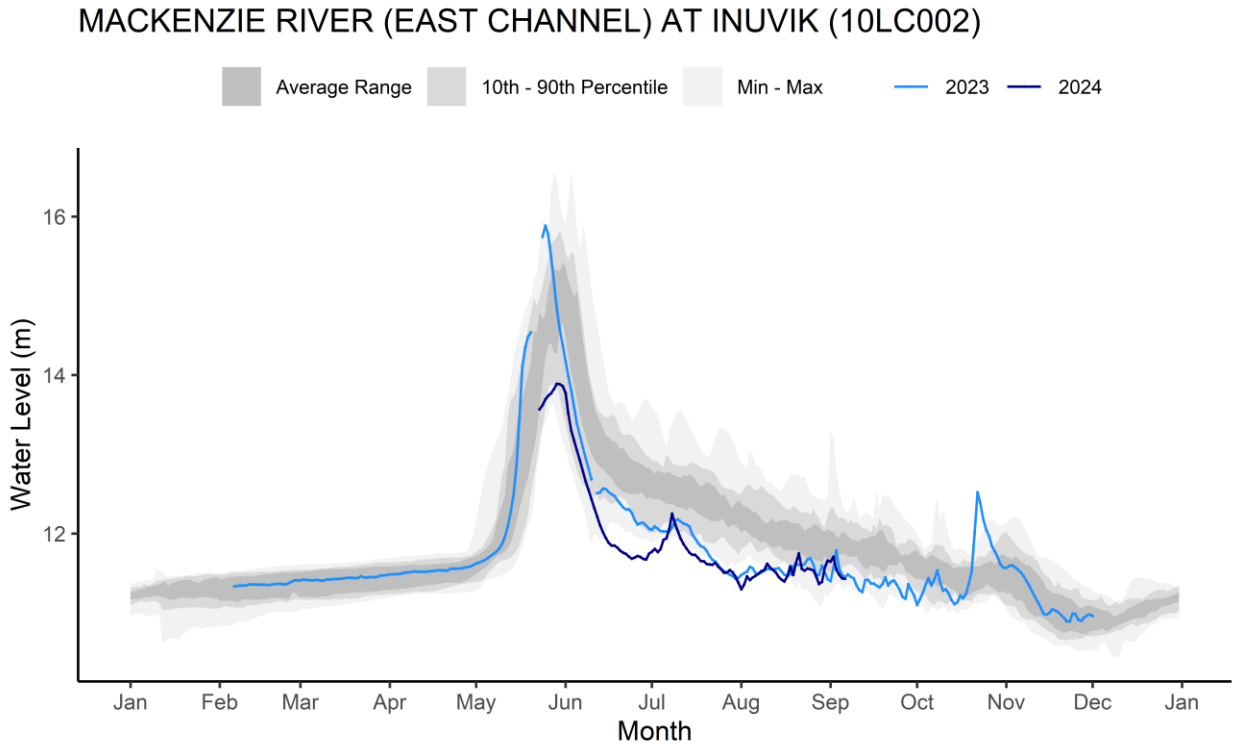
Peel River above Fort McPherson [10MC002]



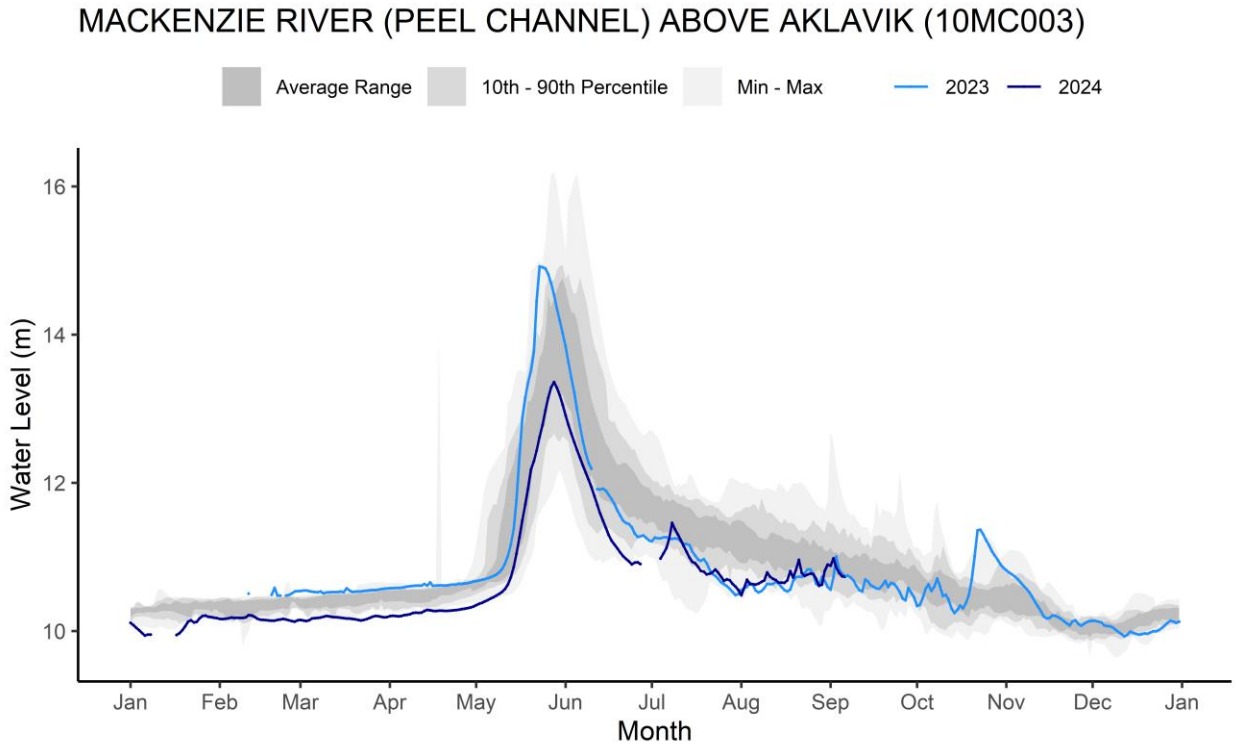
Mackenzie River at Arctic Red River [10LC014]



Mackenzie River (East Channel) at Inuvik [10LC002]

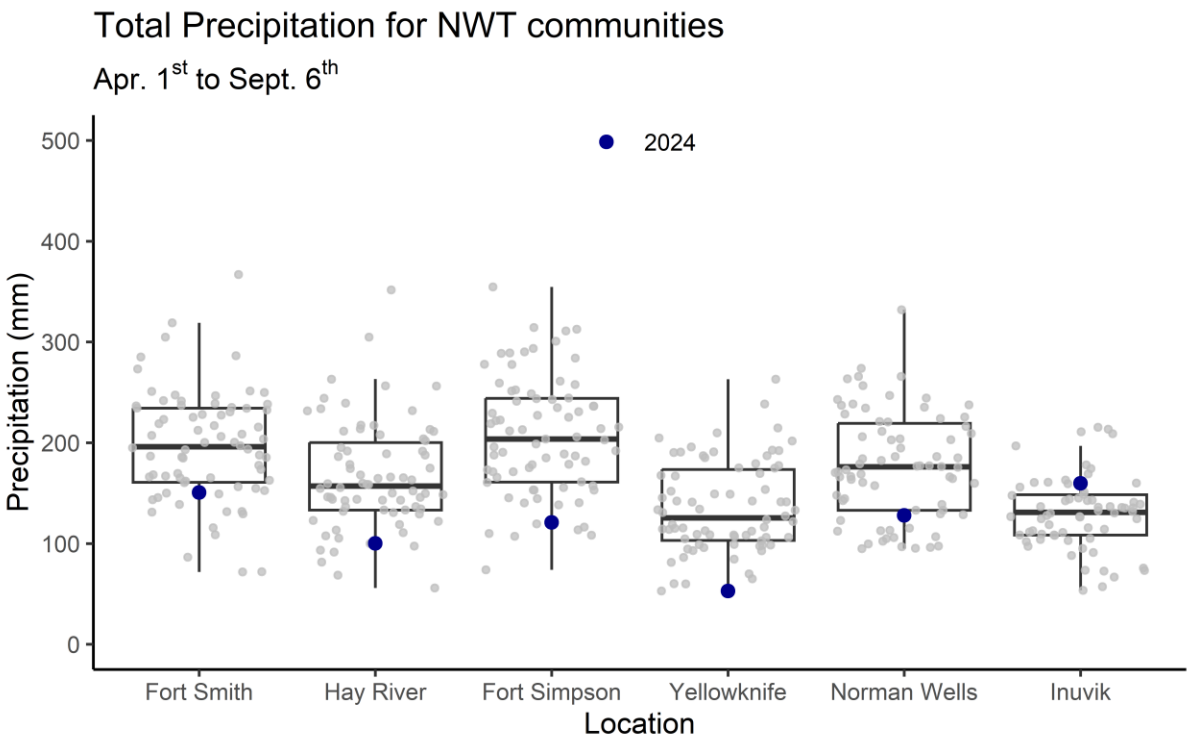


Mackenzie River (Peel Channel) above Aklavik [10MC003]



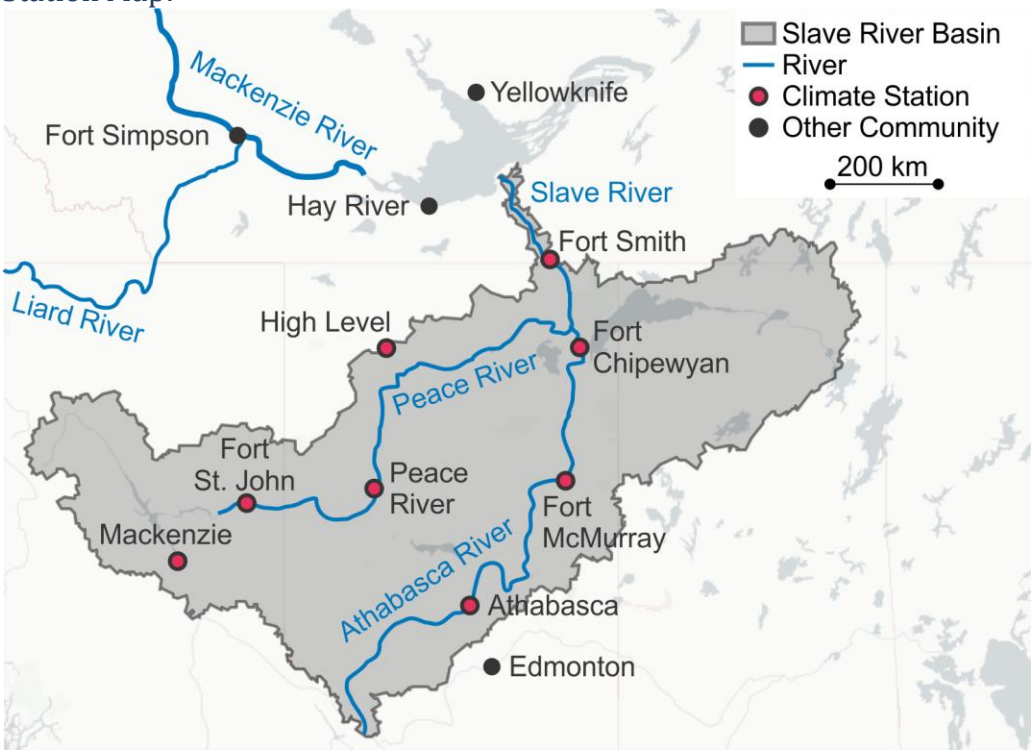
Climate Data:

Summary Data:



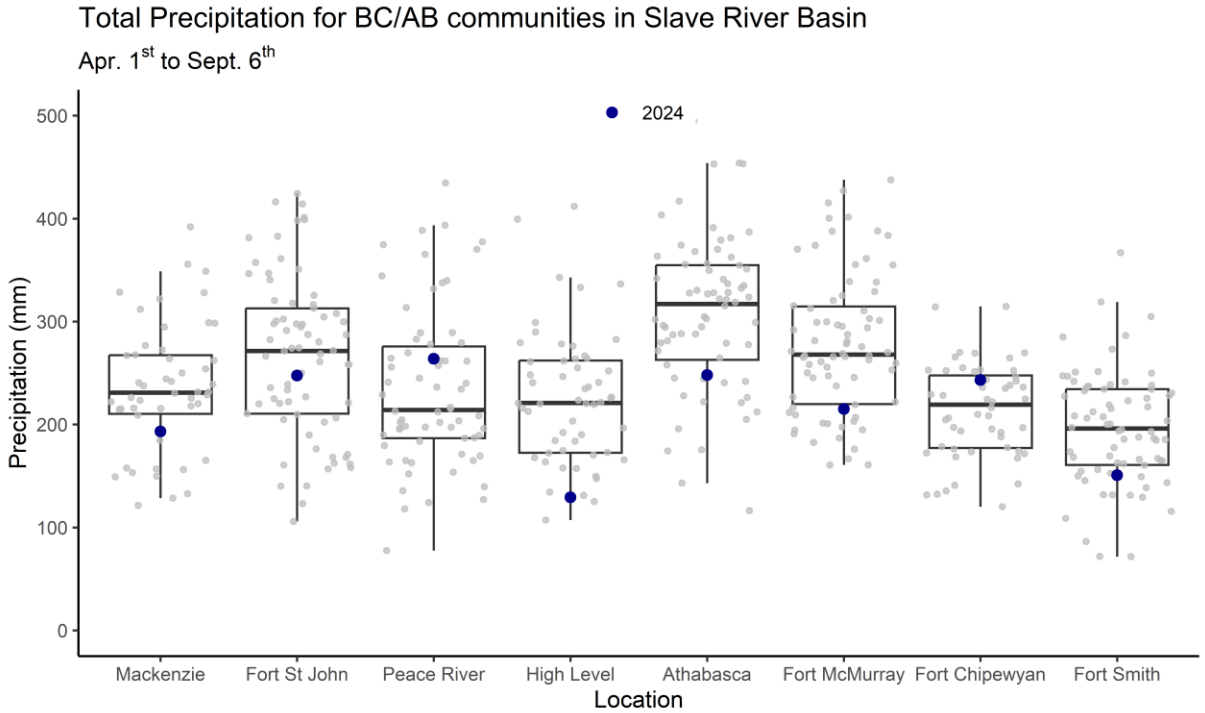
Precipitation in this figure shows the combined amount of rain and snow water equivalent (i.e., amount of water that results from when a snowpack is melted) that has fallen in select communities across the NWT. This figure shows precipitation from the start of April until September 6th. The blue dot is the current year, and the grey dots are all previous years from 1950 to present.

Station Map:



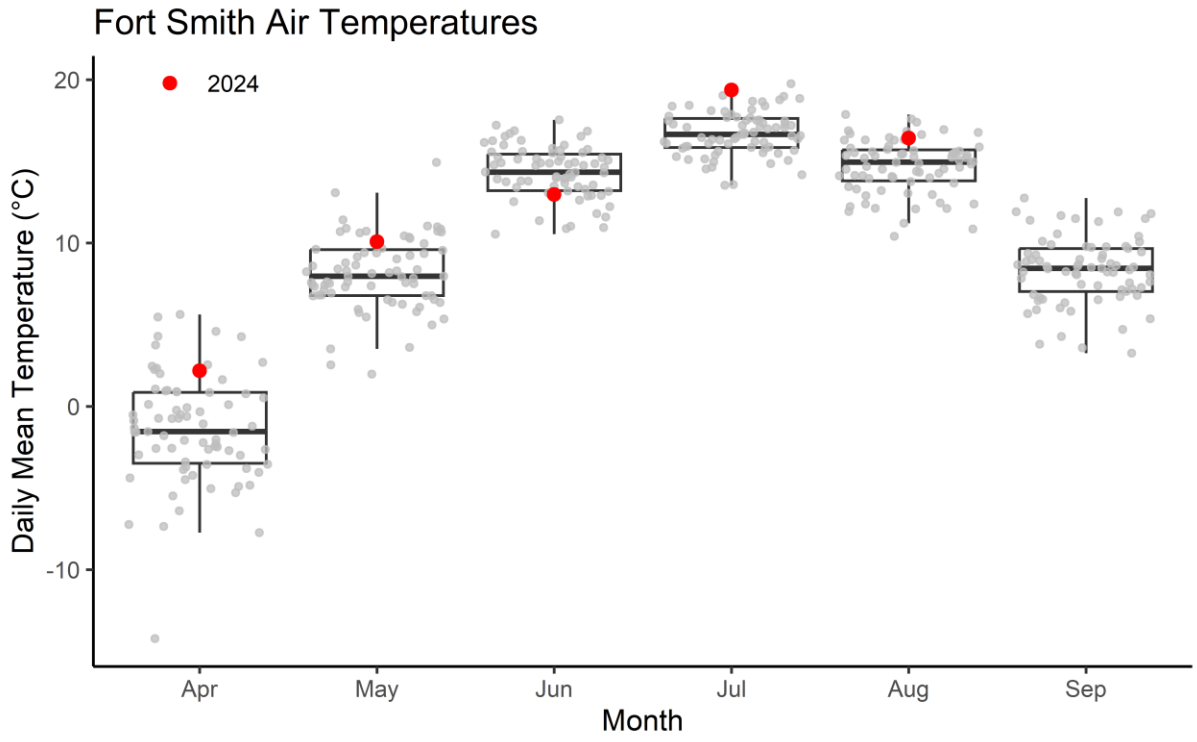
Map of the climate stations used to generate the cumulative precipitation plot below.

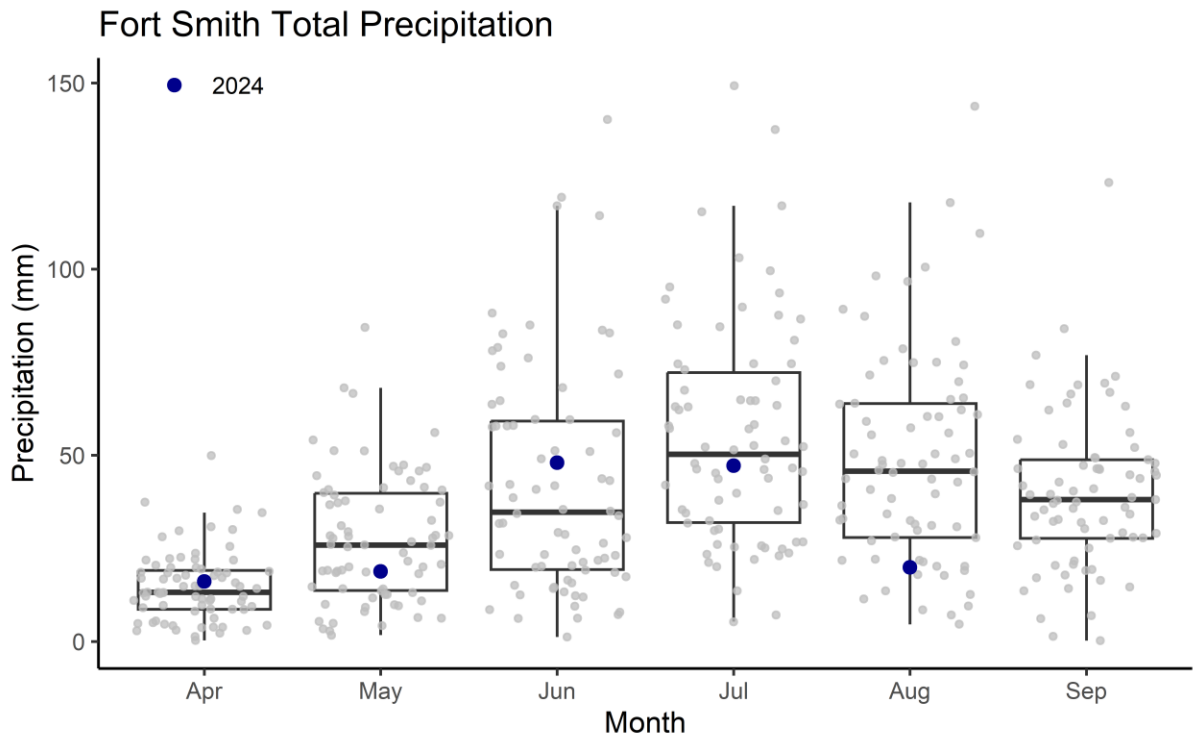
Summary Data:



Precipitation in this figure shows the combined amount of rain and snow water equivalent (i.e., amount of water that results from when a snowpack is melted) that has fallen in select communities in British Columbia and Alberta within the Great Slave Lake basin. This figure shows precipitation from the start of April until September 6th. The blue dot is the current year, and the grey dots are all previous years from 1950 to present.

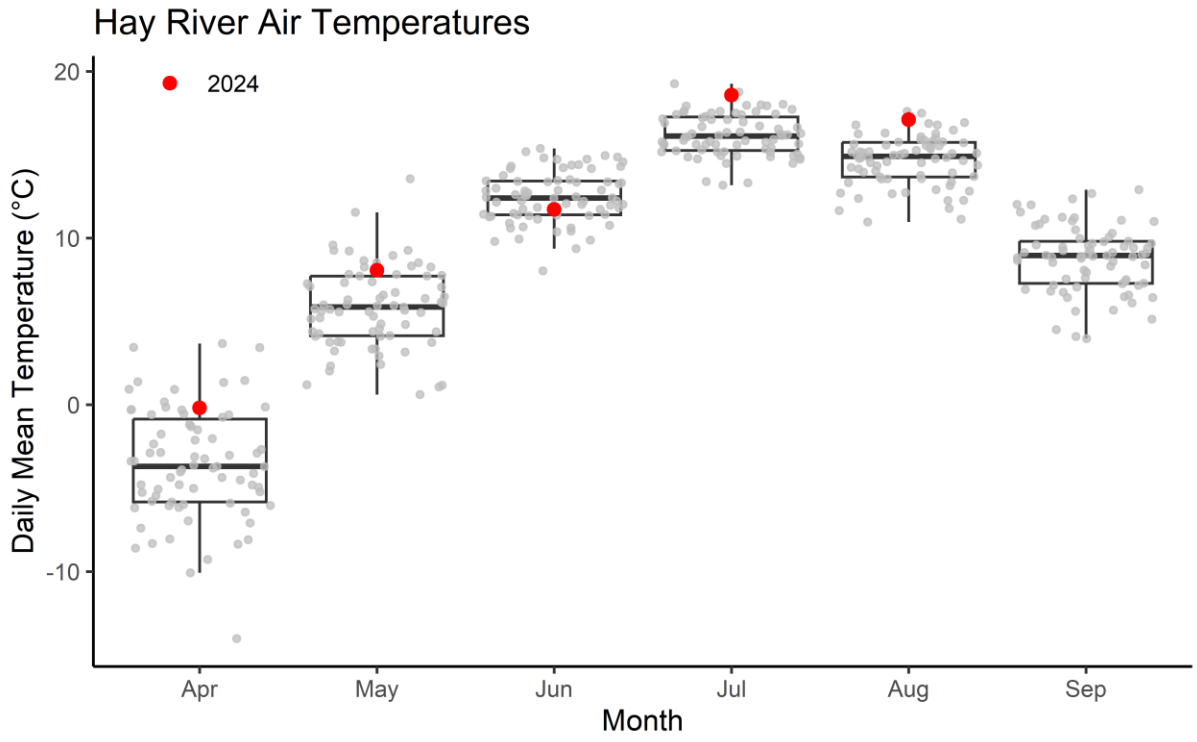
Fort Smith

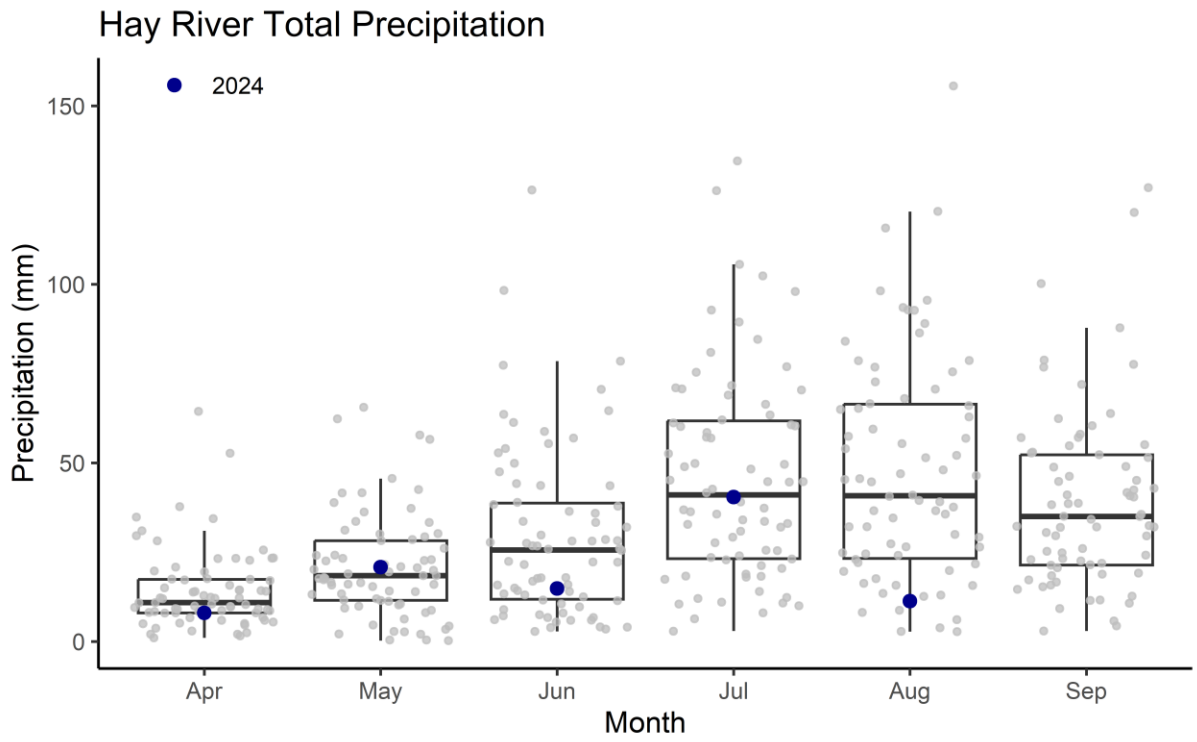




This figure shows mean monthly air temperature and total monthly precipitation for 2024.

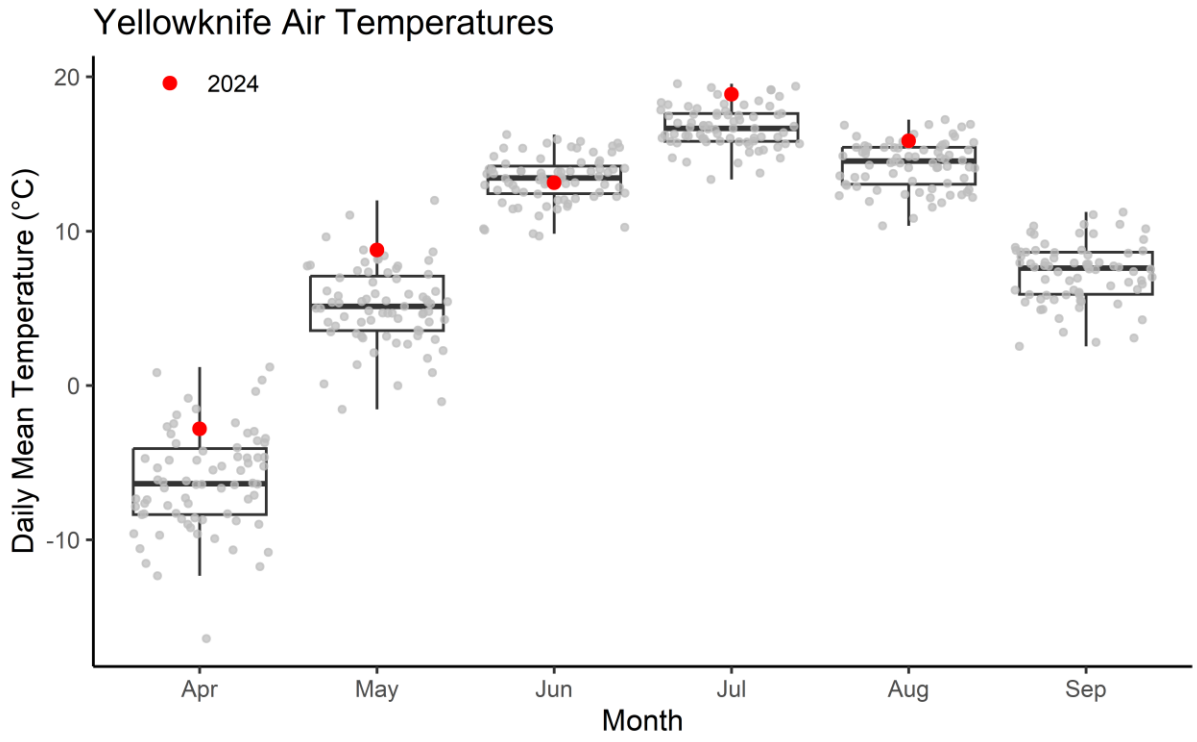
Hay River

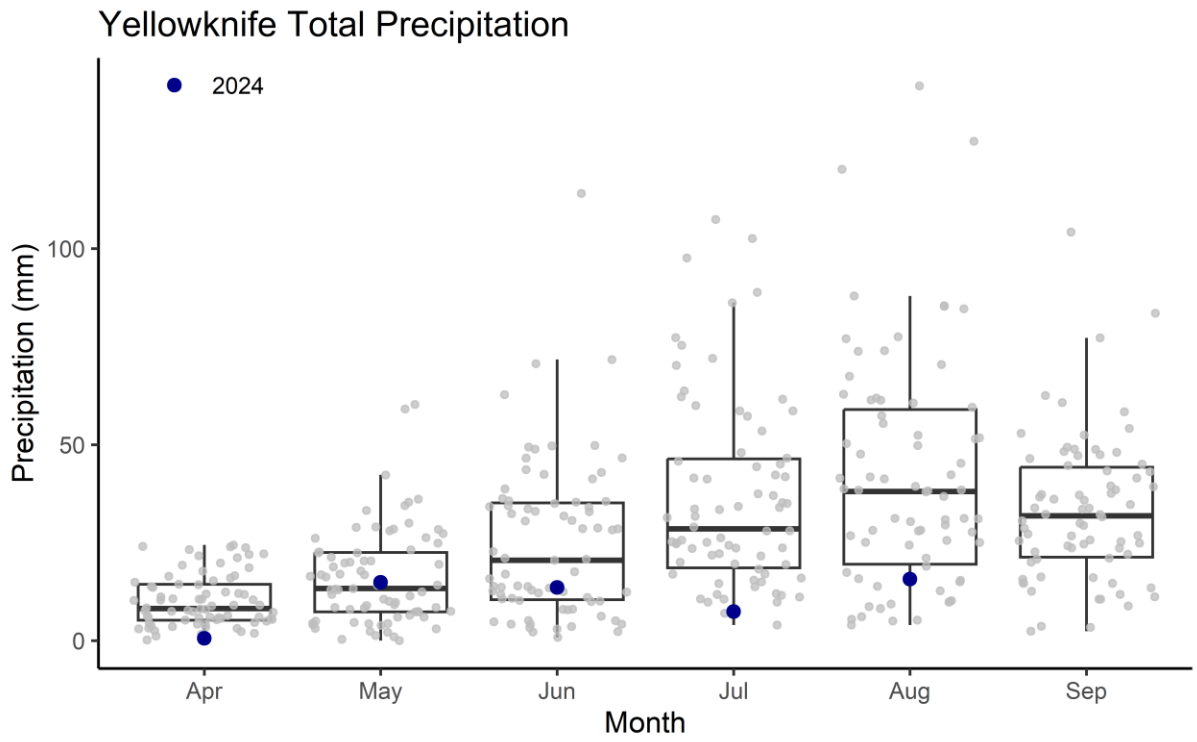




This figure shows mean monthly air temperature and total monthly precipitation for 2024.

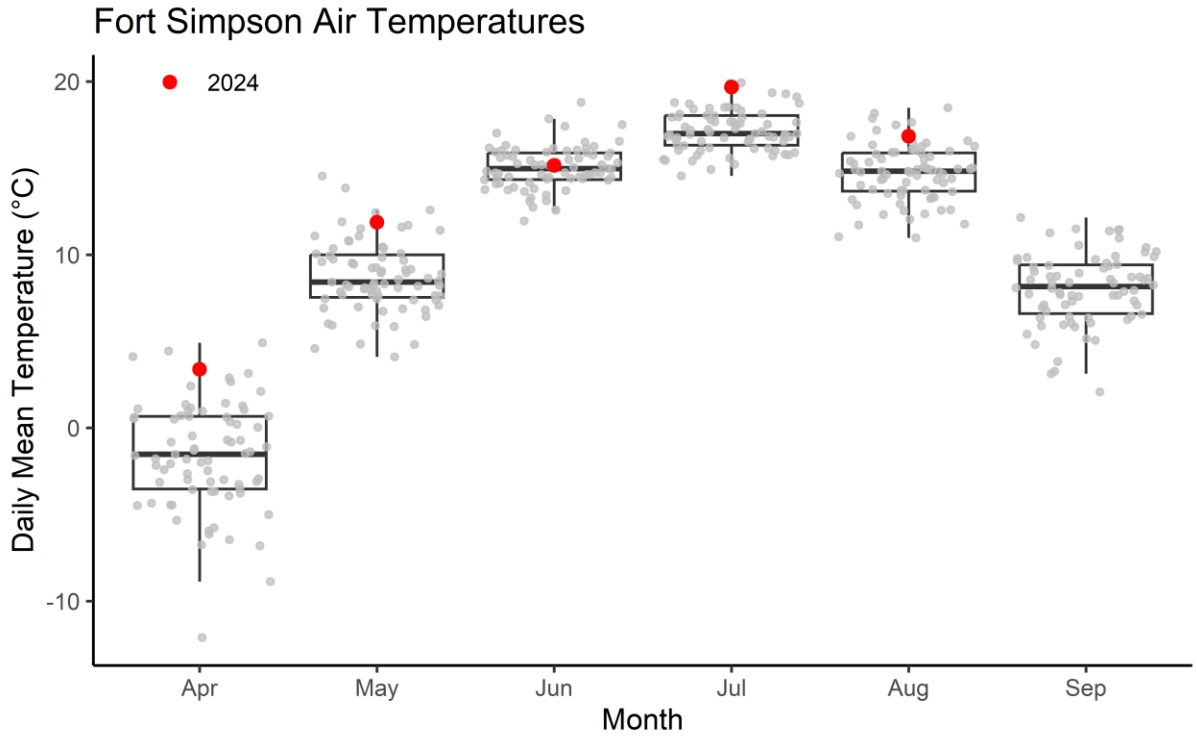
Yellowknife

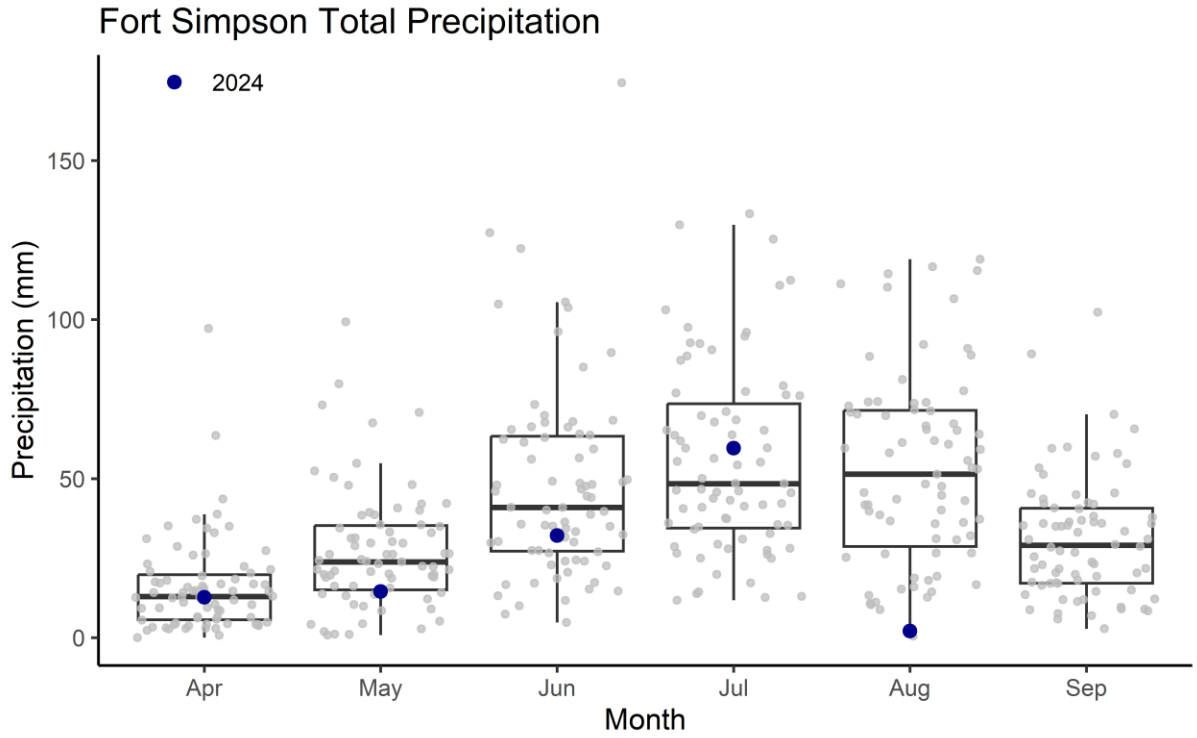




This figure shows mean monthly air temperature and total monthly precipitation for 2024.

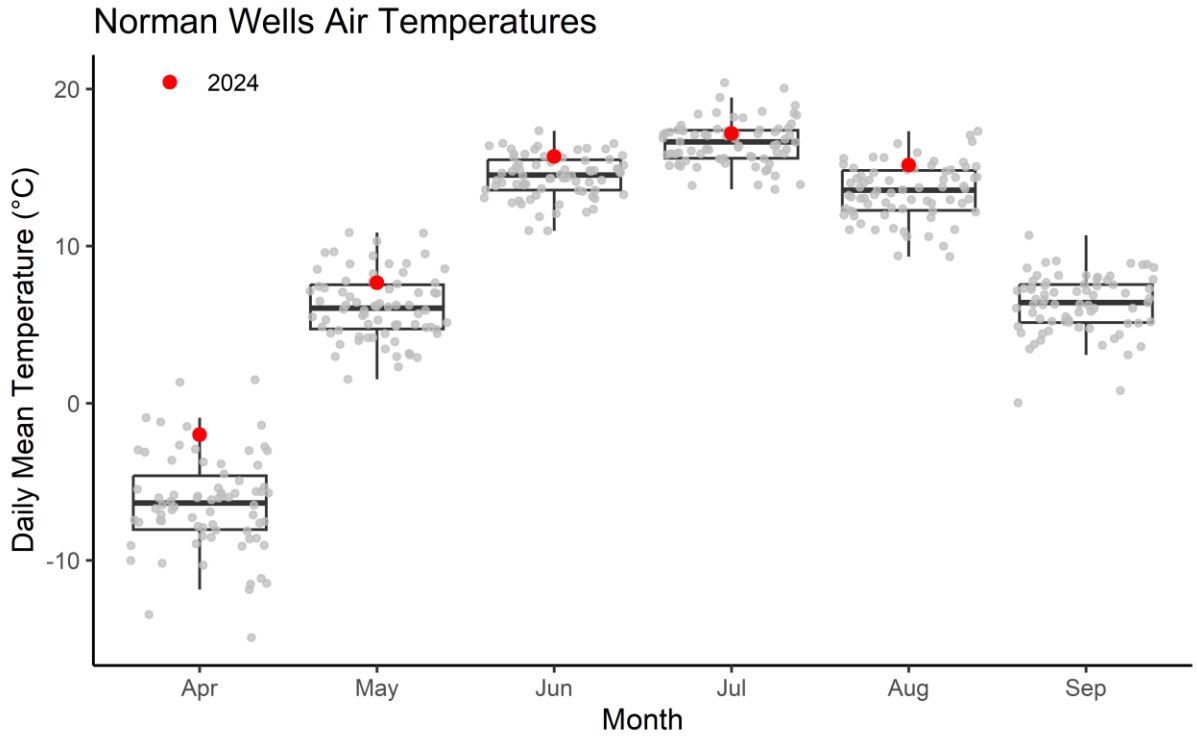
Fort Simpson

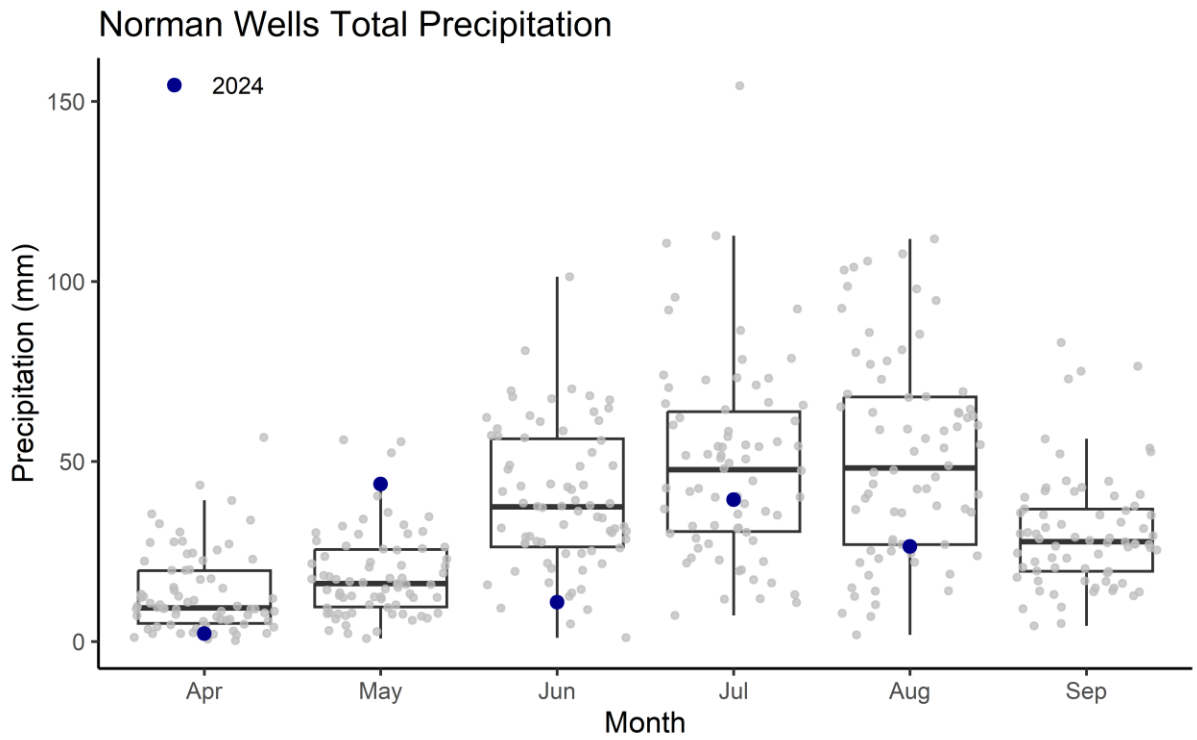




This figure shows mean monthly air temperature and total monthly precipitation for 2024.

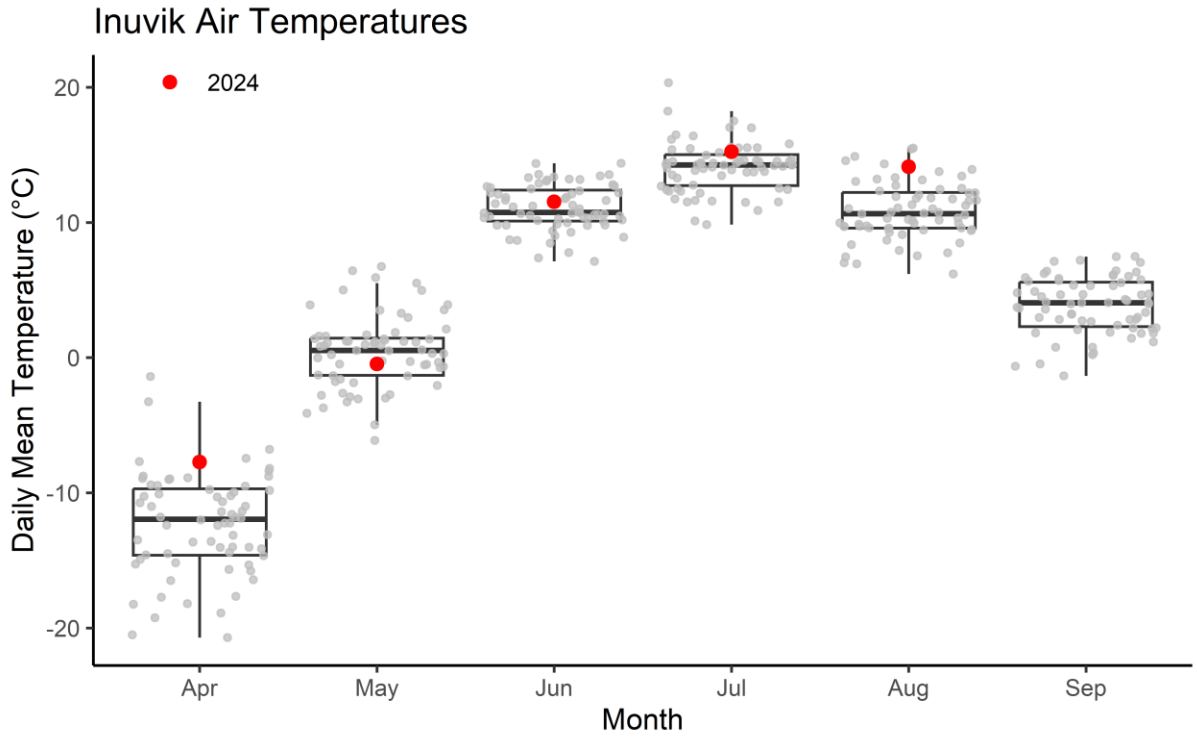
Norman Wells

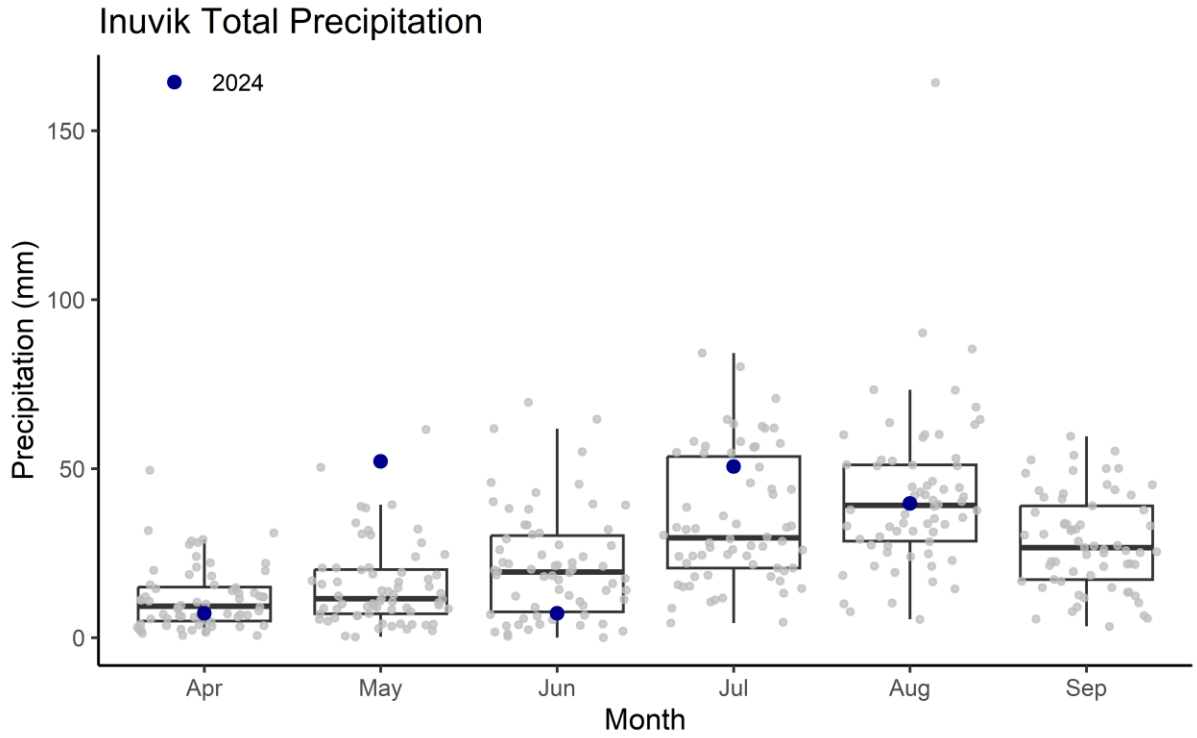




This figure shows mean monthly air temperature and total monthly precipitation for 2024.

Inuvik





This figure shows mean monthly air temperature and total monthly precipitation for 2024.