Government of
Northwest Territories

NWT Water Monitoring Bulletin – Dec 09, 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 (10^{th} to 90^{th} 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:

- Early winter water levels and flow rates remain very low across most of the NWT and in many instances are similar to those recorded last year at this time. Ice and freeze up dynamics may cause spikes or gaps in water level and flow values which may be seen in some of the figures in this report.
    - Great Slave Lake remains at its lowest water level recorded for this time of year and is equivalent to the level recorded at this time last year.
    - Flow rates on the Slave River this November were approximately average for this time year.
        - Cumulative flows on the Slave River for the year (i.e. adding up all the water that has moved through the river) are very low, but flow rates increased to average in November.
        - This was due to the higher-than-normal fall precipitation in the headwaters of the Peace River basin (northern British Columbia).
    - Flow rates on the Hay River are well below average for this time of year.
    - Flow rates on the Liard River are at their lowest recorded value for this time of year.
    - Flow rates at most locations along the Mackenzie River are well below average for this time of year.
    - Great Bear Lake reached the lowest level on record in November and flow rates on the Great Bear River are well below normal for this time of year.
    - Some rivers in the NWT have started to rebound from record low conditions in areas to the north and east of Great Slave Lake. Specific examples include:
        - Snare River (tributary to the North Arm of Great Slave Lake):
            - Flow rates were the lowest on record for much of 2023 and early 2024 and are currently at the low end of average for this time of year.
        - Lockhart River (tributary to the East Arm of Great Slave Lake):
            - Flow rates were the lowest on record in the fall and winter of 2023/24 and are currently average for this time of year.
        - Coppermine River (drains northeastern NWT and flows into the Arctic Ocean at Kugluktuk):
            - Flow rates were the lowest on record in the summer of 2023 and are currently average 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.

- **November precipitation** across the NWT was generally below average, except Fort Smith, which received above average precipitation.

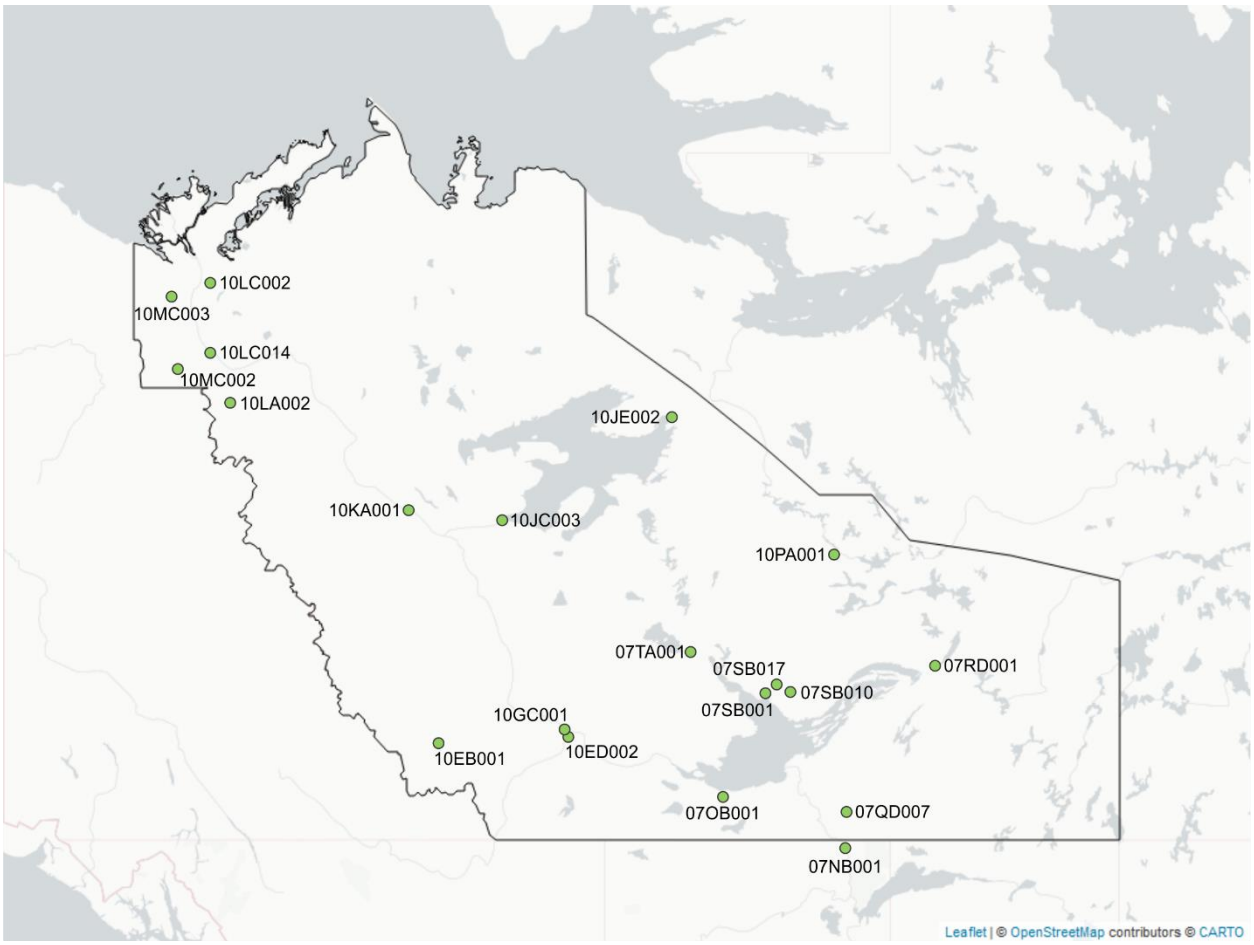
- **November temperatures** across the NWT were warmer than average for all communities except Fort Simpson and Norman Wells, where temperatures were approximately average.

- Water levels on Great Slave Lake and the Mackenzie River are strongly influenced by precipitation received in northern British Columbia, Alberta, Saskatchewan, and southern NWT.
    - Precipitation in the Great Slave Lake basin in northern British Columbia and Alberta has been approximately average this fall (Oct 01 to present), with some variability between communities.
        - Located near the headwaters of the Peace River, the community of Mackenzie, British Columbia has received record high cumulative precipitation this fall.
            - This region (the mountainous headwaters of the Peace River) usually receives the highest amount of precipitation in the Mackenzie River basin and is therefore an important contributor to water levels on Great Slave Lake and the Mackenzie River.

- Climate forecasts from Environment and Climate Change Canada (ECCC) for the next three months (Dec, Jan, Feb) indicate higher than normal precipitation for most of the NWT and the Mackenzie River basin.
    - The month of December has a high likelihood for above average snowfall in the NWT with an estimate of 5 to 25 mm more precipitation than normal (average precipitation values for December are usually between 15 to 25 mm in the NWT)
    - ECCC meteorologists have indicated that the strength of the La Niña system this winter will be weak and that the predicted above-average snowfall is likely not attributed to La Niña.

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: 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.

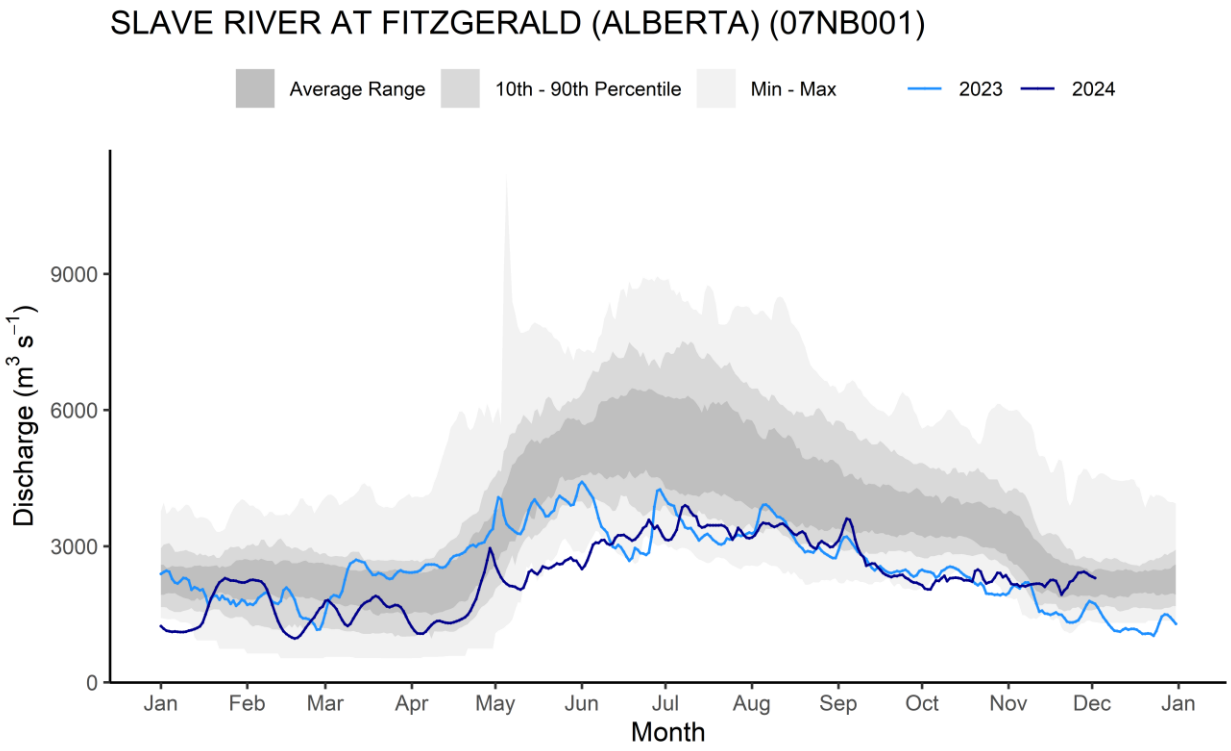
Note: The grey bands are calculated for data prior to 2023. If the line from 2023 or 2024 is above (or below) the grey band, it means that the water level or flow from that year was the highest (or lowest) on record.

Climate figures:

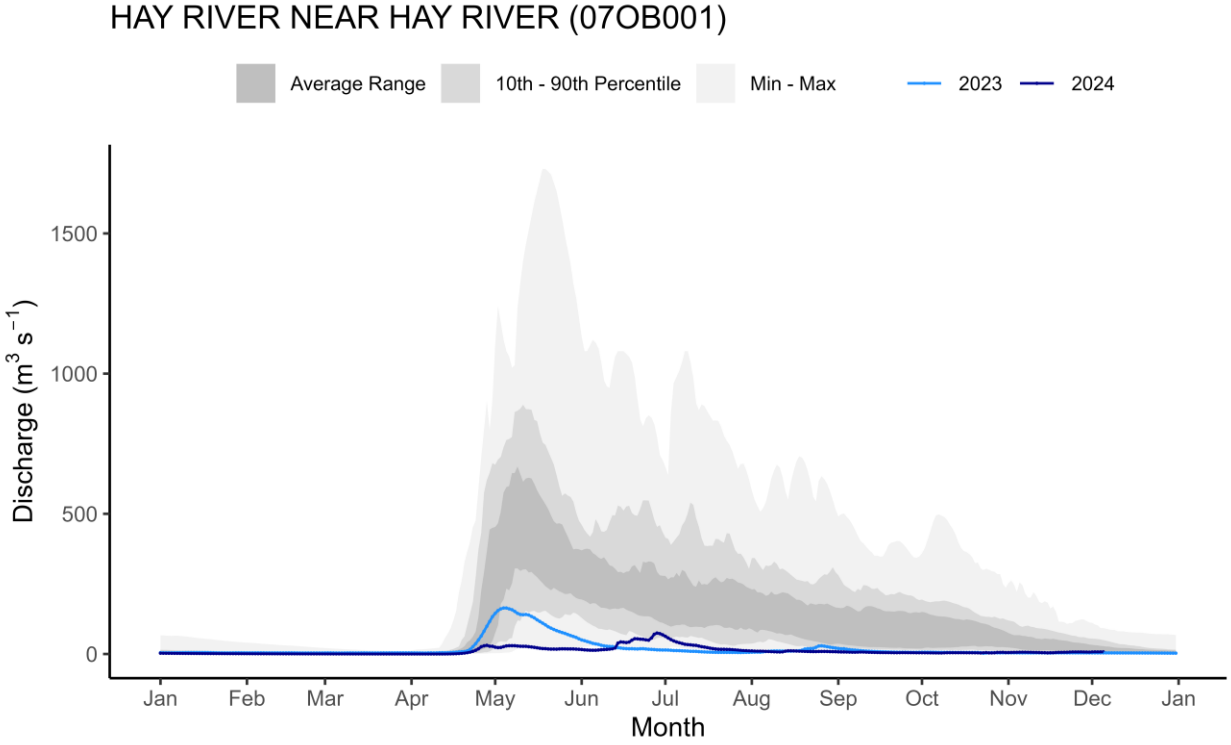
Monthly air temperature and precipitation data are displayed for six communities in the NWT (Fort Smith, Hay River, Yellowknife, Fort Simpson, Norman Wells, and Inuvik) and presented as box and whisker plots. The box in each plot represents the average range (calculated as the interquartile range) for 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:

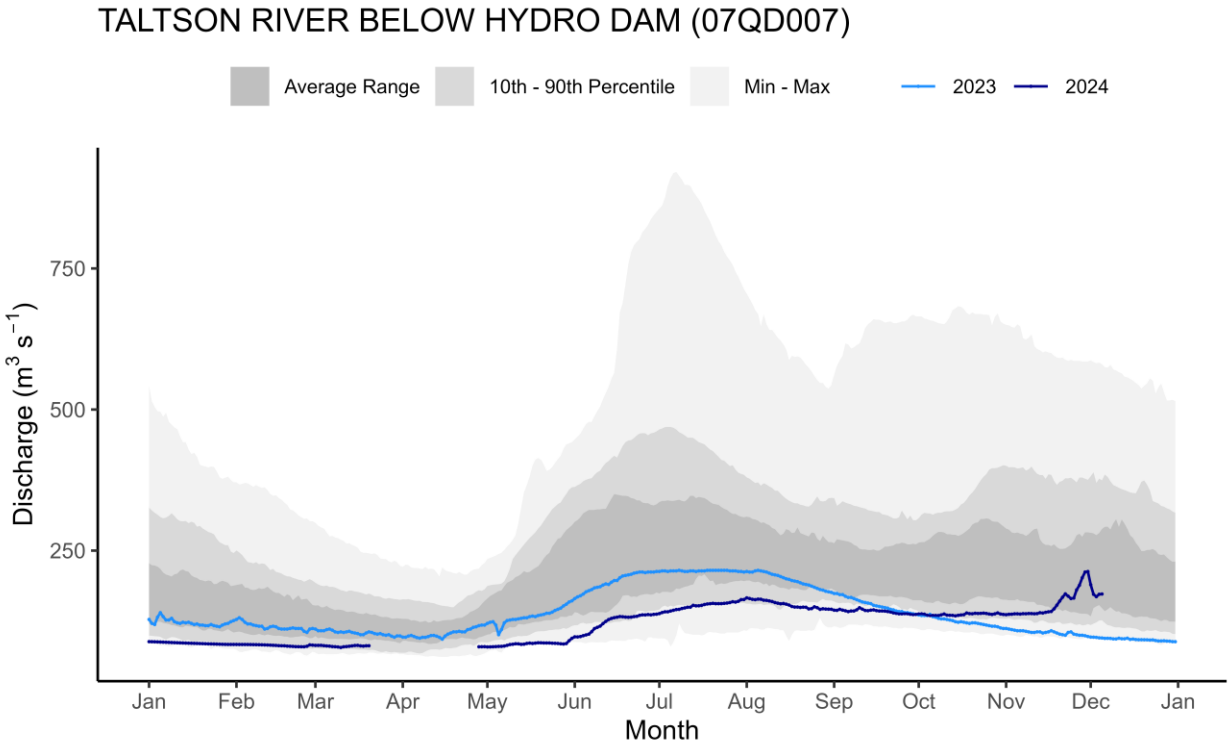
Slave River at Fitzgerald [07NB001]



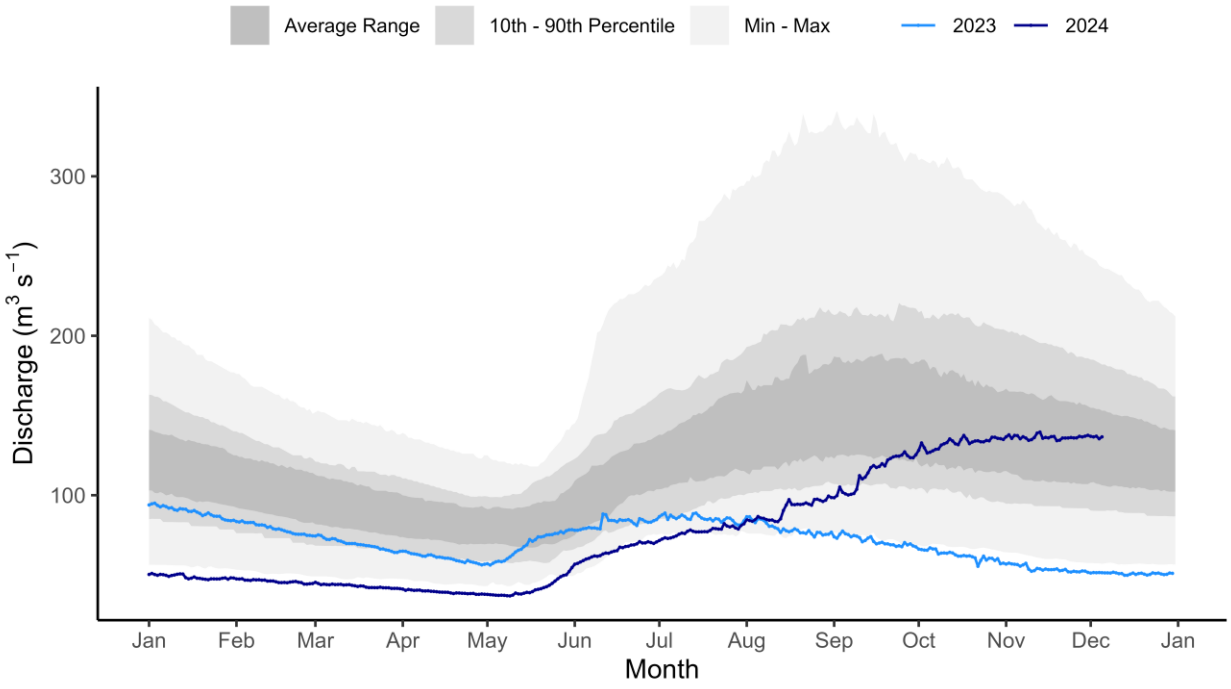
Hay River near Hay River [07OB001]



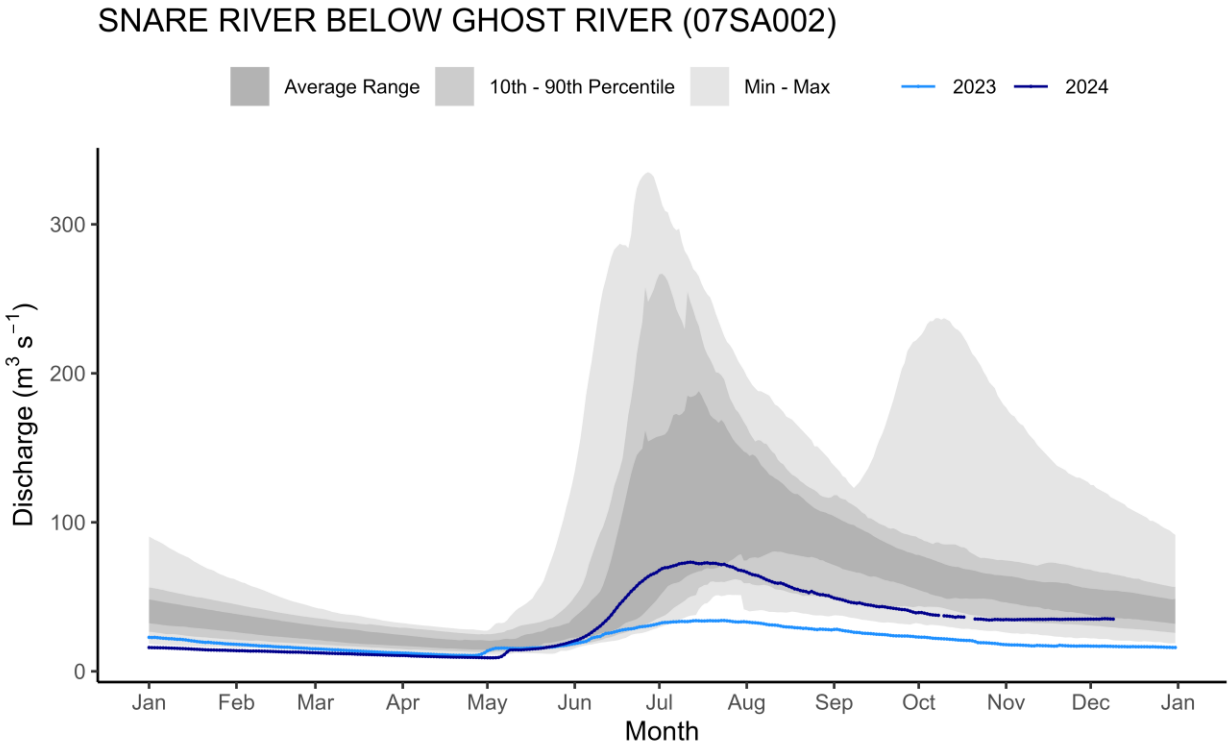
Taltson River below Hydro Dam [07QD007]



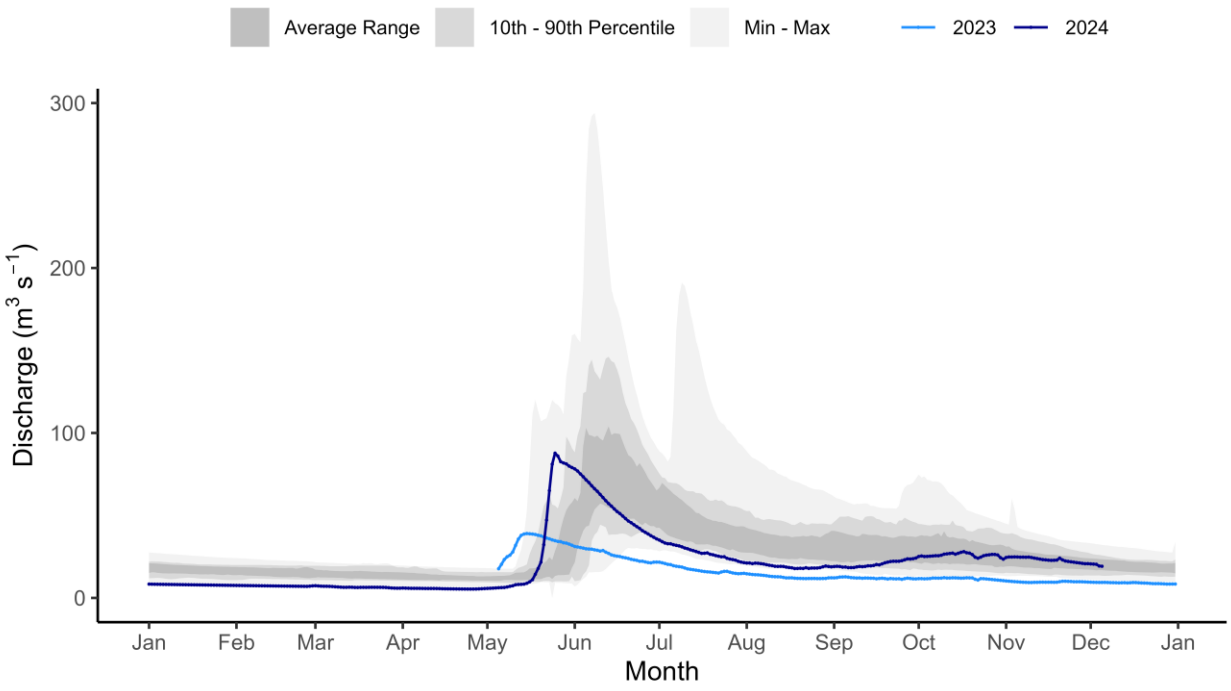
Lockhart River at outlet of Artillery Lake [07RD001]



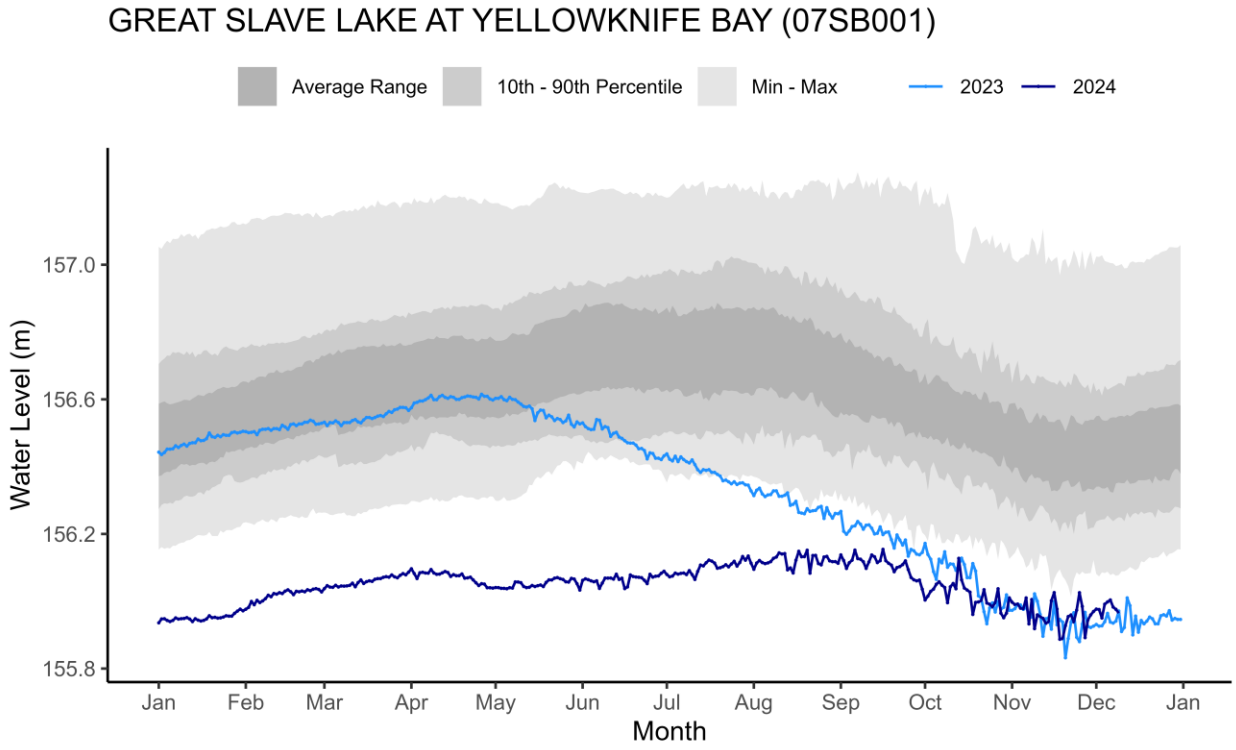
Snare River below Ghost Lake [07SA002]



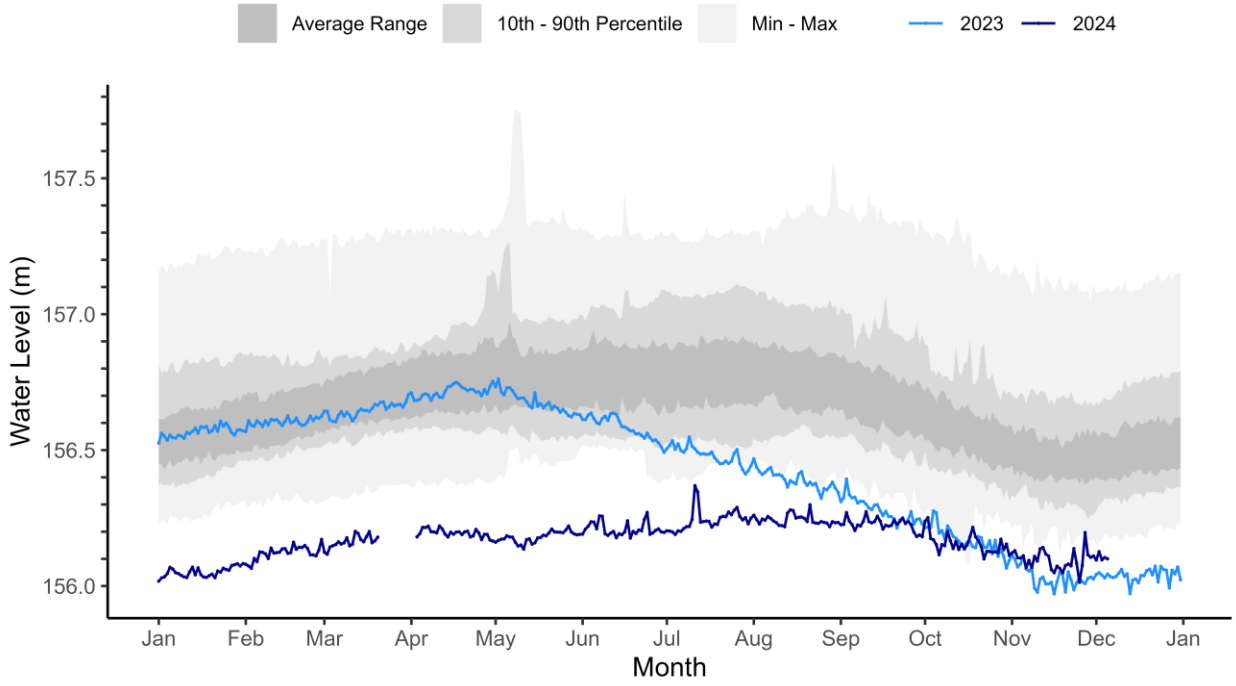
Coppermine River below Desteffany Lake [10PA001]



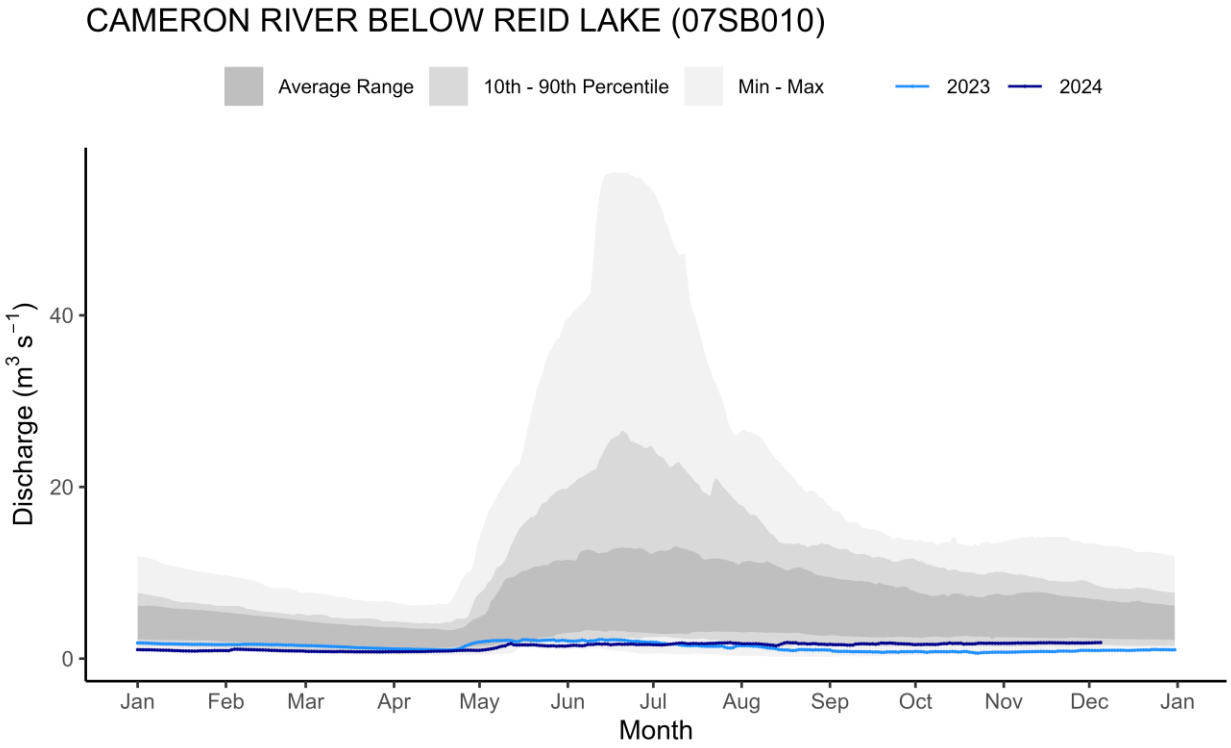
Great Slave Lake at Yellowknife Bay [07SB001]



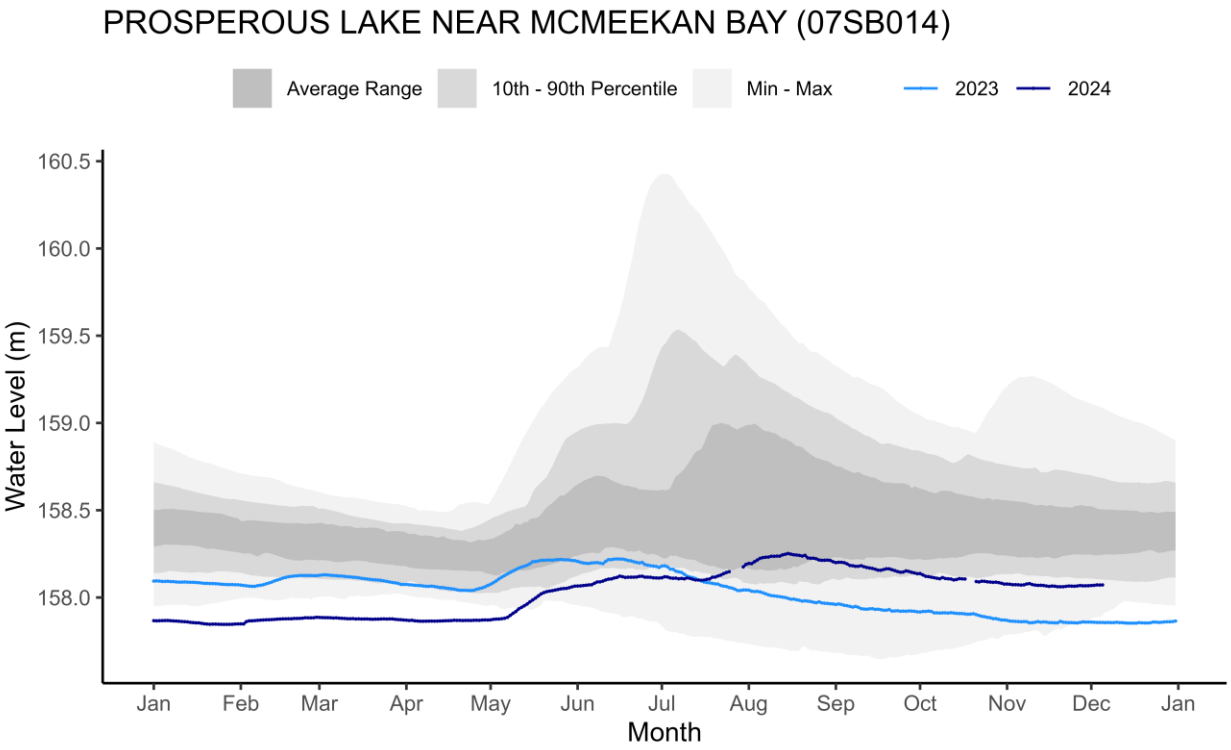
Great Slave Lake at Hay River [07OB002]



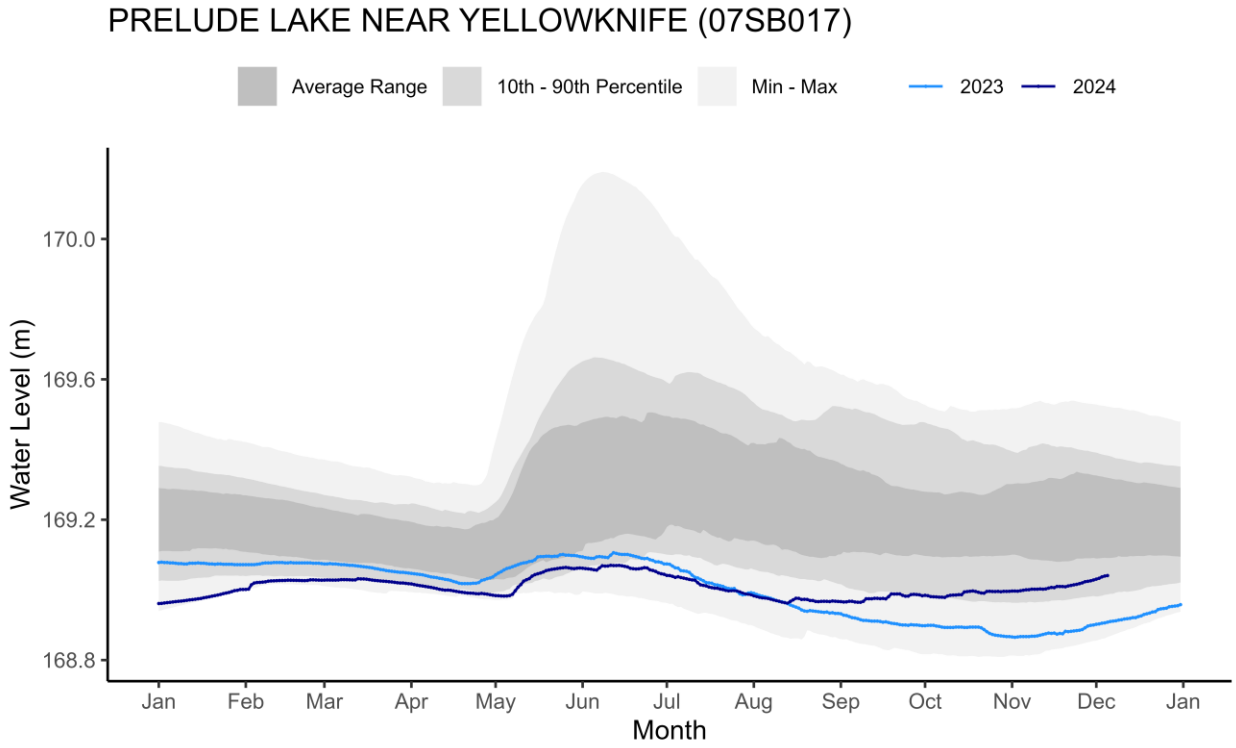
Cameron River below Reid Lake [07SB010]



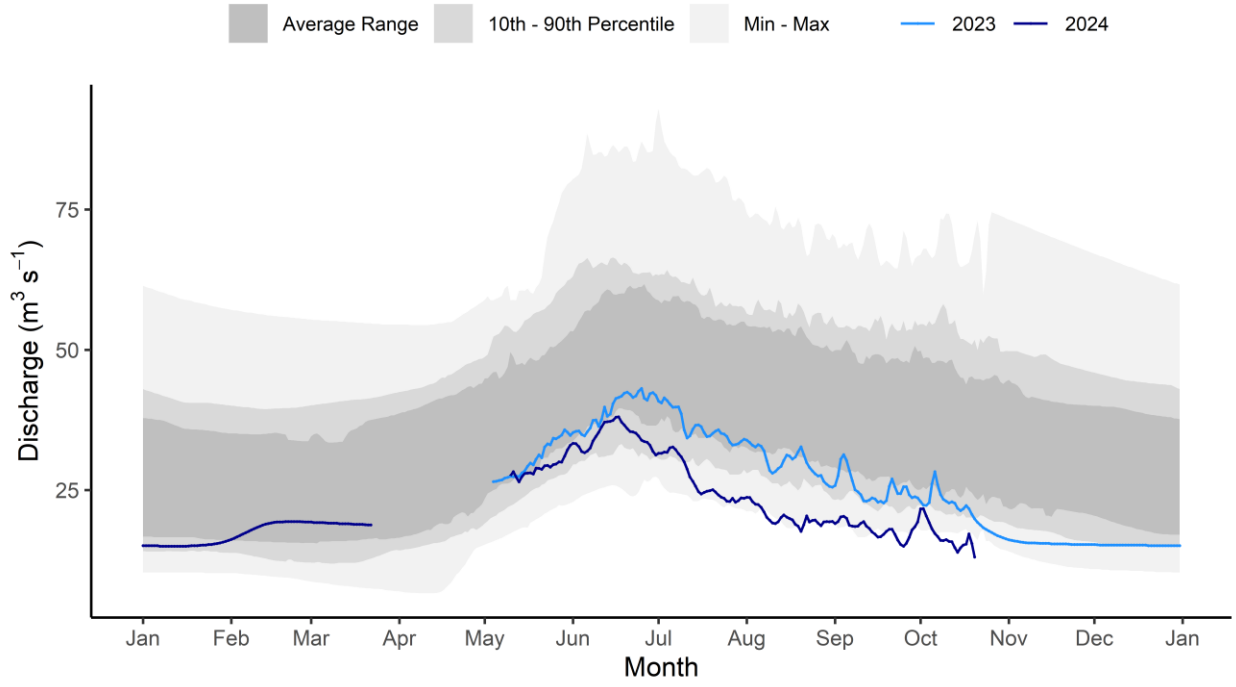
Prosperous Lake near McMeekan Bay [07SB014]



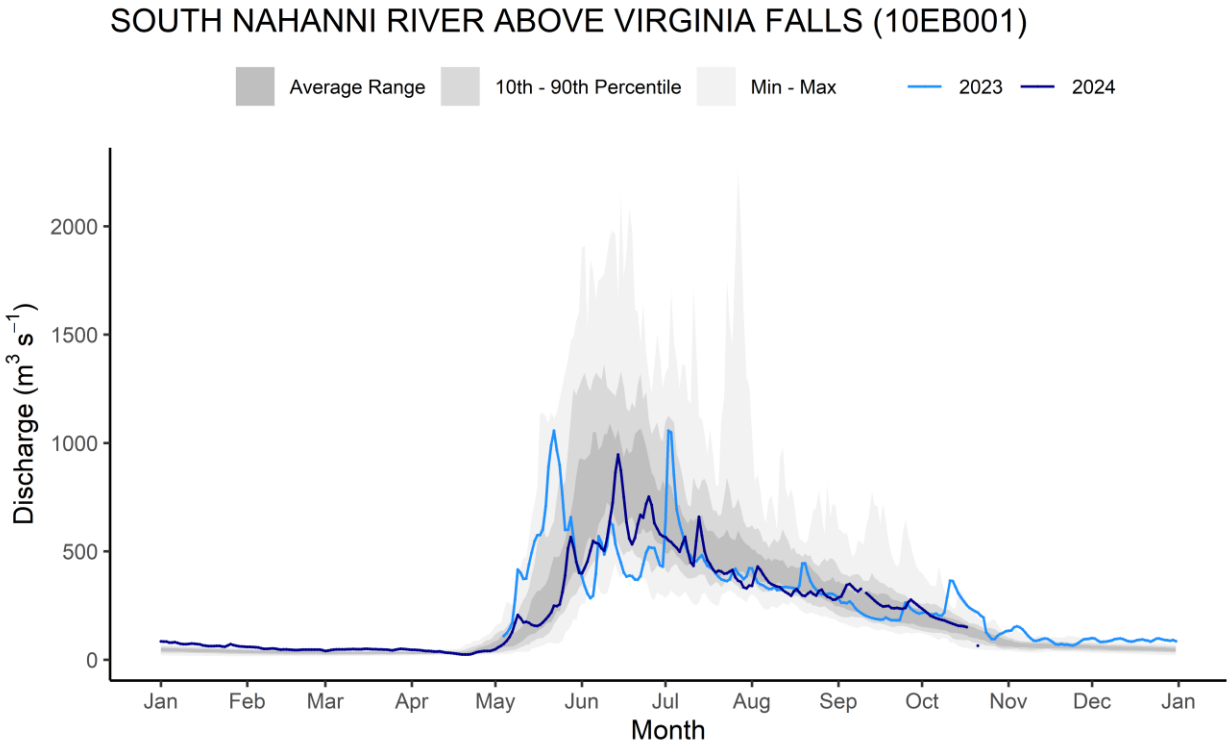
Prelude Lake near Yellowknife [07SB017]



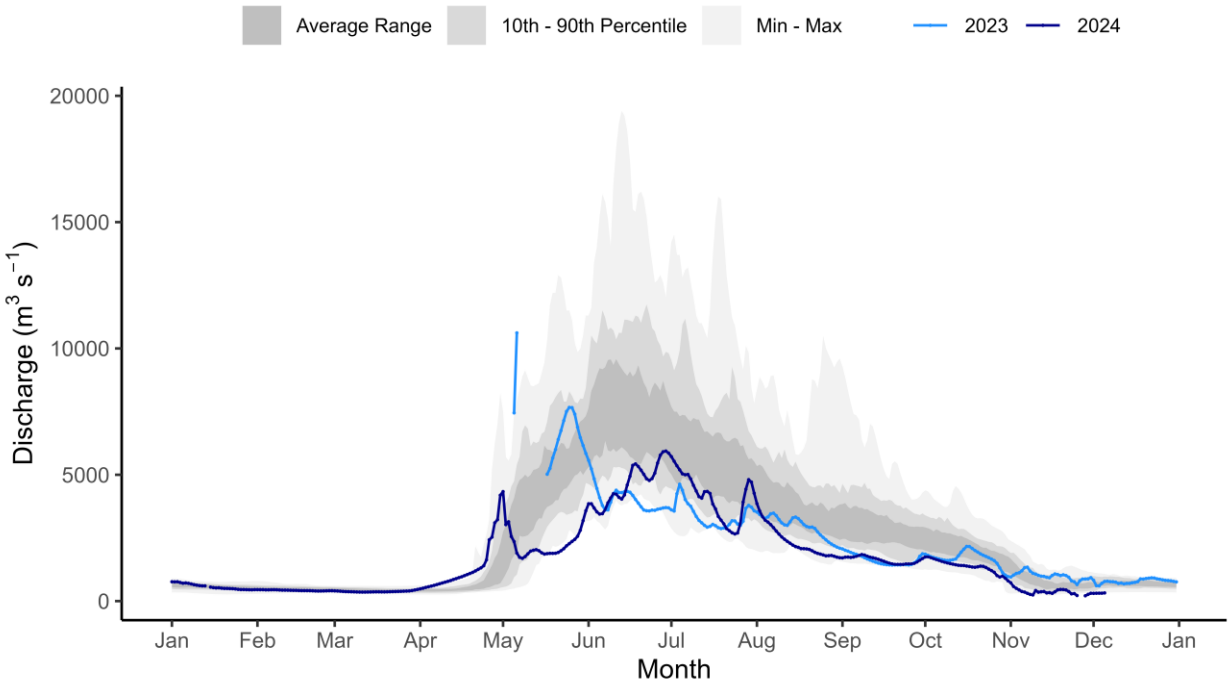
La Martre River below outlet of Lac La Martre [07TA001]



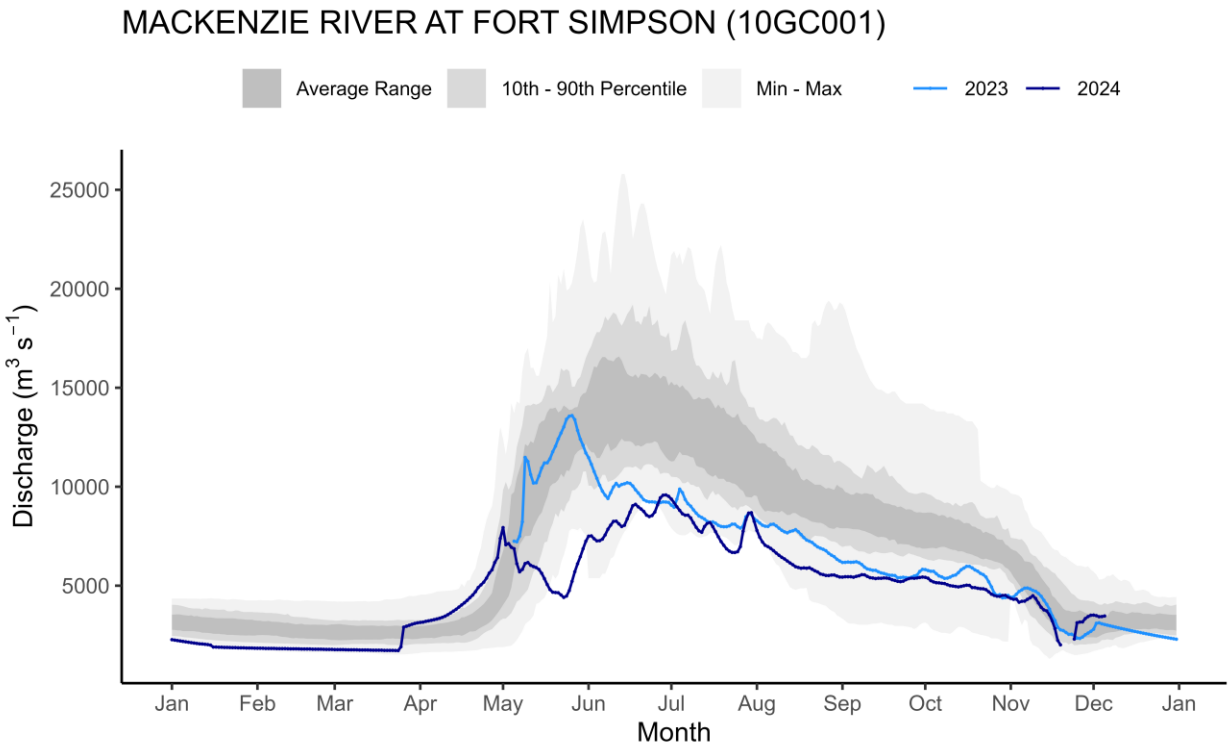
South Nahanni River above Virginia Falls [10EB001]



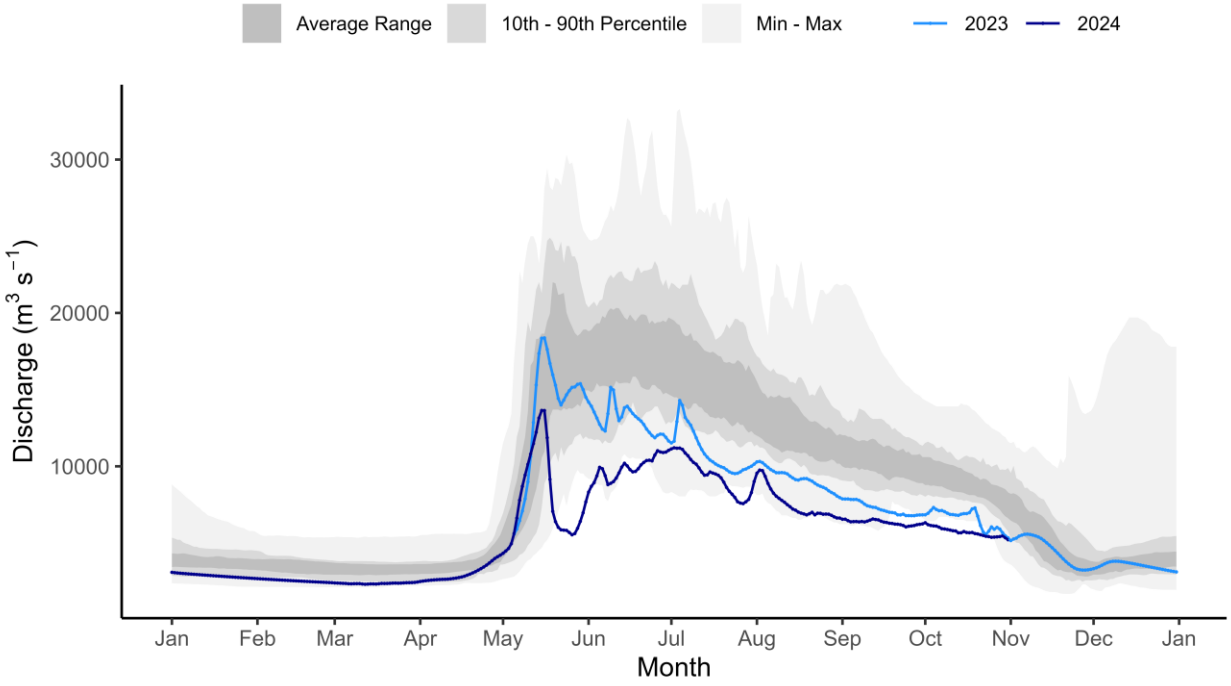
Liard River near the Mouth [10ED002]



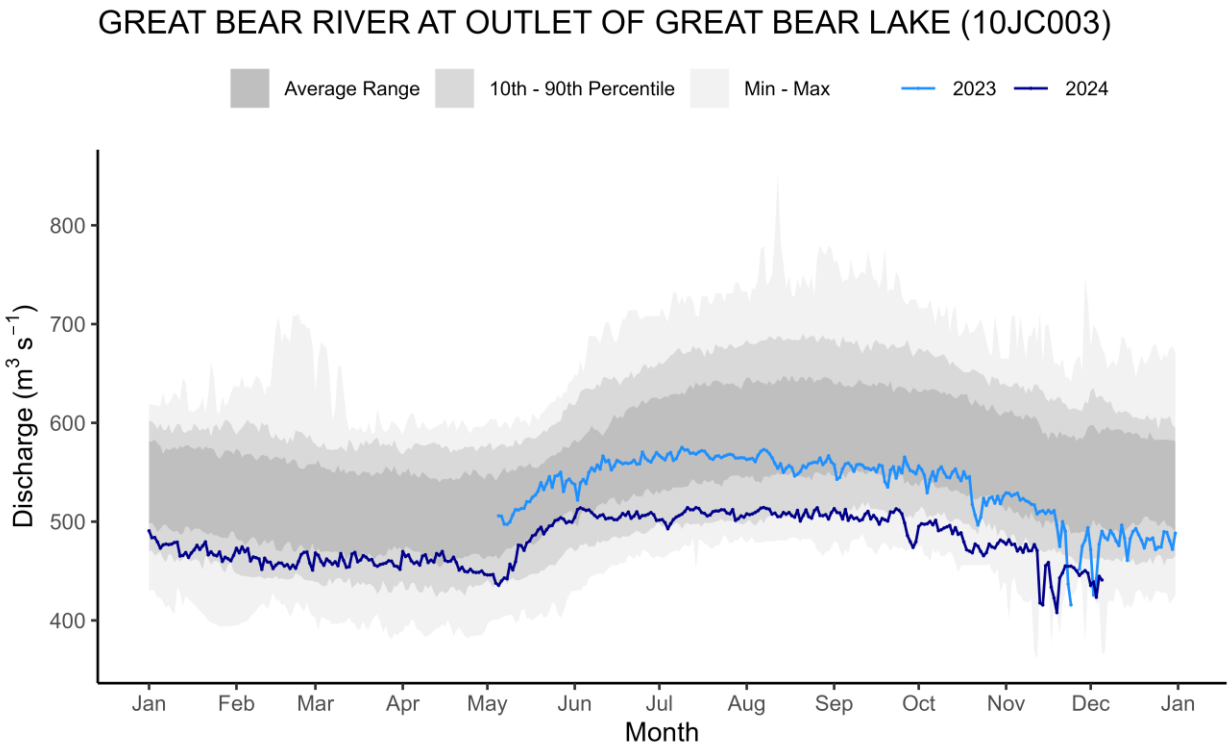
Mackenzie River at Fort Simpson [10GC001]



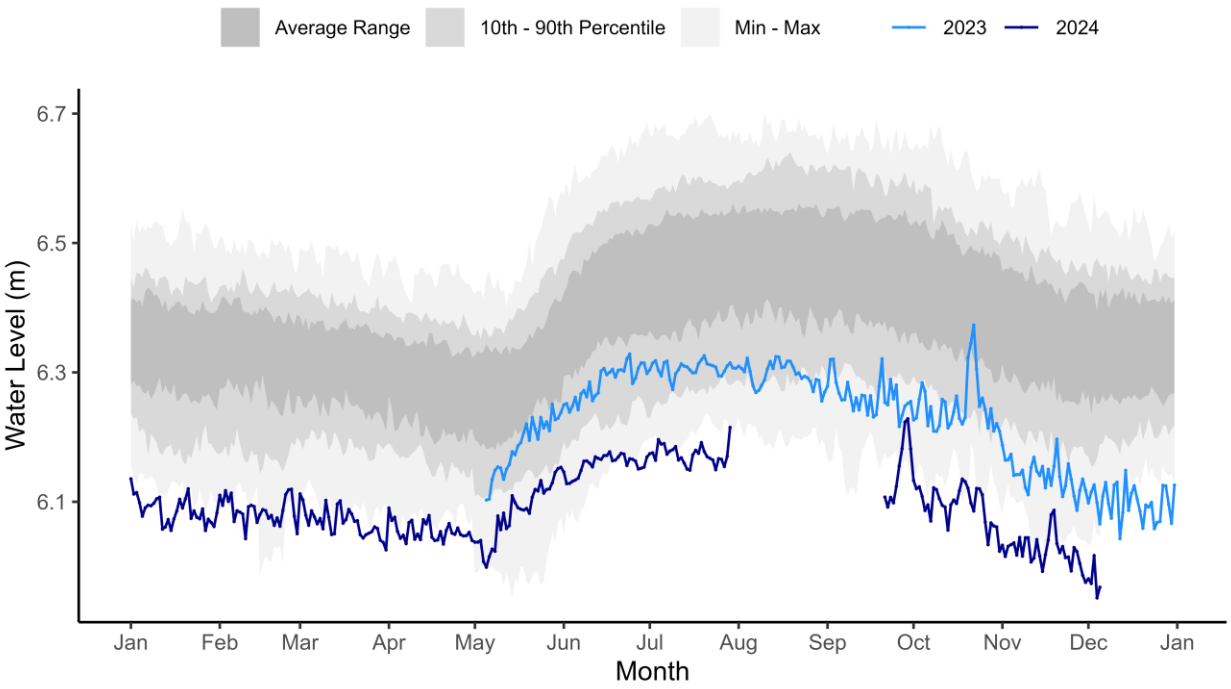
Mackenzie River at Norman Wells [10KA001]



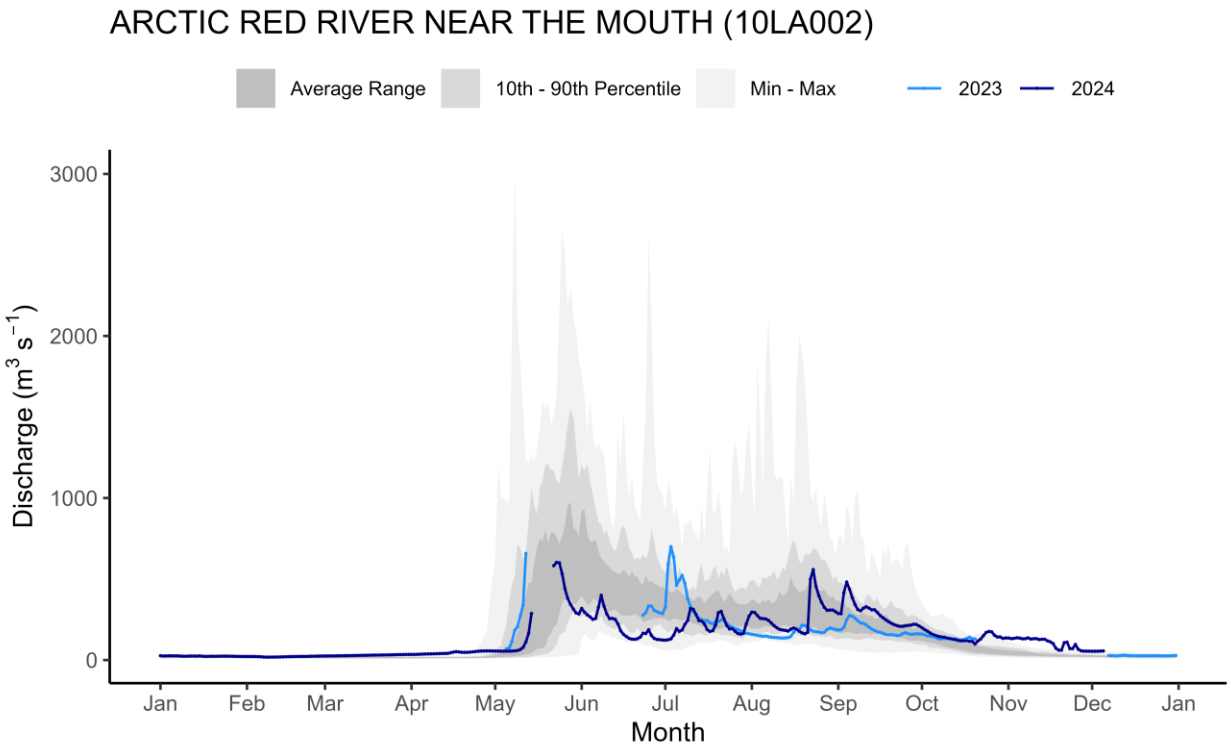
Great Bear River at outlet of Great Bear Lake [10JC003]



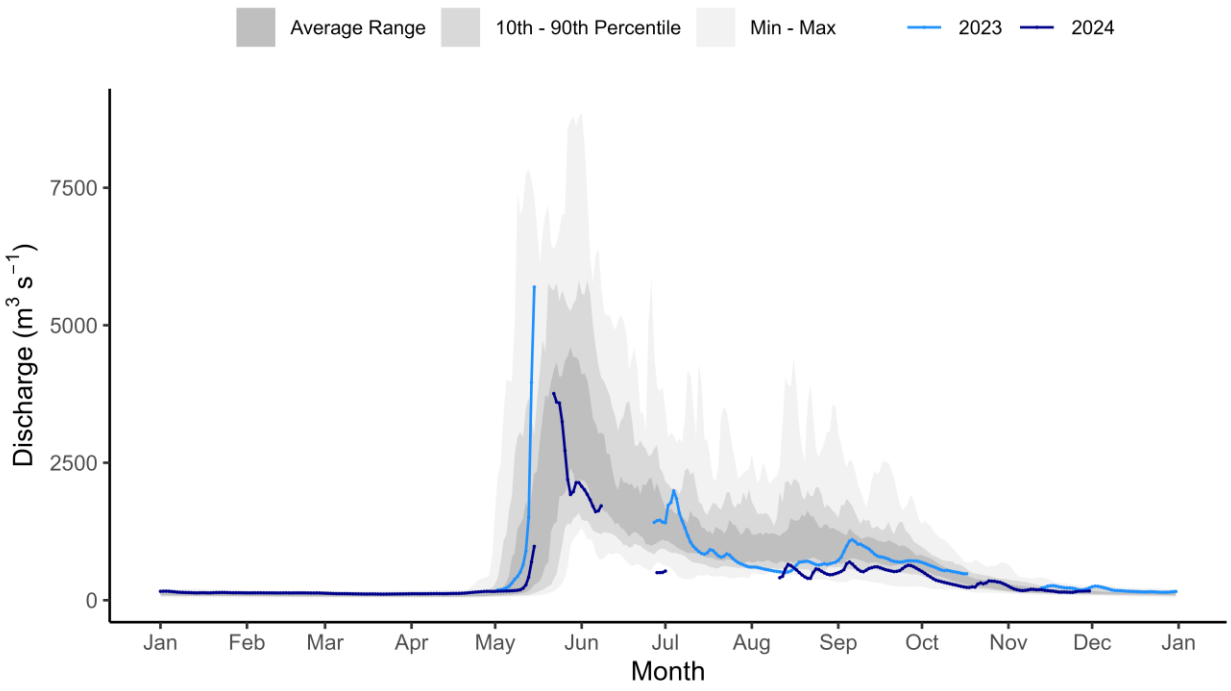
Great Bear Lake at Hornby Bay [10JE002]



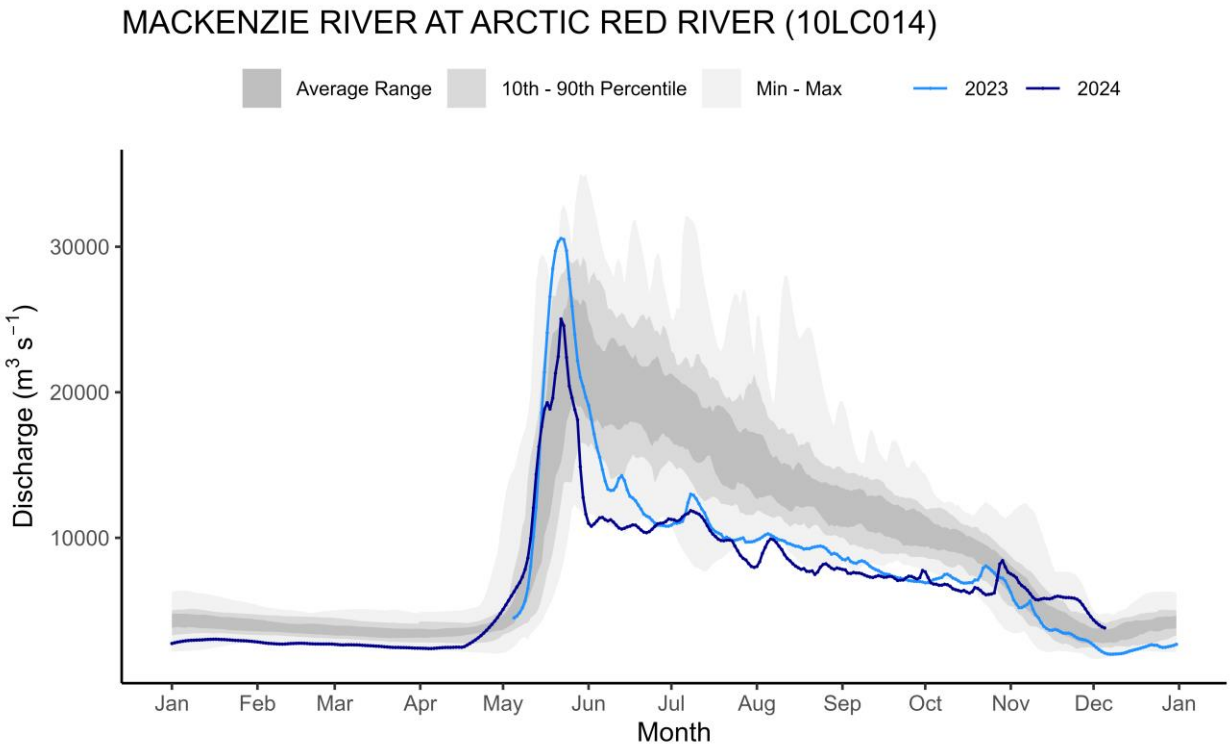
Arctic Red River near the mouth [10LA002]



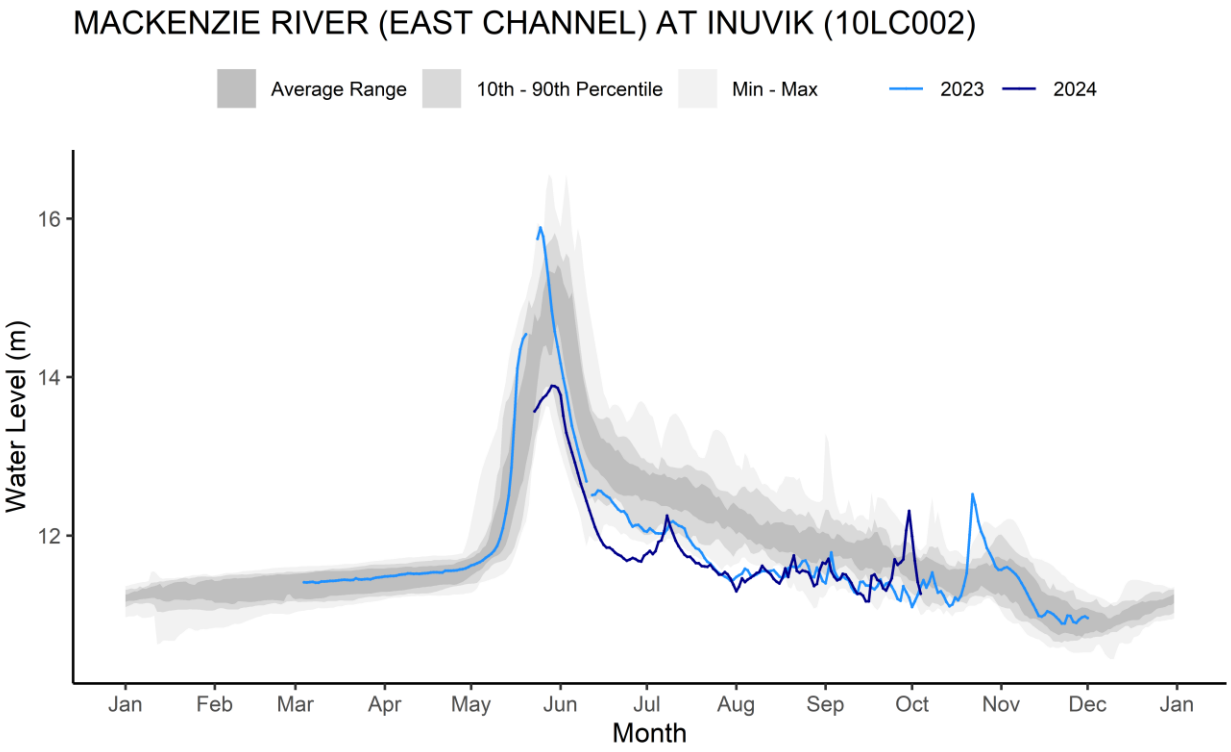
Peel River above Fort McPherson [10MC002]



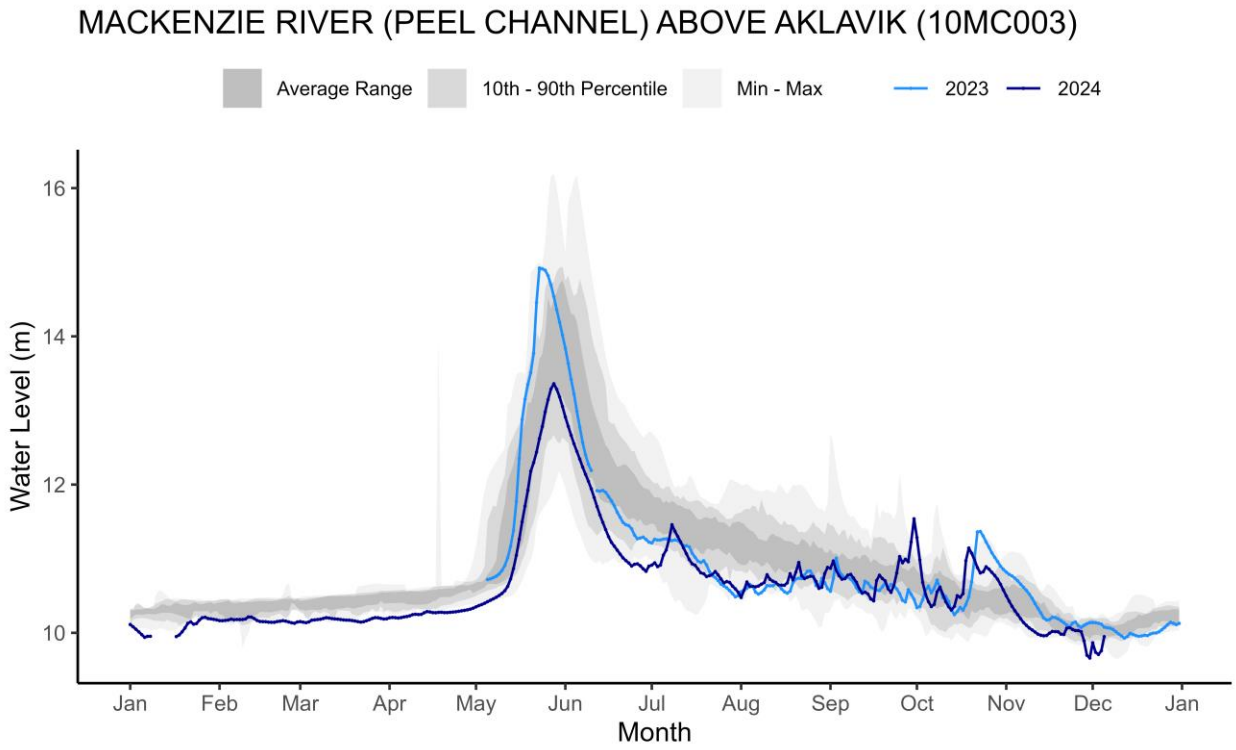
Mackenzie River at Arctic Red River [10LC014]



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

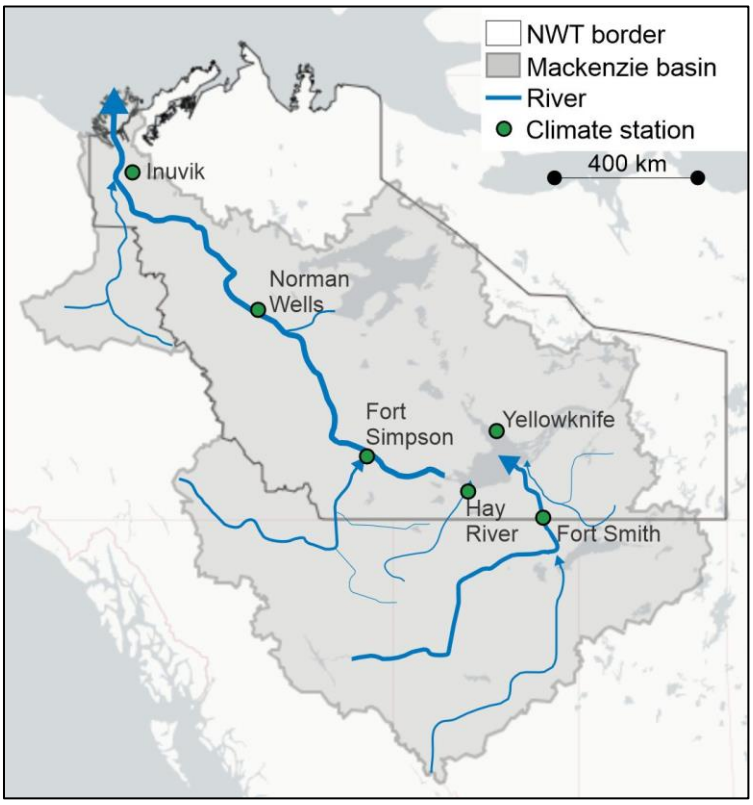


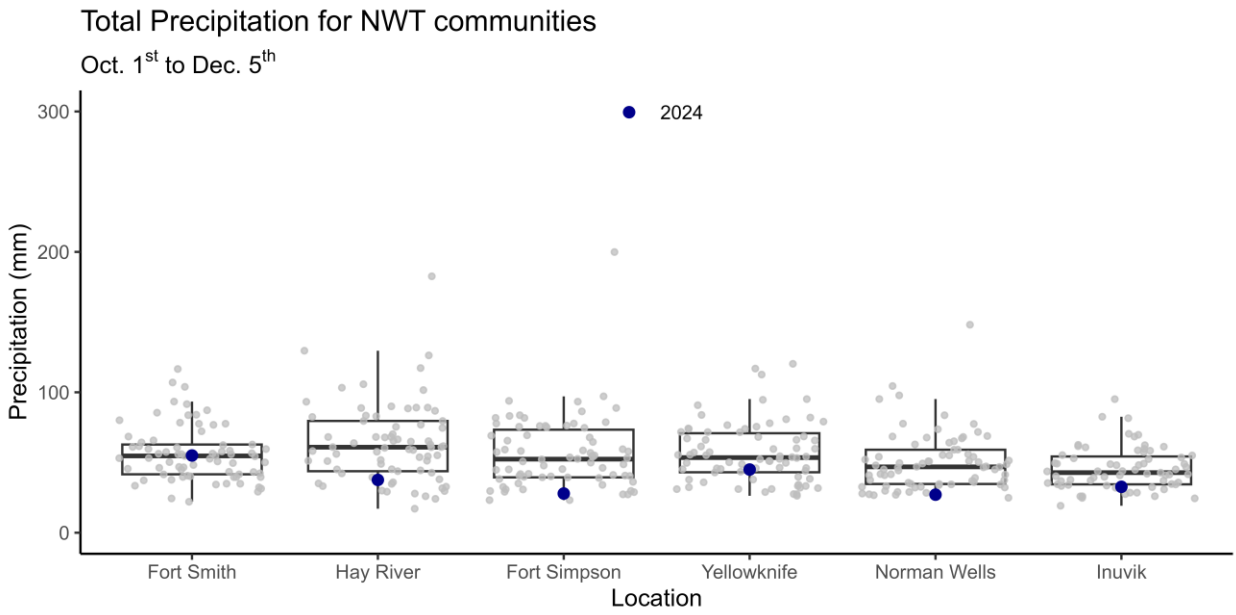
Mackenzie River (Peel Channel) above Aklavik [10MC003]



Climate Data:

NWT communities:





This figure shows total precipitation (rain and snow) that has fallen in select communities across the NWT from the start of October until December 5th. The blue dot is the current year, and the grey dots are all previous years from 1950 to present. A map of the Mackenzie River basin is provided for context.

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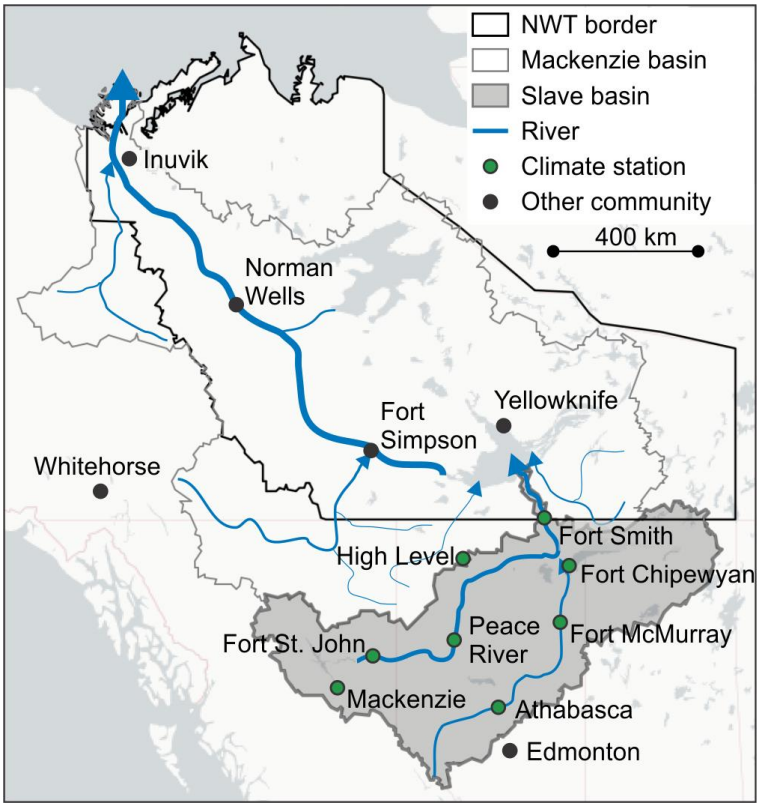
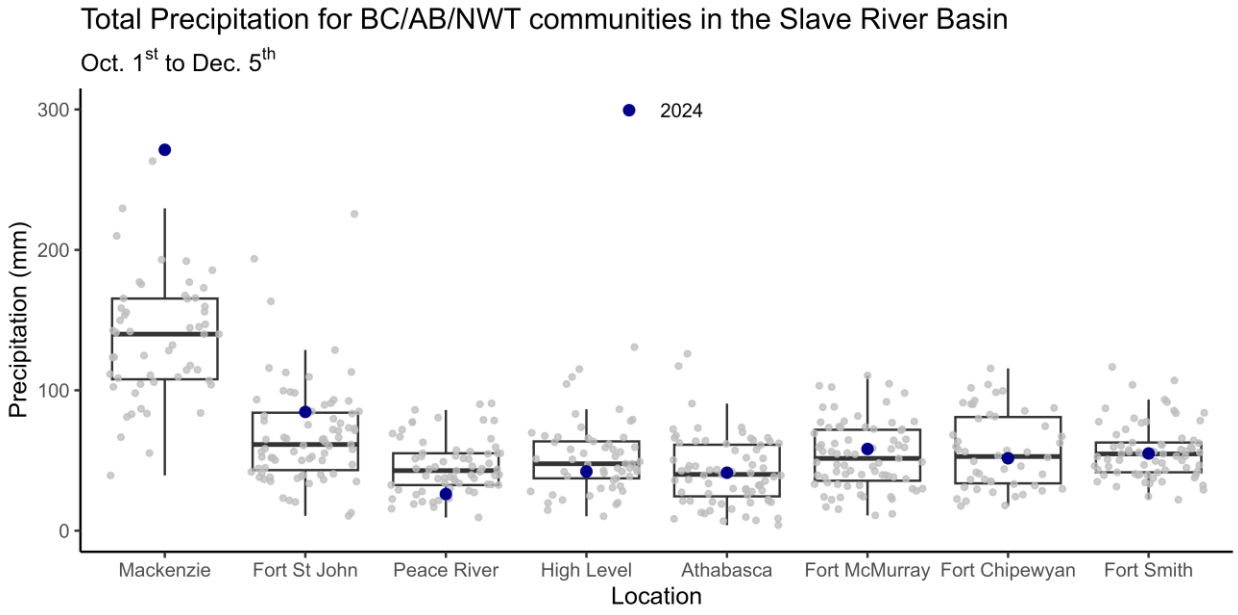
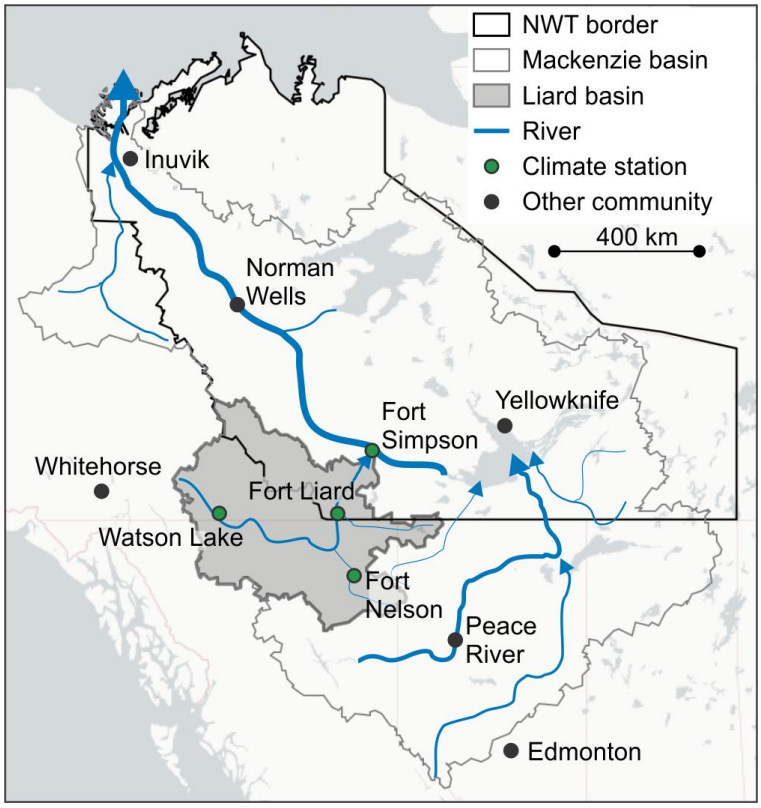
Slave River basin communities:

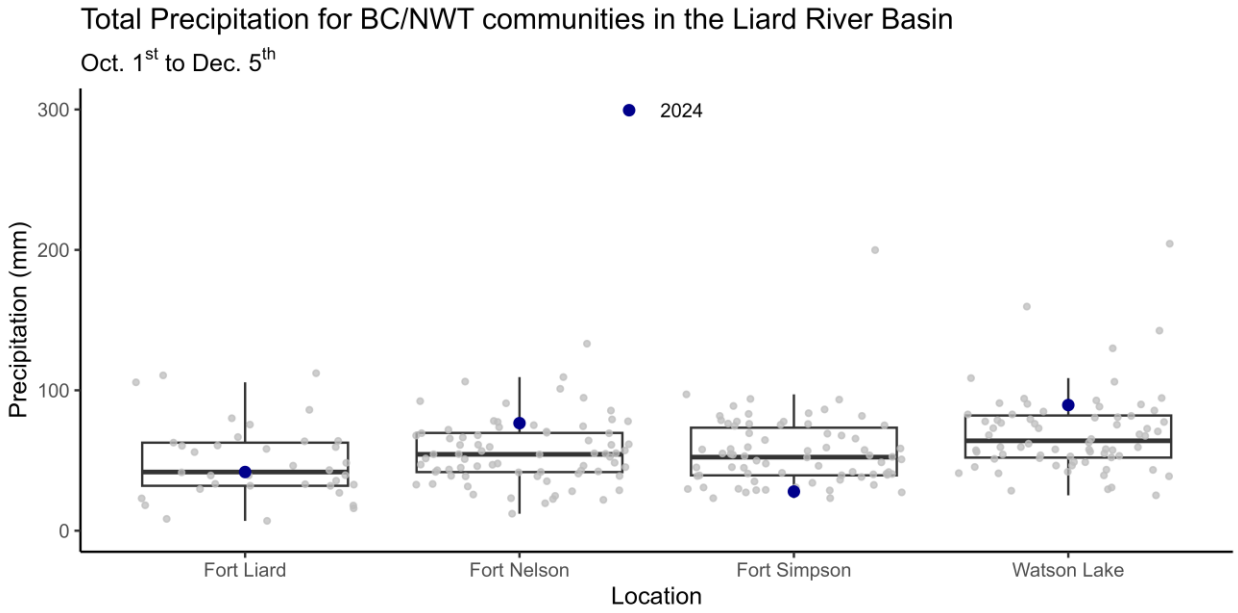




This figure shows total precipitation (rain and snow) that has fallen in select communities in the Slave River basin from the start of October until December 5th. The blue dot is the current year, and the grey dots are all previous years from 1950 to present. A map of the Mackenzie River and Slave River basins is provided for context.

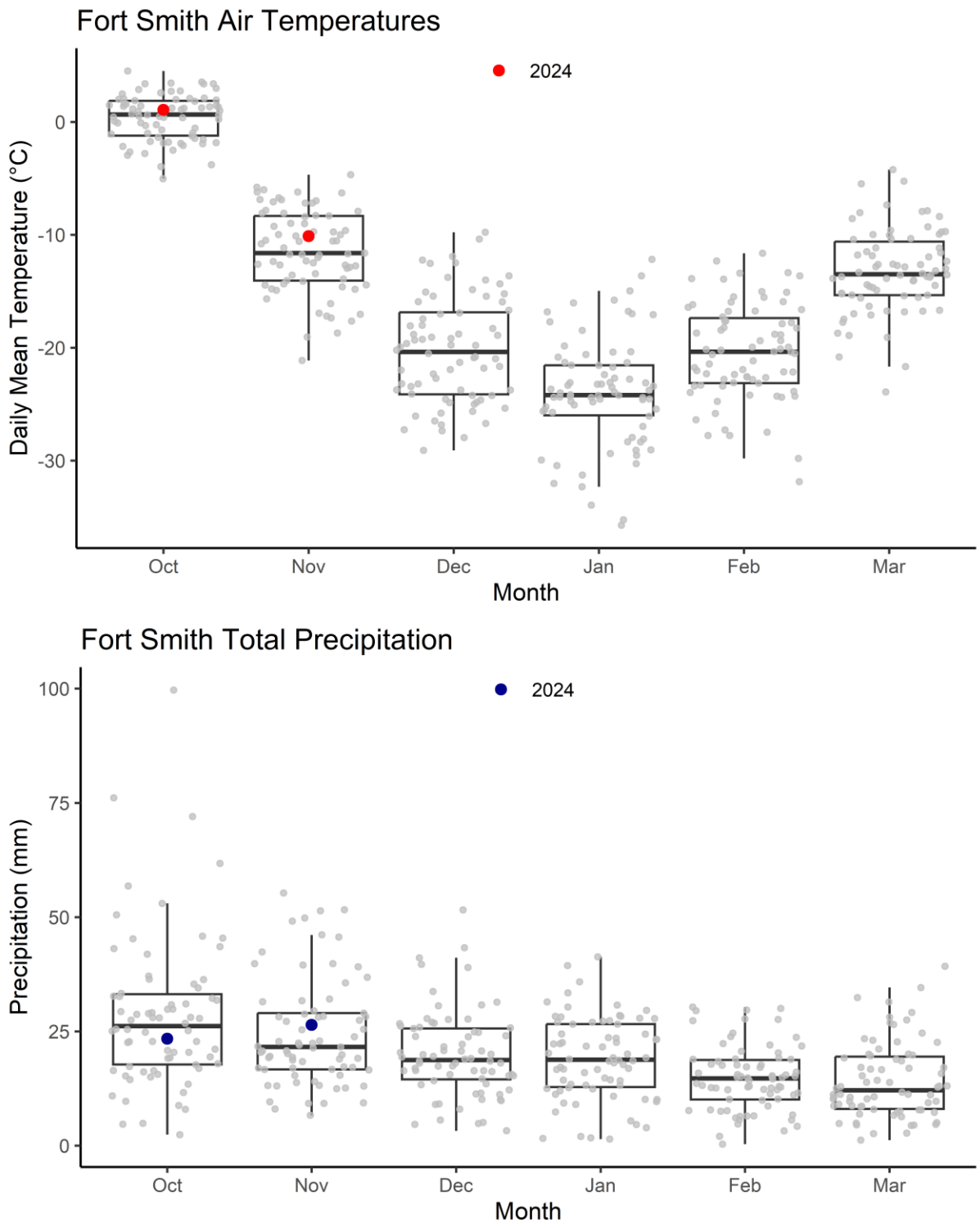
Liard River basin communities:





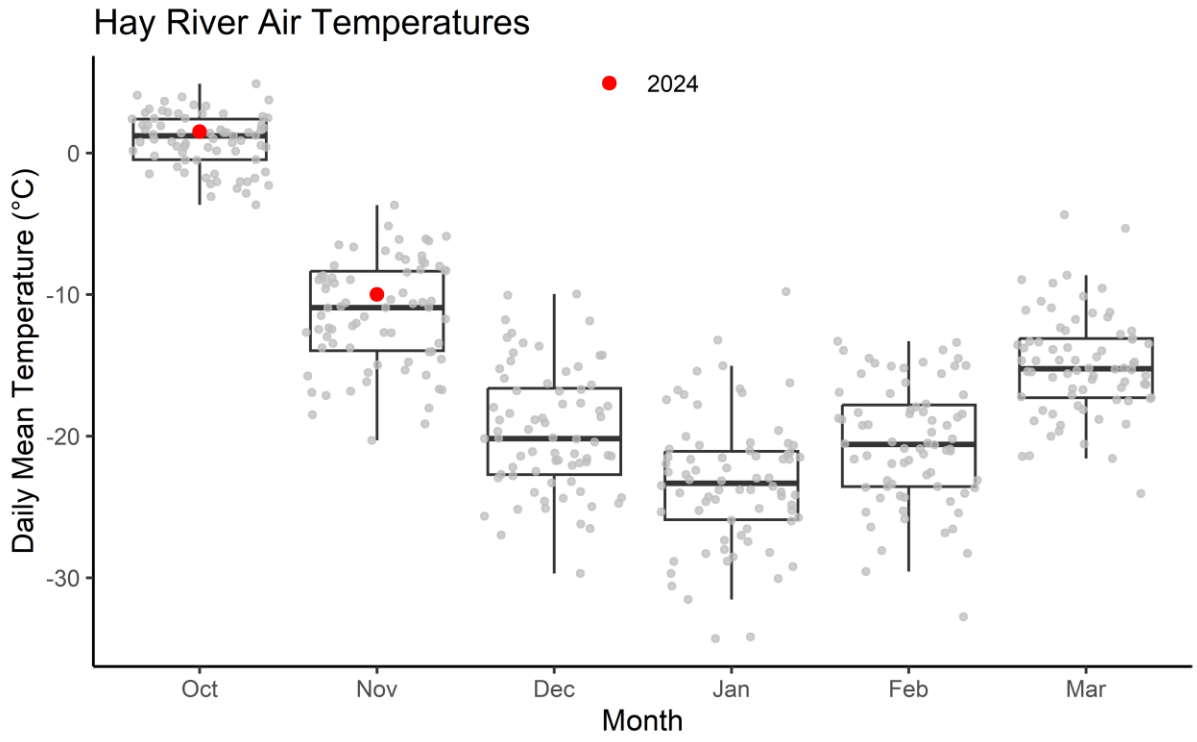
This figure shows total precipitation (rain and snow) that has fallen in select communities in the Liard River basin from the start of October until December 5th. The blue dot is the current year, and the grey dots are all previous years from 1950 to present. A map of the Mackenzie River and Liard River basins is provided for context.

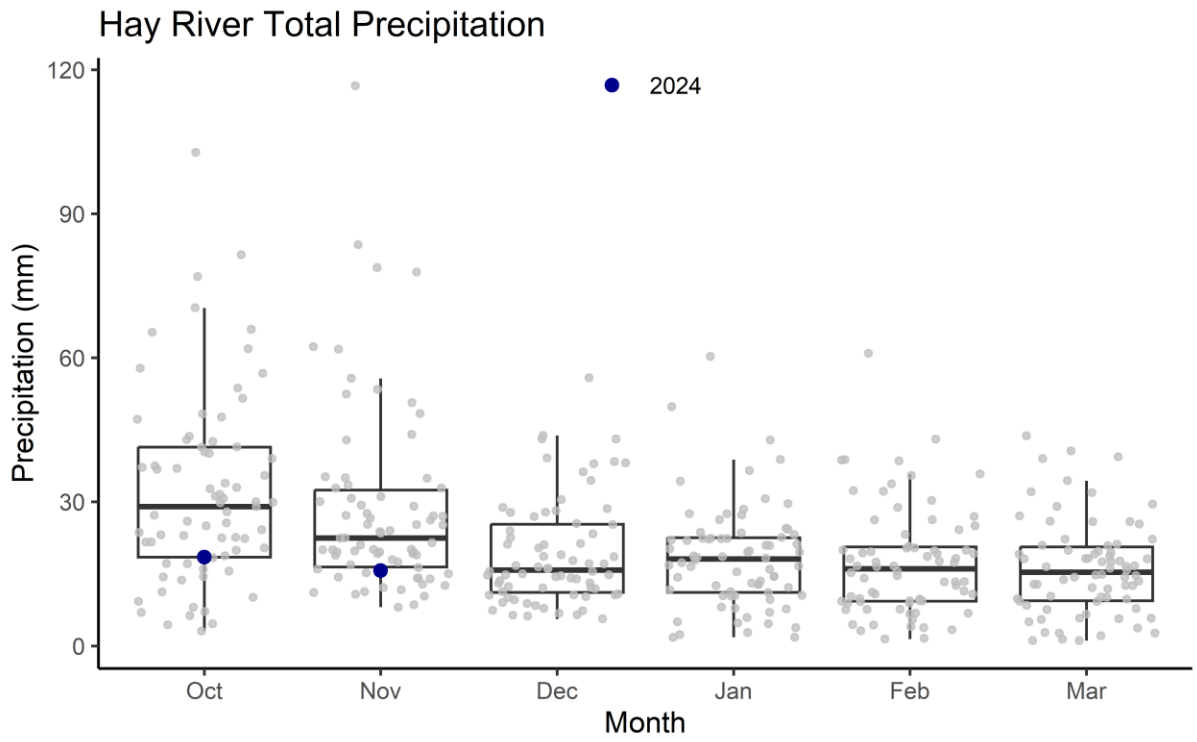
Fort Smith



This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.

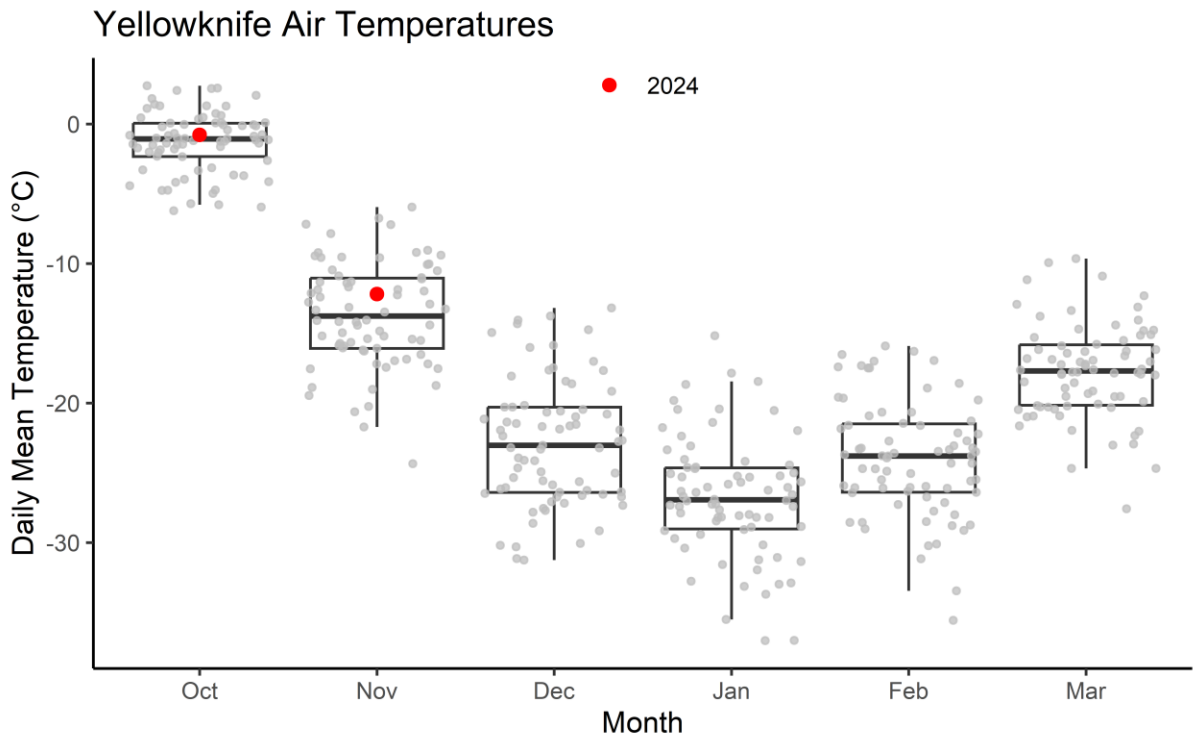
Hay River

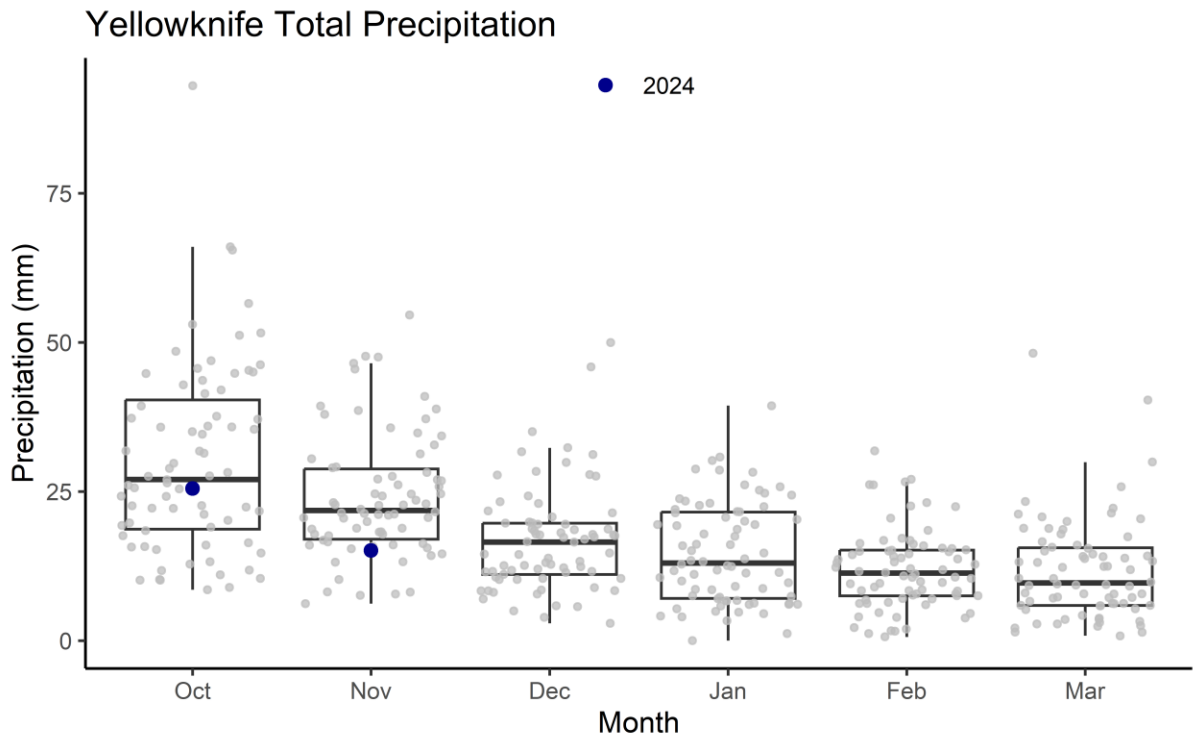




This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.

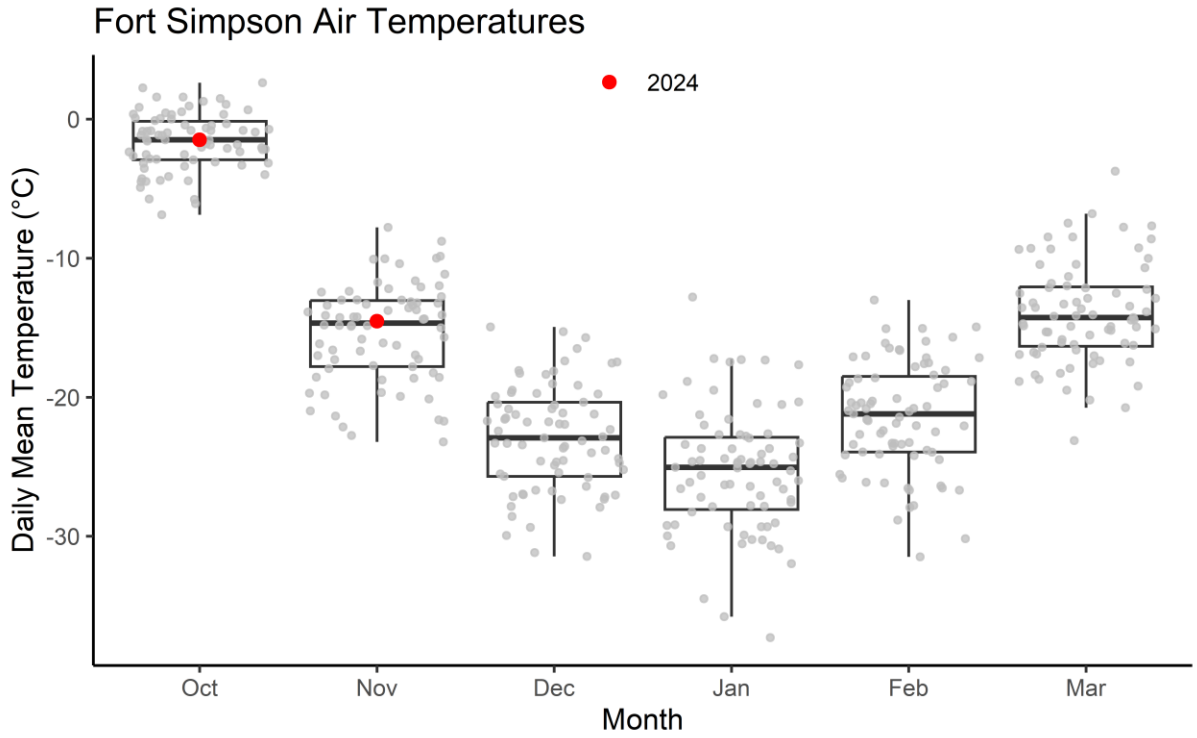
Yellowknife

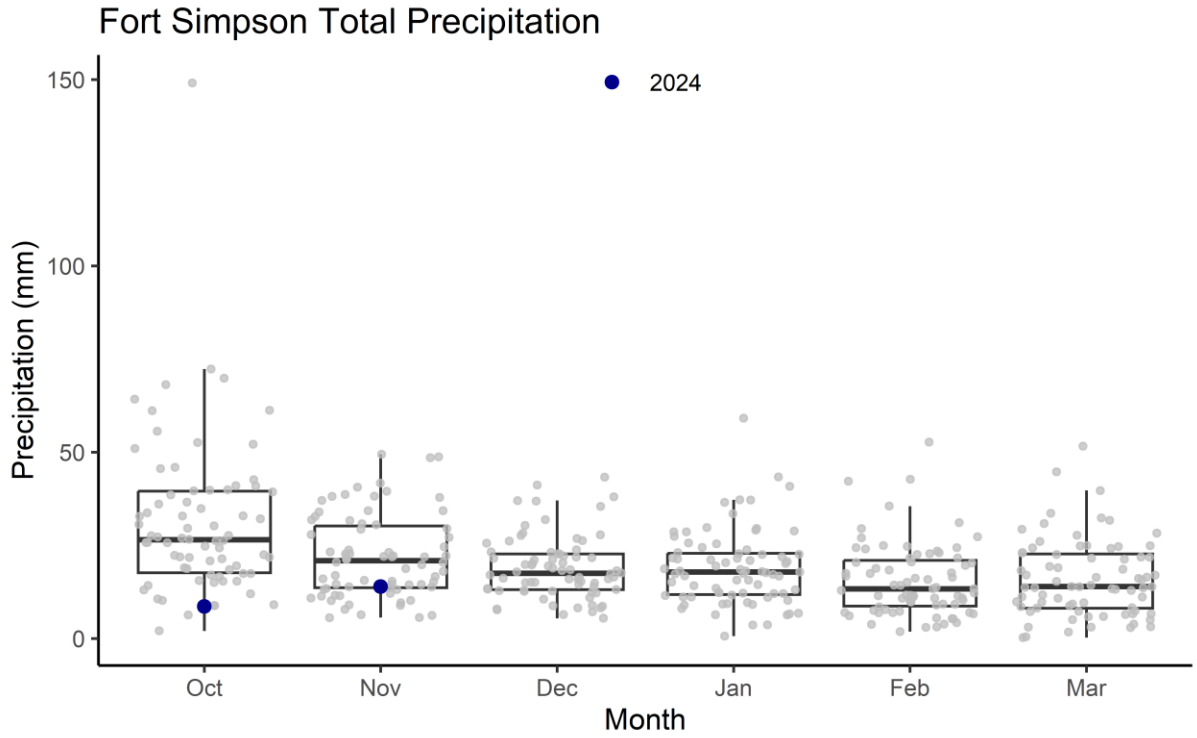




This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.

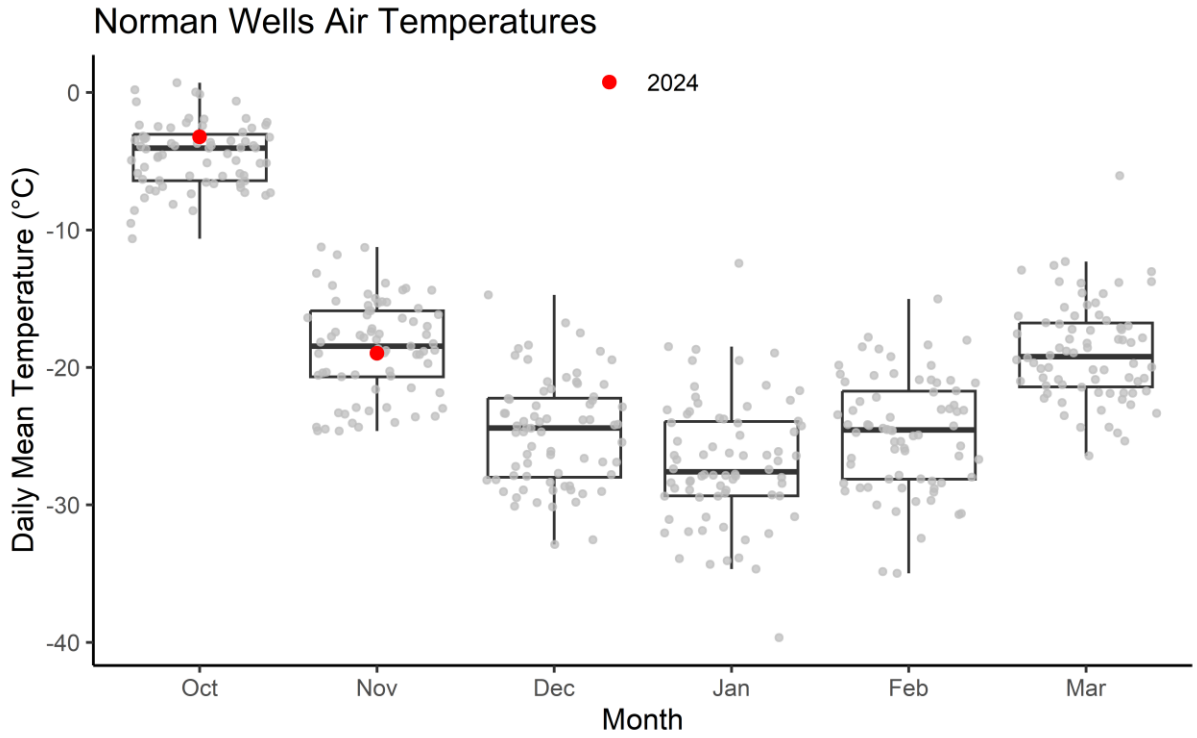
Fort Simpson

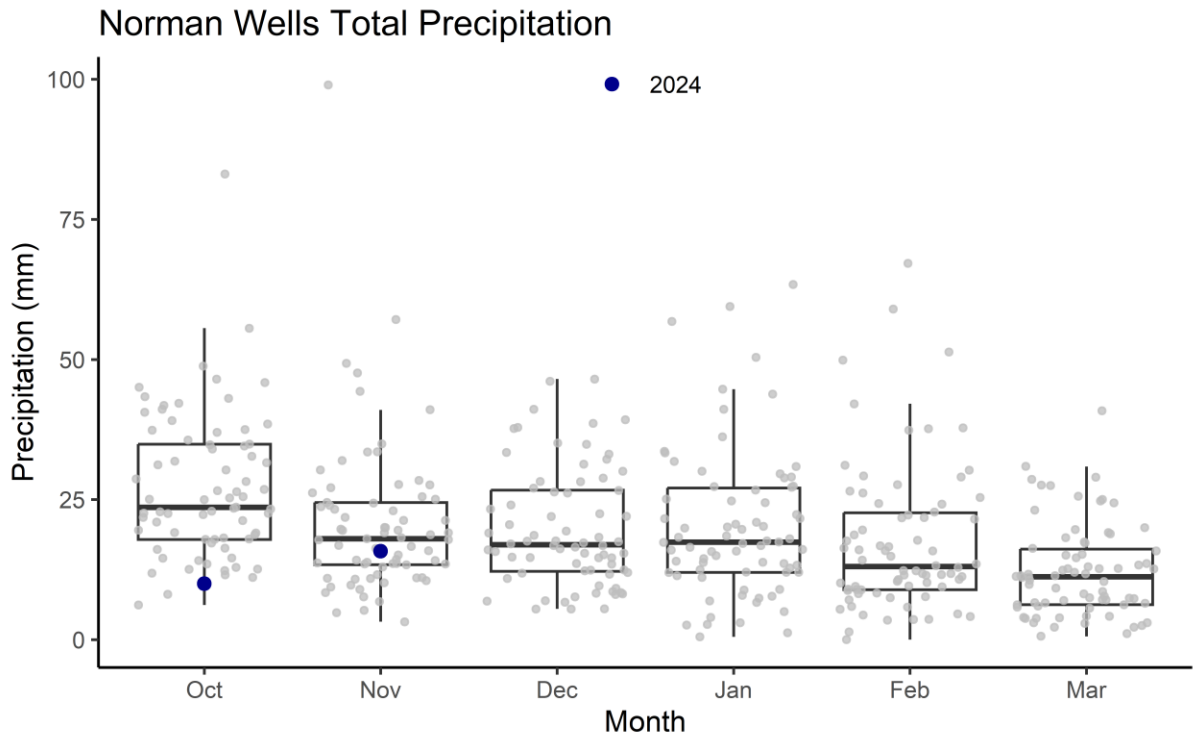




This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.

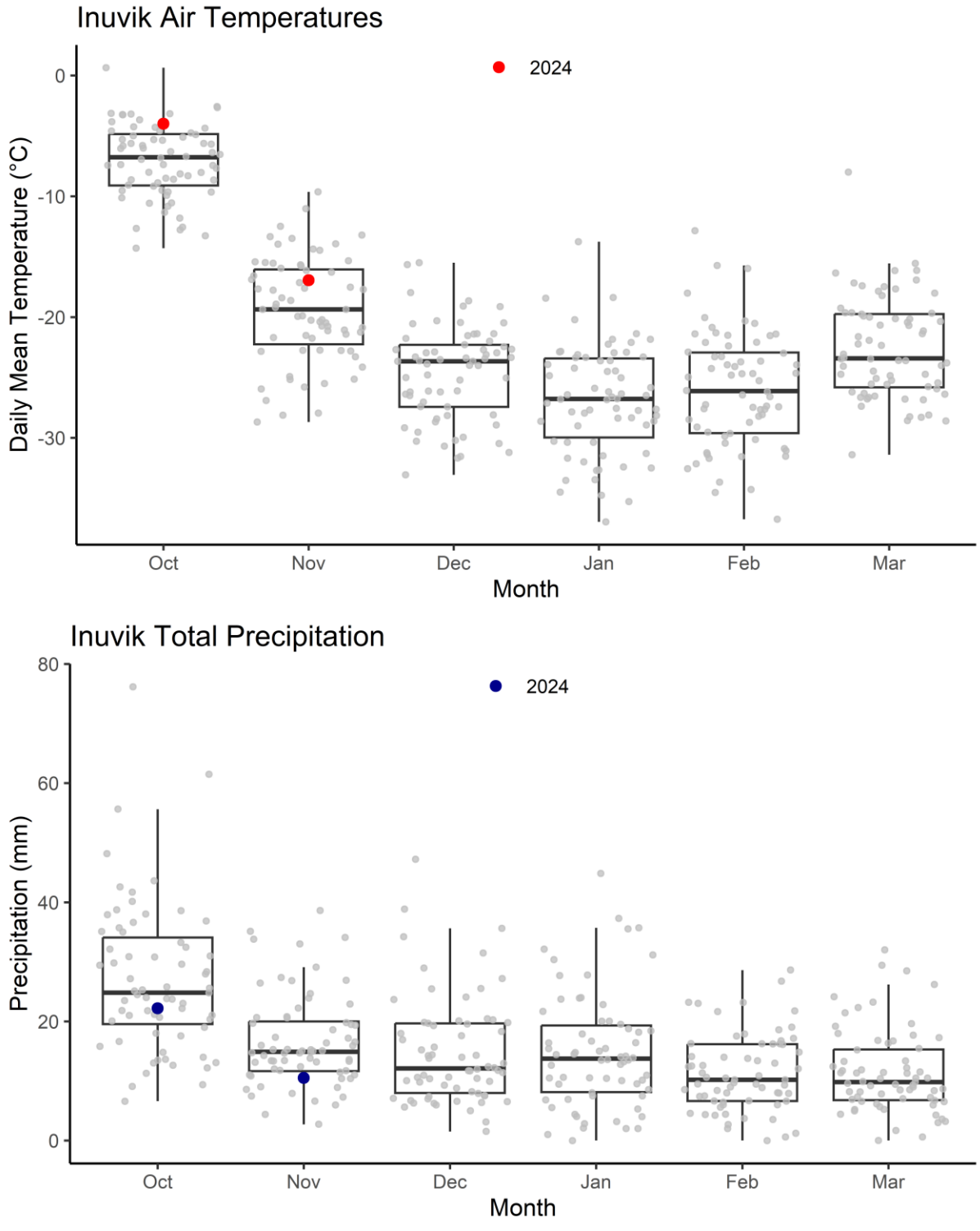
Norman Wells





This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.

Inuvik



This figure shows mean monthly air temperature and total monthly precipitation for the fall and winter of 2024.