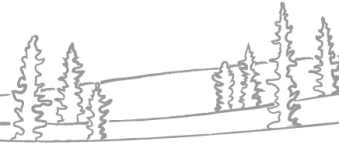




NWT Water Monitoring Bulletin

– December 05, 2023



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) and data from lake sites are presented as level. When flow data are unavailable, data from river sites are presented as level. The figures in this report represent current conditions for this year, relative to historic minimum and maximum values, as well as 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 2022 and 2023 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.

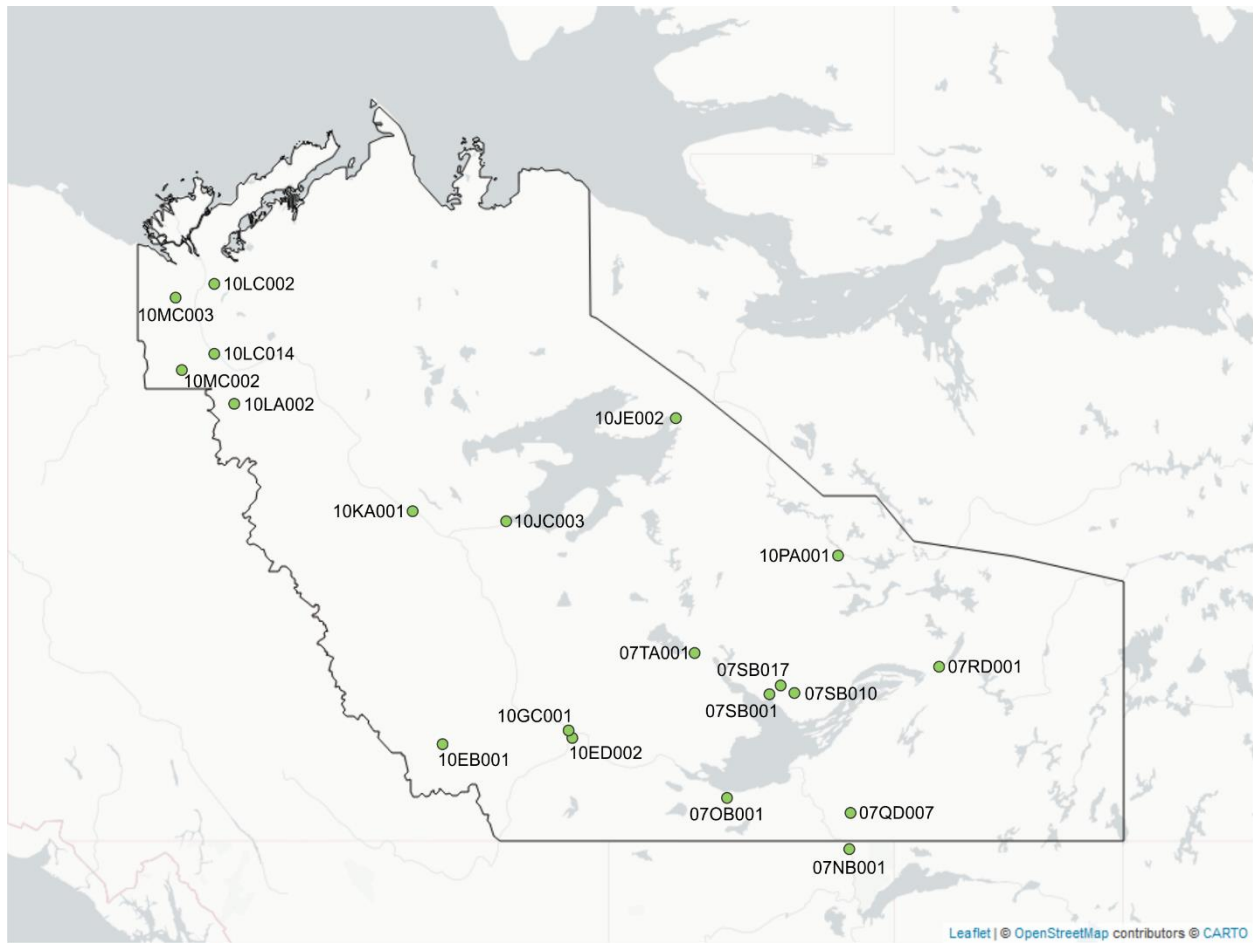
Current status:

- Water levels across the NWT remain very low.
 - These dry conditions began during the summer and fall of 2022 and have persisted through this year (2023).
- In November, snowfall amounts across the territory were about average, with the exception being the Beaufort Delta region, where more snow than normal was recorded.
 - Note: snowfall is presented here as *snow water equivalent* (SWE), which is the amount of water when snow is melted
 - SWE value can vary from snow depth values.
 - Heavy and wet snow has a higher SWE than light and fluffy snow.
 - The total amount of SWE over winter helps to inform us about how much water will be available to rivers and lakes in the spring.
- Great Slave Lake and the Mackenzie River water levels remain extremely low, largely due to hot and dry conditions in northern Alberta and British Columbia, and the southern NWT over the past two summers.
 - The Slave River remained below average over the summer and into winter.
 - Great Slave Lake is currently at the lowest water level ever recorded.
 - Water levels on Great Slave Lake generally start to increase around early December as inflows from the Slave River (sourced in part from outputs from the W.A.C. Bennett Dam in British Columbia) exceed outflows to the Mackenzie River.
 - BC Hydro has stated that filling of the Site C reservoir will not begin until late summer/fall of 2024.
- During freeze-up on rivers, water levels can change because of the hydraulics of the river system. This may be observed as sudden increases or decreases in water level. A good example is shown in the figure of the Mackenzie River at Fort Simpson 10GC001 (below).
 - Initially when an ice cover forms and water turns to ice, there is a temporary decrease in water level.
 - After an ice cover forms, there is more resistance, which decreases flow rates and can cause an increase water levels.
 - Water levels typically stabilize by mid-winter.

Contents

Current status:	2
Hydrometric station map.....	4
Information on interpreting figures:.....	5
Water level and flow figures:.....	5
Climate figures:.....	5
Water level and flow data:	6
Slave River at Fitzgerald [07NB001]	6
Hay River near Hay River [07OB001]	6
Taltson River below Hydro Dam [07QD007]	7
Lockhart River at outlet of Artillery Lake [07RD001]	7
Coppermine River below Desteffany Lake [10PA001].....	8
Great Slave Lake at Yellowknife Bay [07SB001].....	8
Cameron River below Reid Lake [07SB010]	9
Prelude Lake near Yellowknife [07SB017].....	9
La Martre River below outlet of Lac La Martre [07TA001]	10
South Nahanni River above Virginia Falls [10EB001]	10
Liard River near the Mouth [10ED002].....	11
Mackenzie River at Fort Simpson [10GC001]	11
Mackenzie River at Norman Wells [10KA001]	12
Great Bear River at outlet of Great Bear Lake [10JC003].....	12
Great Bear Lake at Hornby Bay [10JE002]	13
Arctic Red River near the mouth [10LA002]	13
Peel River above Fort McPherson [10MC002]	14
Mackenzie River at Arctic Red River [10LC014]	14
Mackenzie River (East Channel) at Inuvik [10LC002]	15
Mackenzie River (Peel Channel) above Aklavik [10MC003].....	15
Climate Data:	16
Fort Smith	16
Hay River	17
Yellowknife.....	18
Fort Simpson.....	19
Norman Wells	20
Inuvik	21

Hydrometric station map



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

Information on interpreting figures:

Water level and flow figures:

The dark blue line shows current levels/flows from this year (2023). The dark grey band represents the average range (calculated as the interquartile range), while the light 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 2022. If the line from 2023 is above (below) the grey band, it means that the flow or level from that year was the highest (lowest) on record.

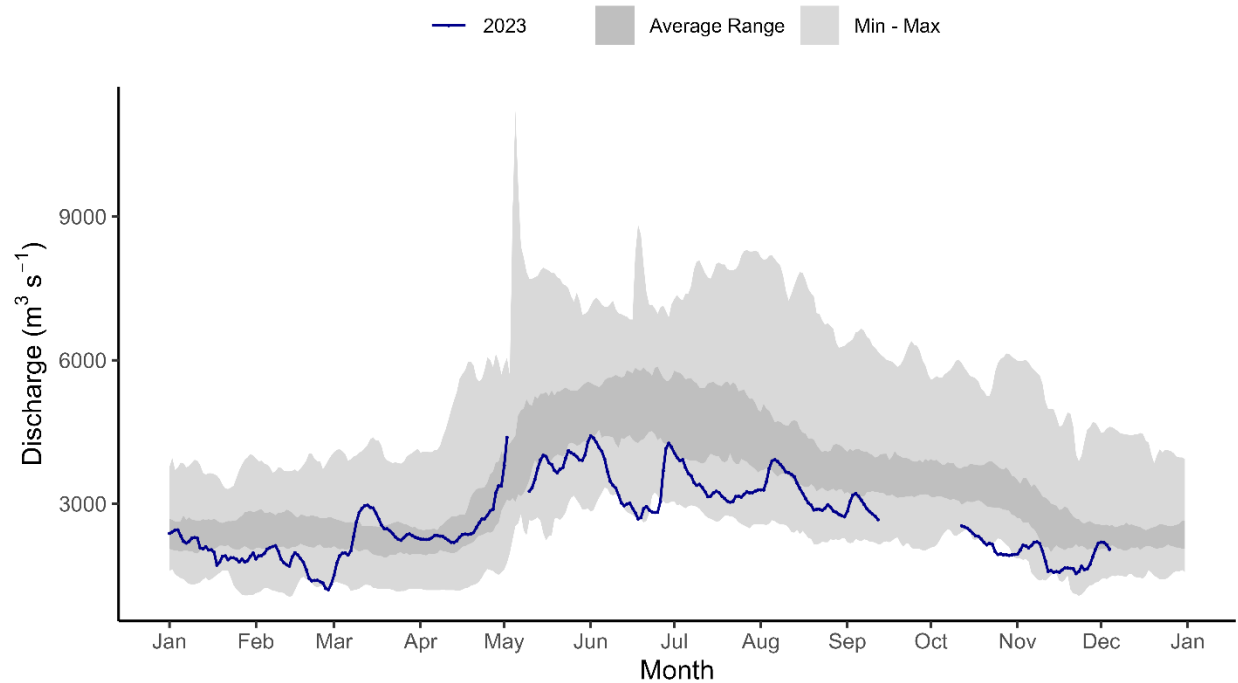
Climate figures:

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 acquired and managed by Environment and Climate Change Canada.

Water level and flow data:

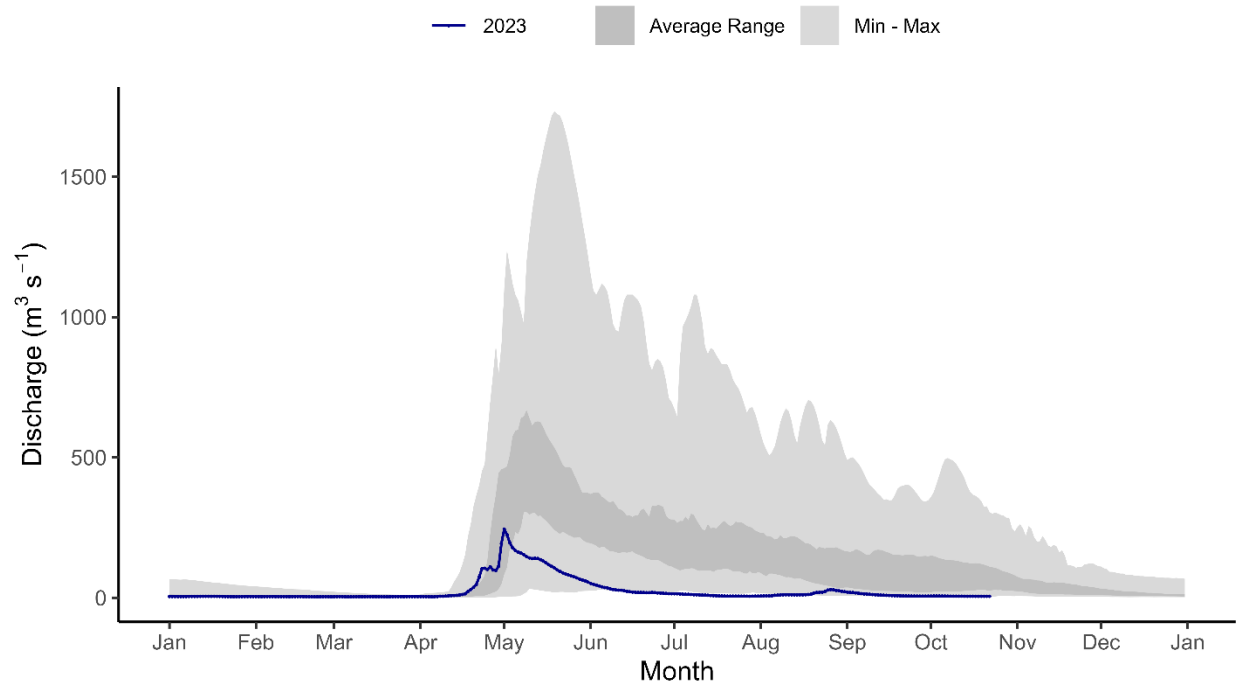
Slave River at Fitzgerald [07NB001]

SLAVE RIVER AT FITZGERALD (ALBERTA) (07NB001)



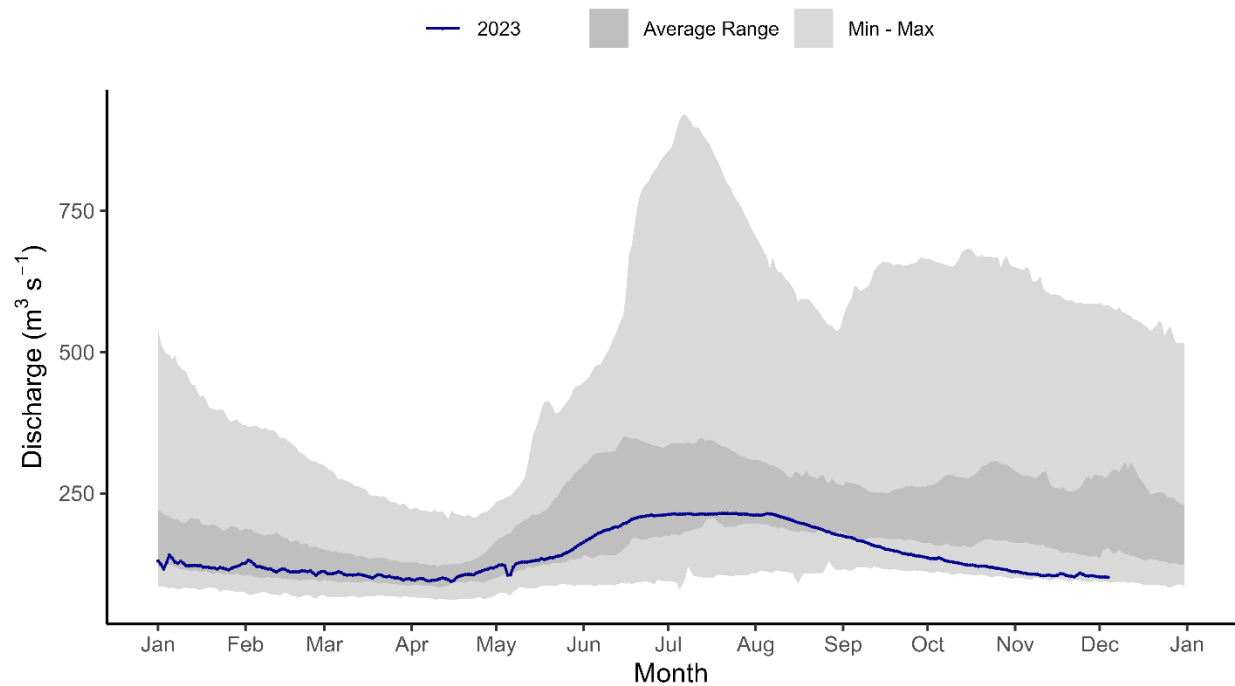
Hay River near Hay River [07OB001]

HAY RIVER NEAR HAY RIVER (07OB001)



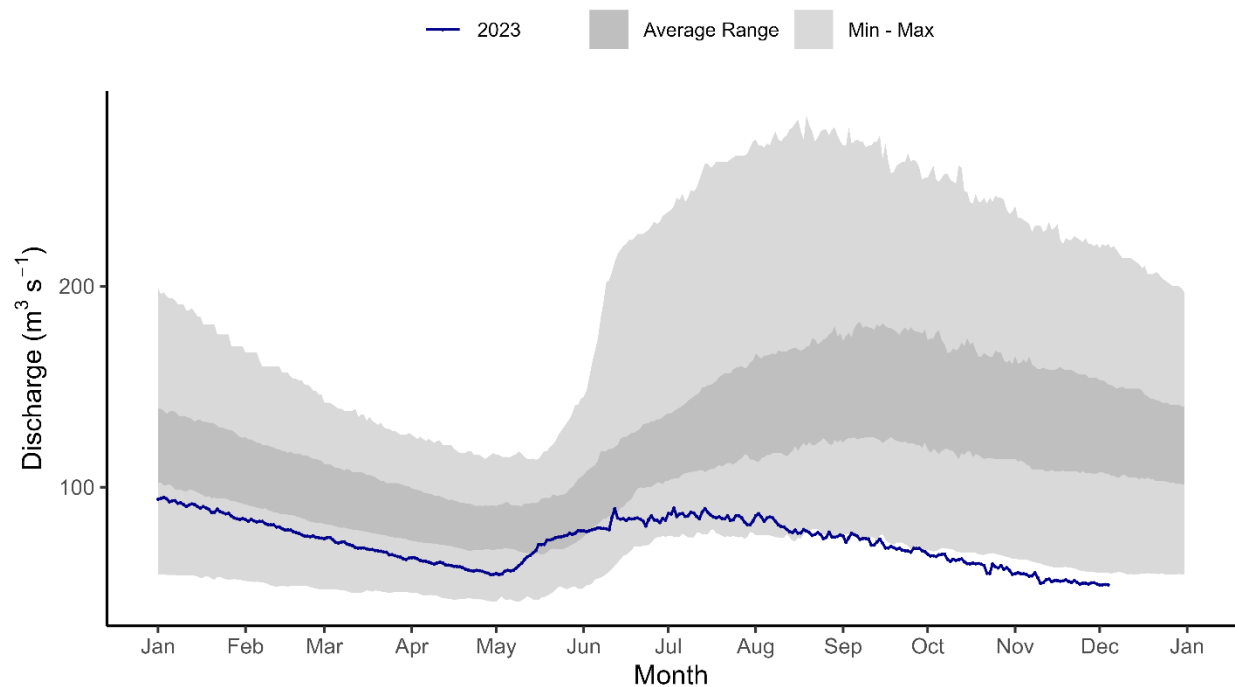
Taltson River below Hydro Dam [07QD007]

TALTSON RIVER BELOW HYDRO DAM (07QD007)



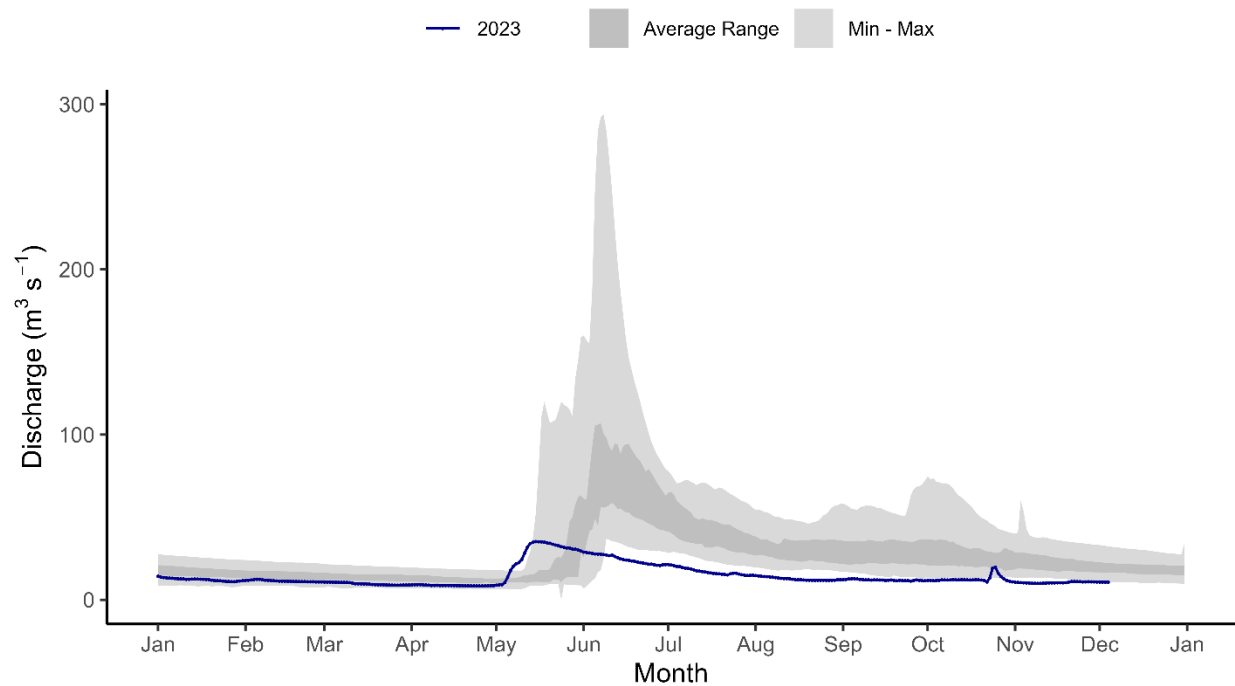
Lockhart River at outlet of Artillery Lake [07RD001]

LOCKHART RIVER AT OUTLET OF ARTILLERY LAKE (07RD001)



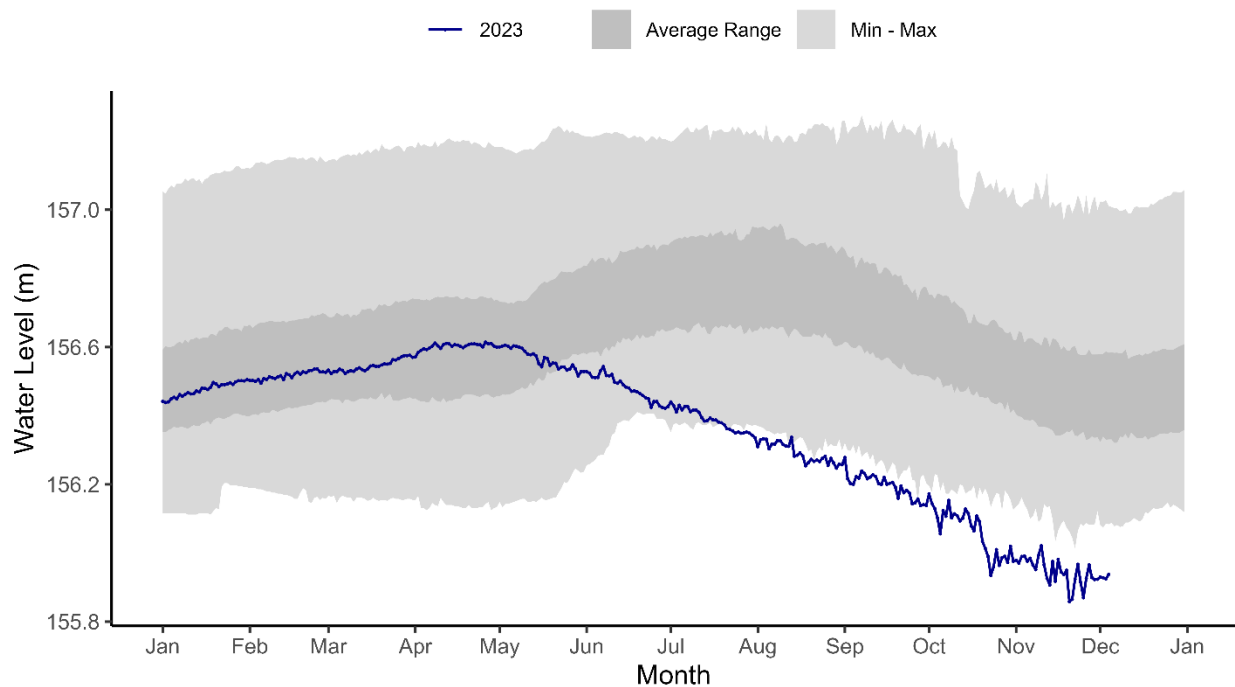
Coppermine River below Desteffany Lake [10PA001]

COPPERMINE RIVER BELOW DESTEFFANY LAKE (10PA001)



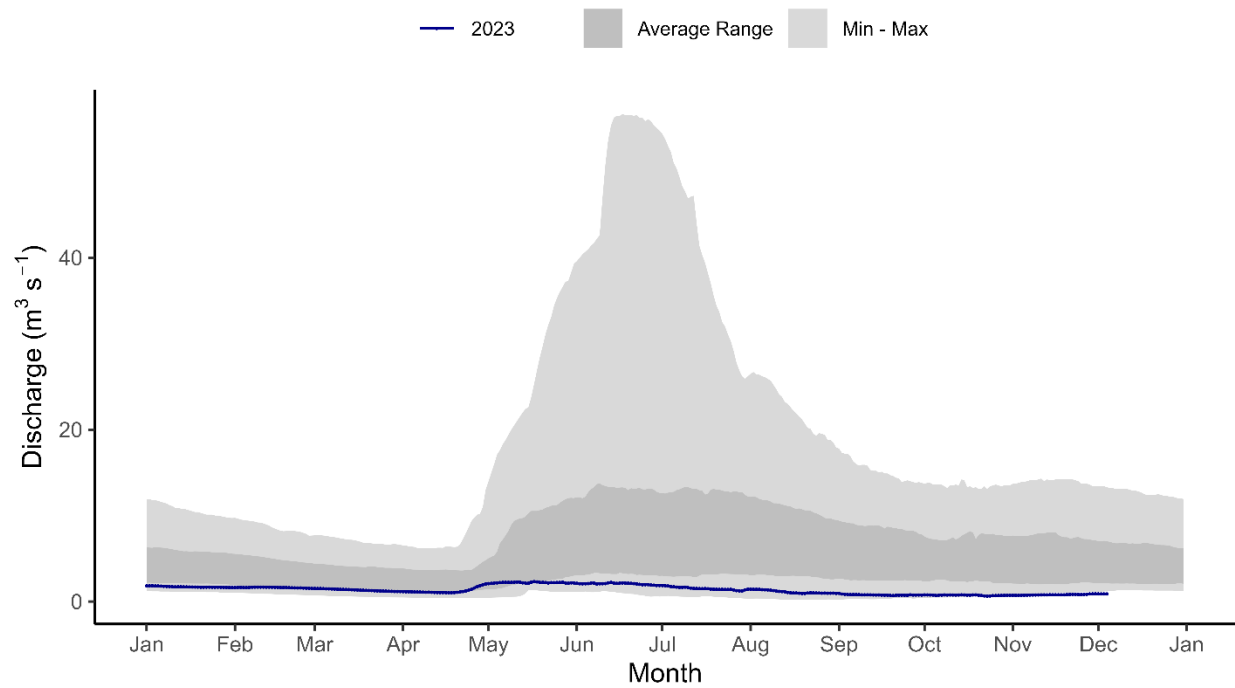
Great Slave Lake at Yellowknife Bay [07SB001]

GREAT SLAVE LAKE AT YELLOWKNIFE BAY (07SB001)



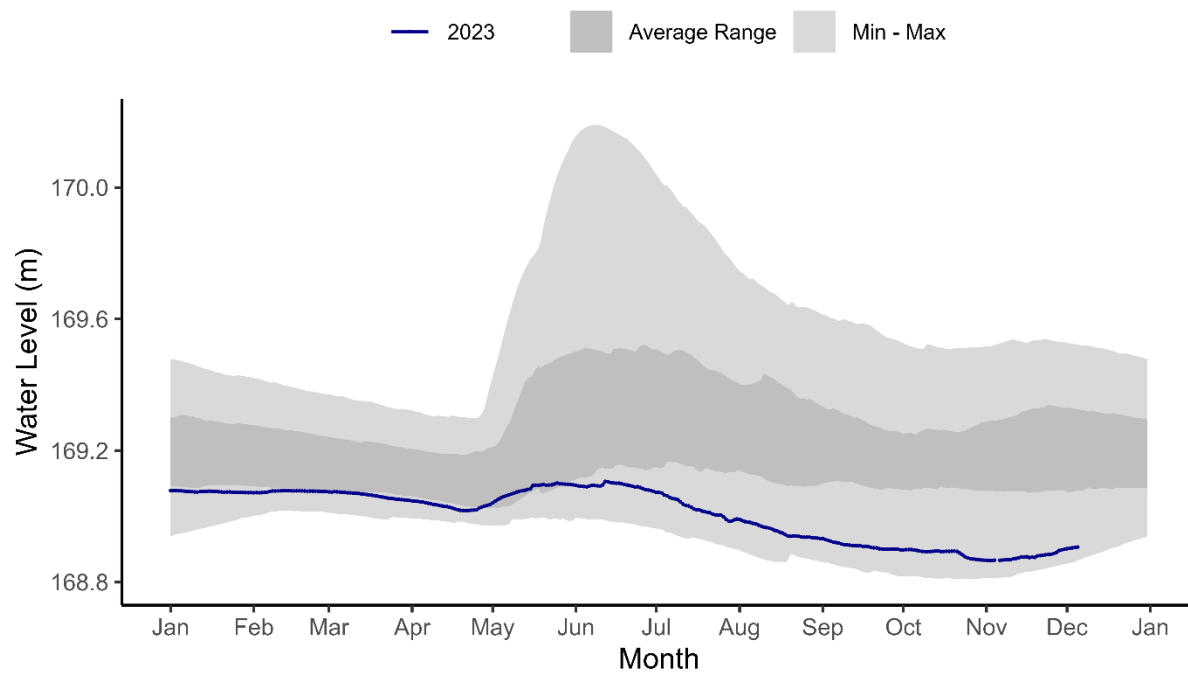
Cameron River below Reid Lake [07SB010]

CAMERON RIVER BELOW REID LAKE (07SB010)



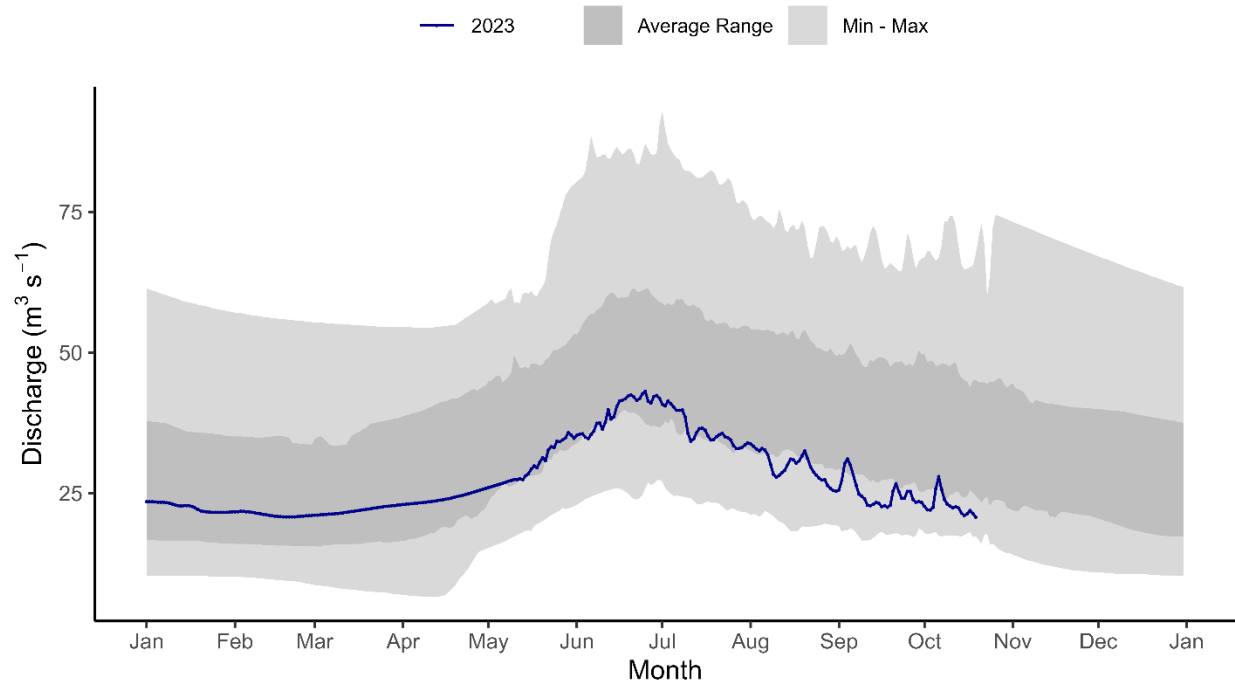
Prelude Lake near Yellowknife [07SB017]

PRELUDE LAKE NEAR YELLOWKNIFE (07SB017)



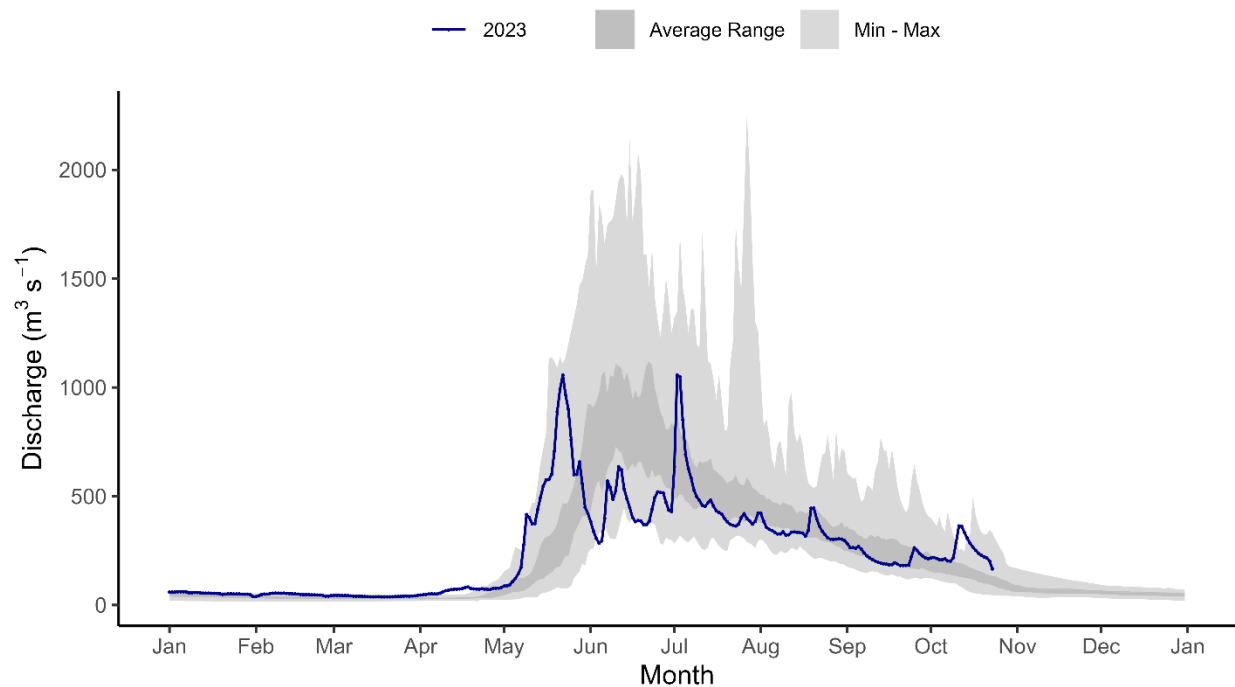
La Martre River below outlet of Lac La Martre [07TA001]

LA MARTRE RIVER BELOW OUTLET OF LAC LA MARTRE (07TA001)



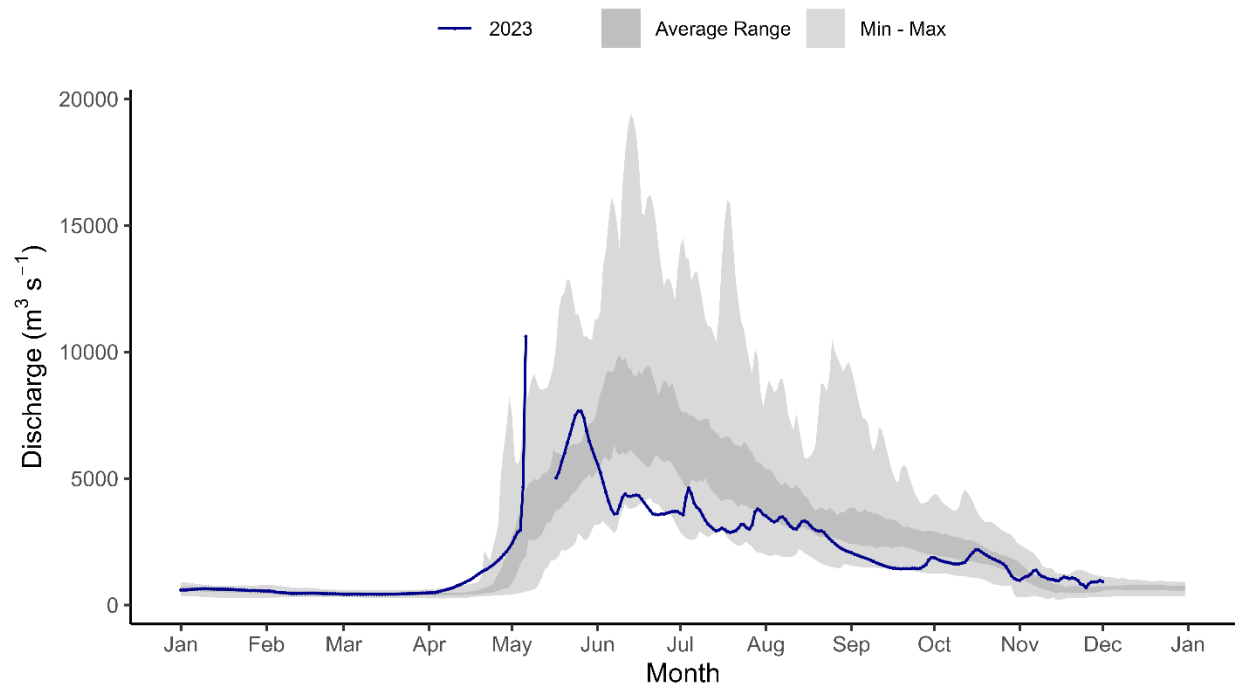
South Nahanni River above Virginia Falls [10EB001]

SOUTH NAHANNI RIVER ABOVE VIRGINIA FALLS (10EB001)



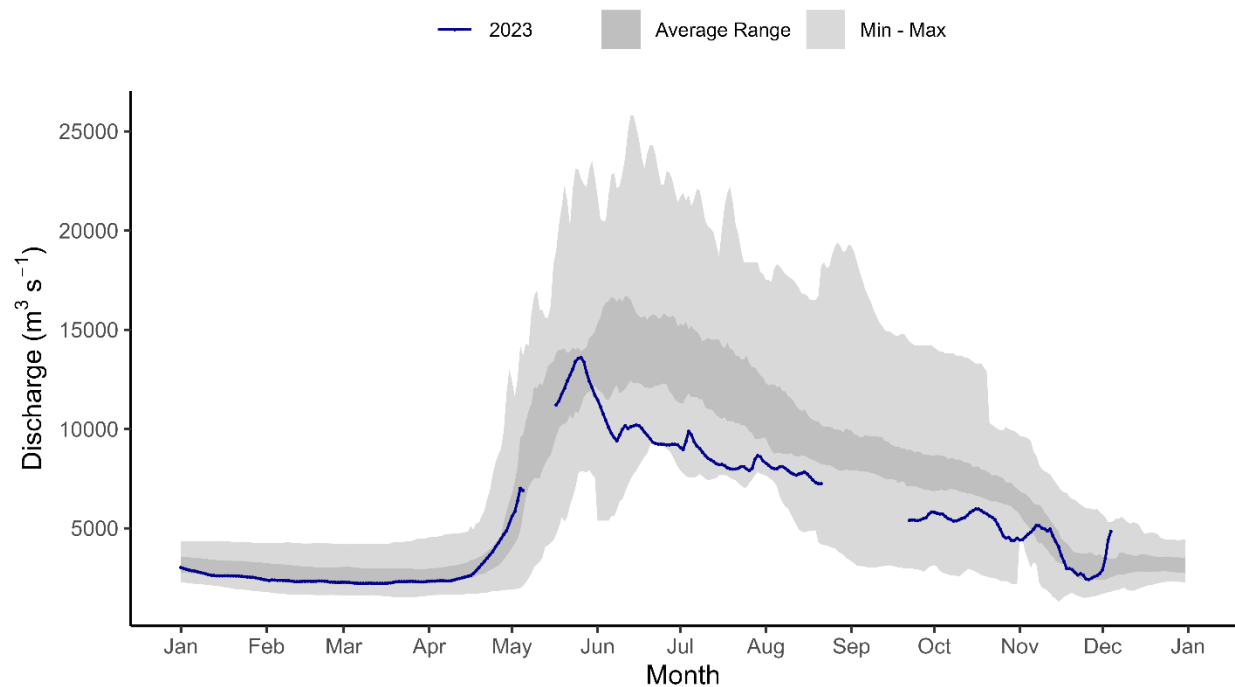
Liard River near the Mouth [10ED002]

LIARD RIVER NEAR THE MOUTH (10ED002)



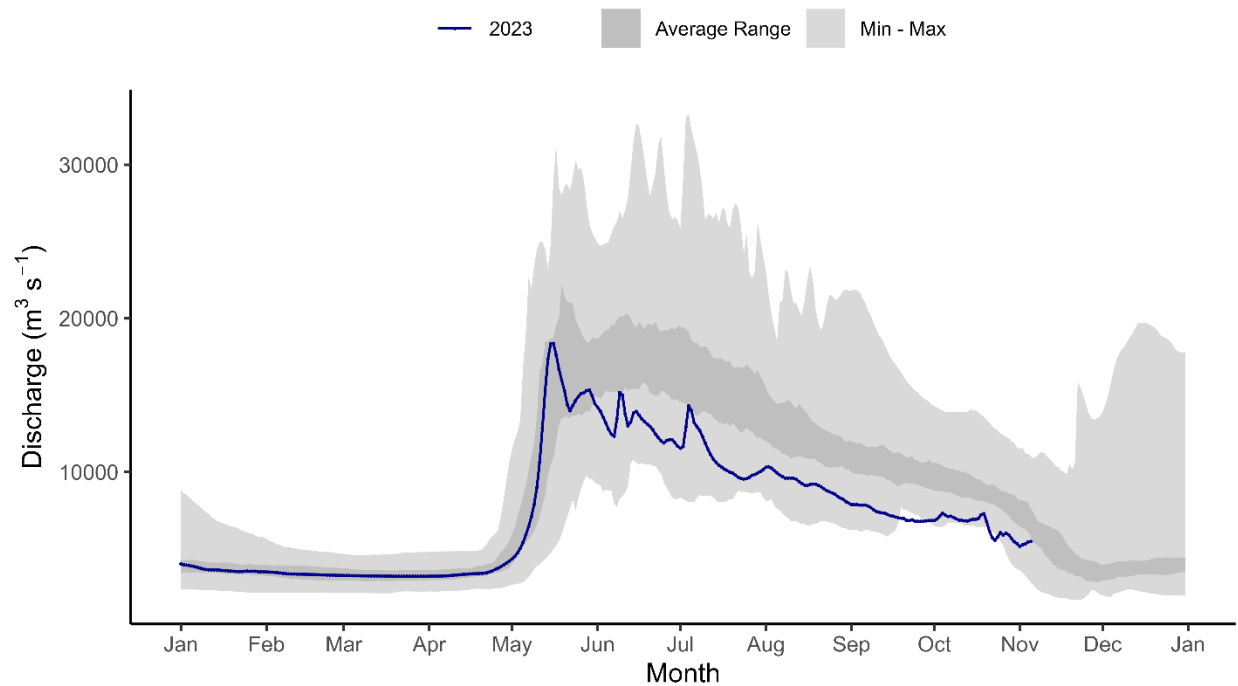
Mackenzie River at Fort Simpson [10GC001]

MACKENZIE RIVER AT FORT SIMPSON (10GC001)



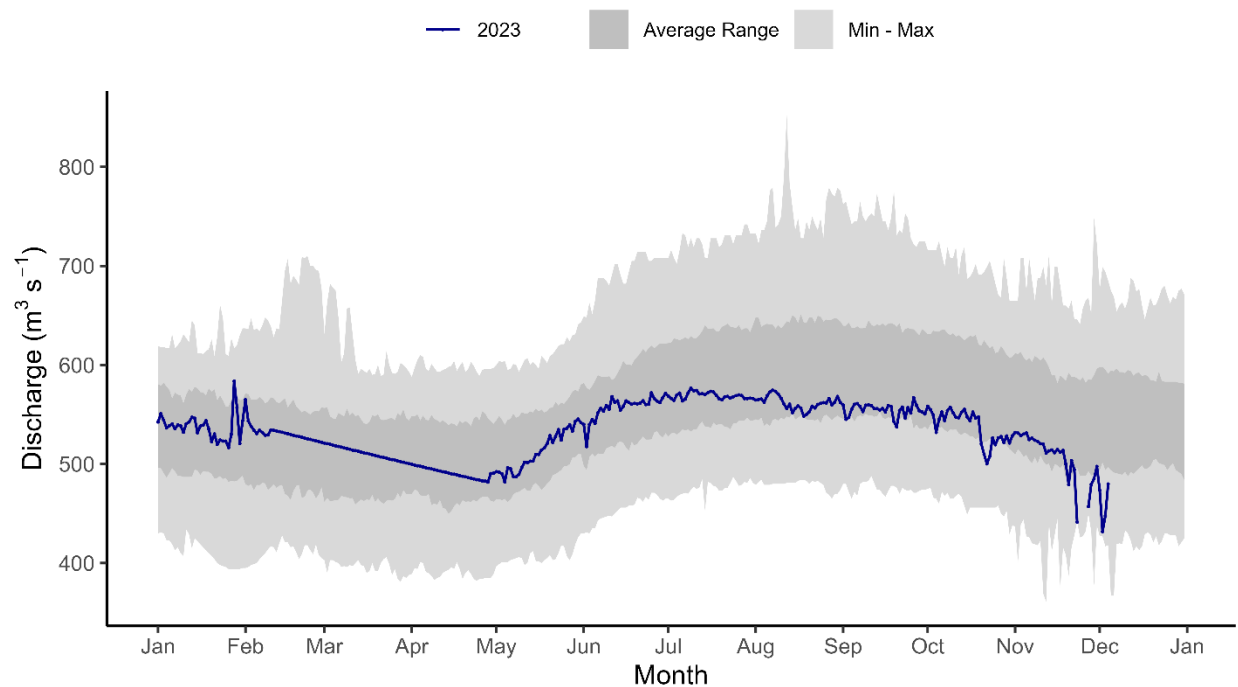
Mackenzie River at Norman Wells [10KA001]

MACKENZIE RIVER AT NORMAN WELLS (10KA001)



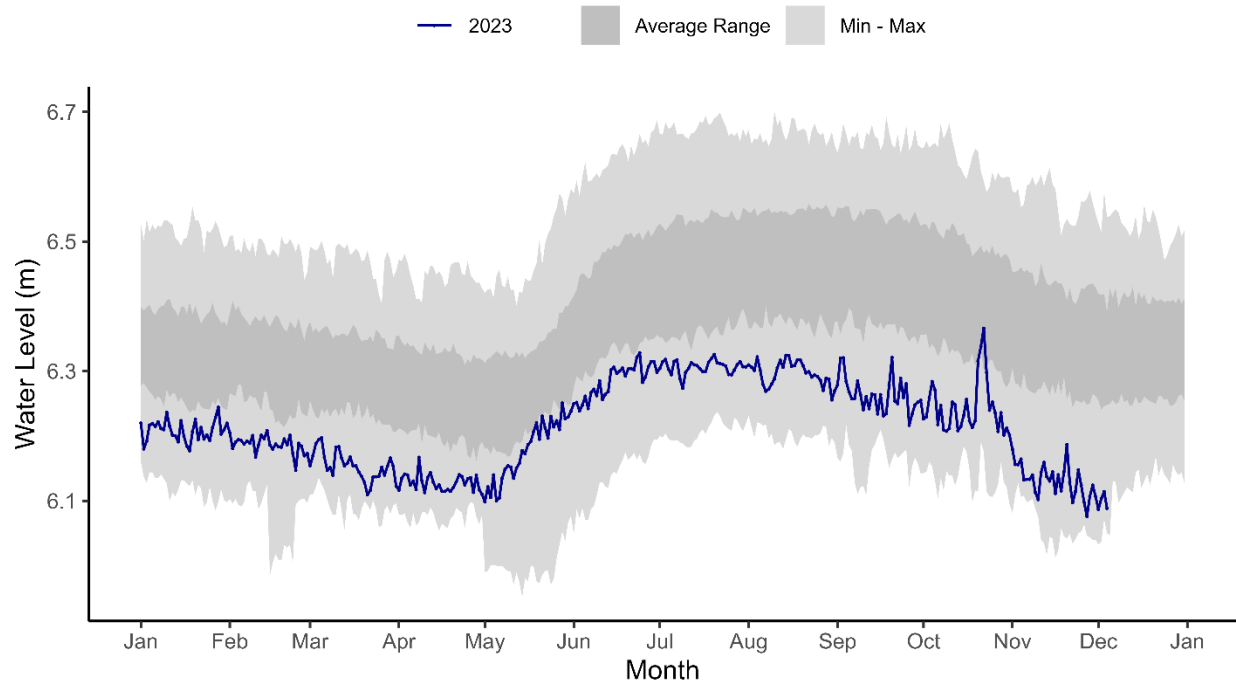
Great Bear River at outlet of Great Bear Lake [10JC003]

GREAT BEAR RIVER AT OUTLET OF GREAT BEAR LAKE (10JC003)



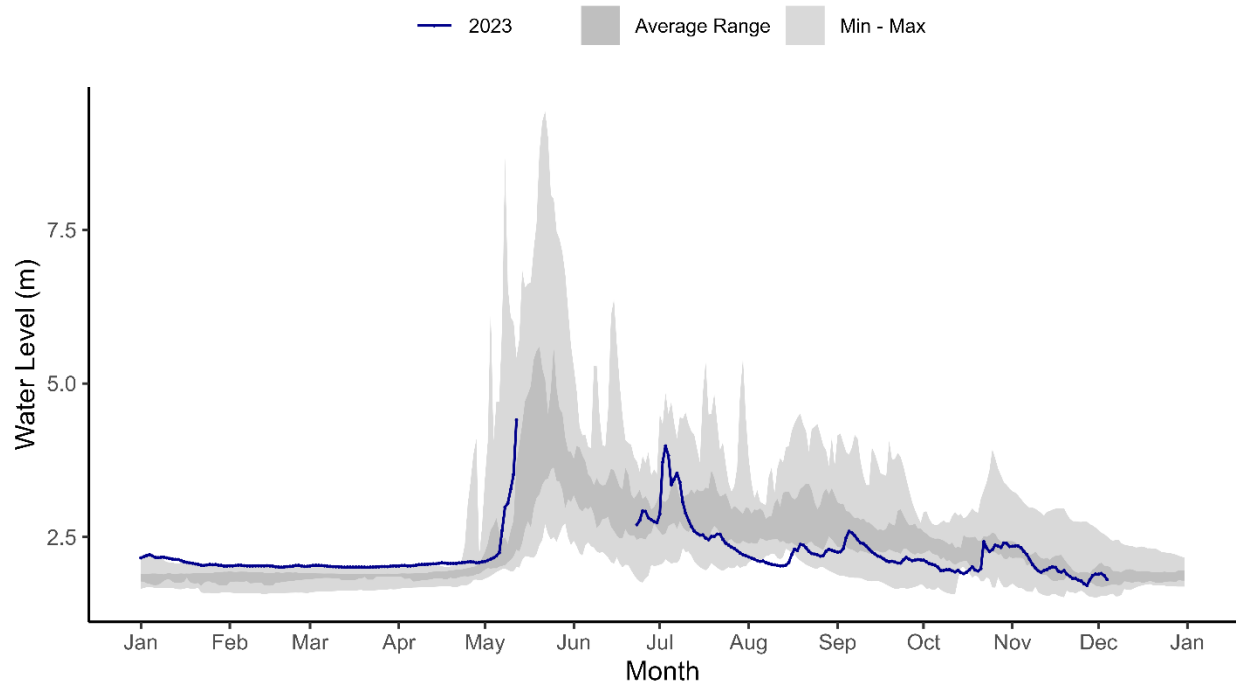
Great Bear Lake at Hornby Bay [10JE002]

GREAT BEAR LAKE AT HORNBY BAY (10JE002)



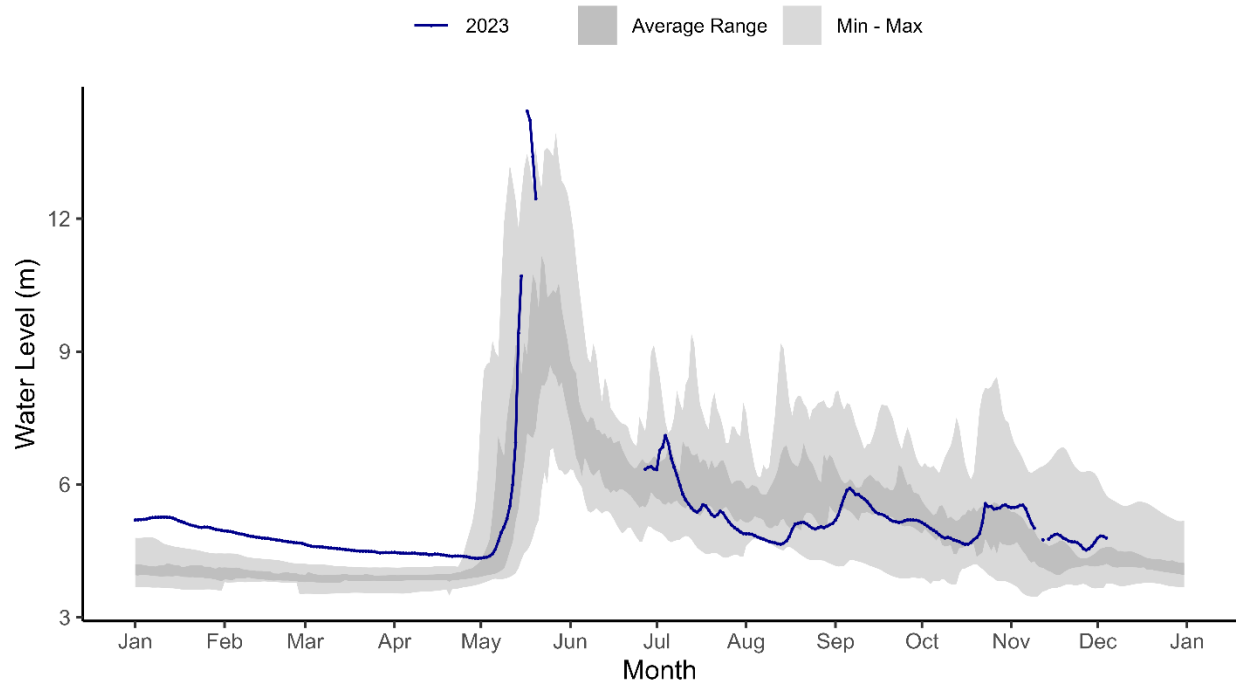
Arctic Red River near the mouth [10LA002]

ARCTIC RED RIVER NEAR THE MOUTH (10LA002)



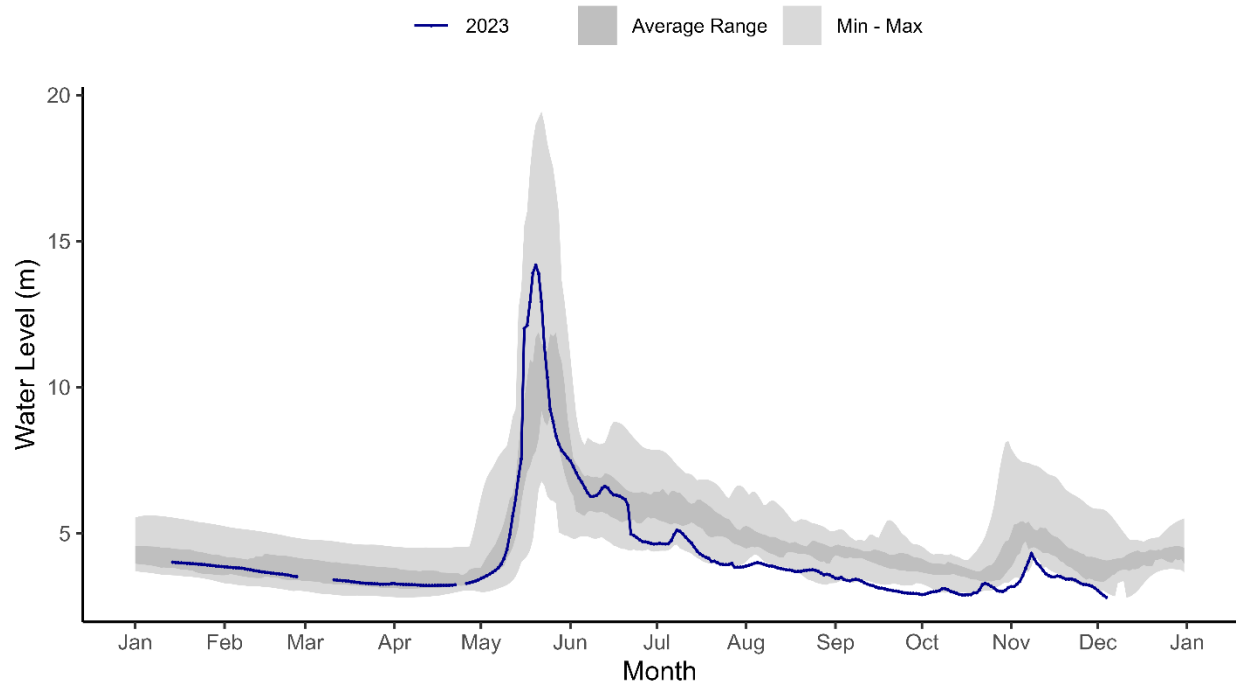
Peel River above Fort McPherson [10MC002]

PEEL RIVER ABOVE FORT MCPHERSON (10MC002)



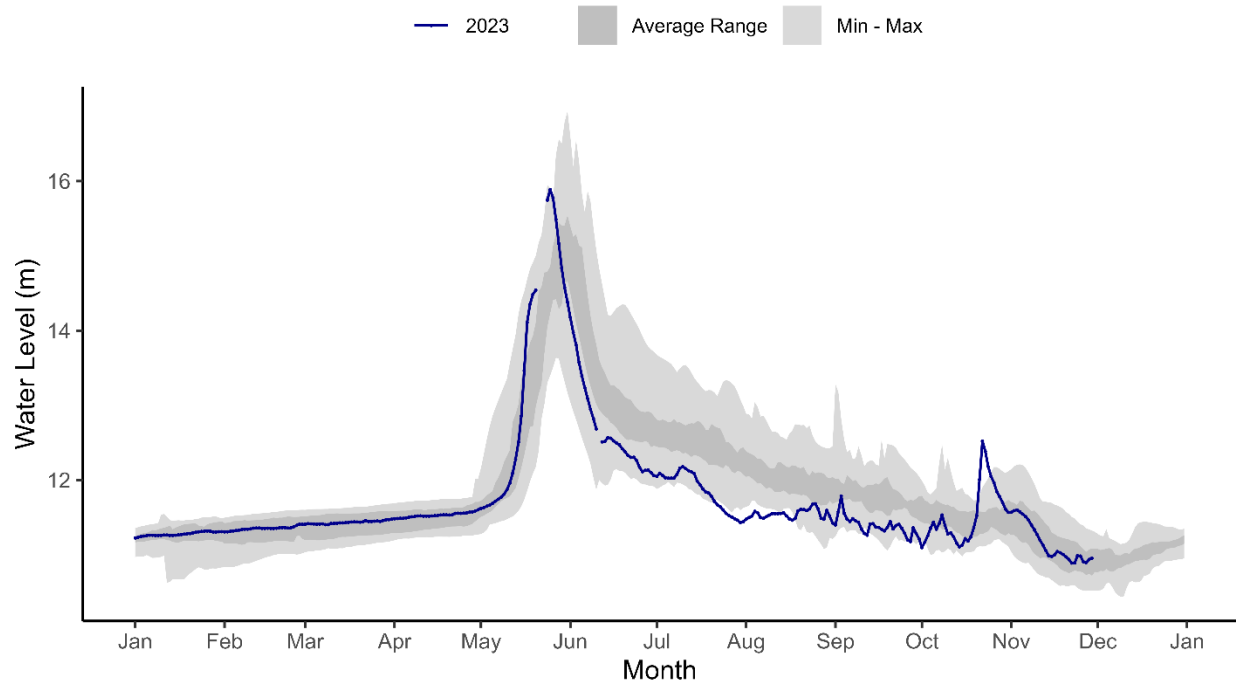
Mackenzie River at Arctic Red River [10LC014]

MACKENZIE RIVER AT ARCTIC RED RIVER (10LC014)



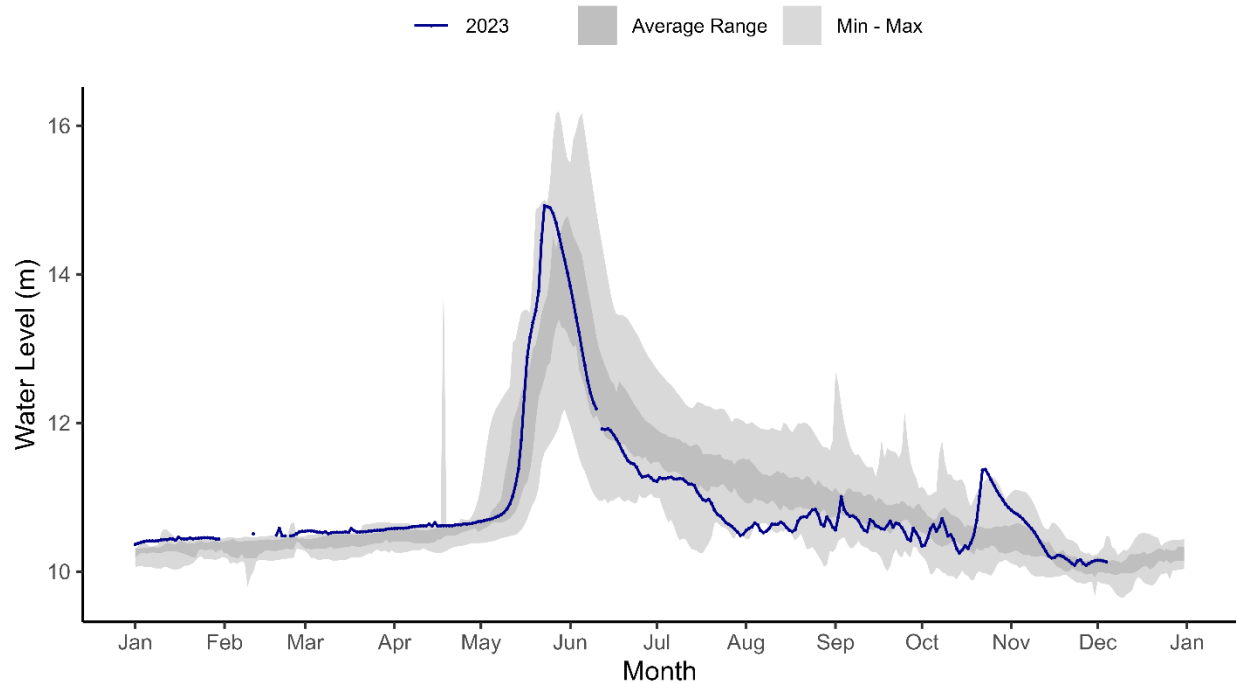
Mackenzie River (East Channel) at Inuvik [10LC002]

MACKENZIE RIVER (EAST CHANNEL) AT INUVIK (10LC002)

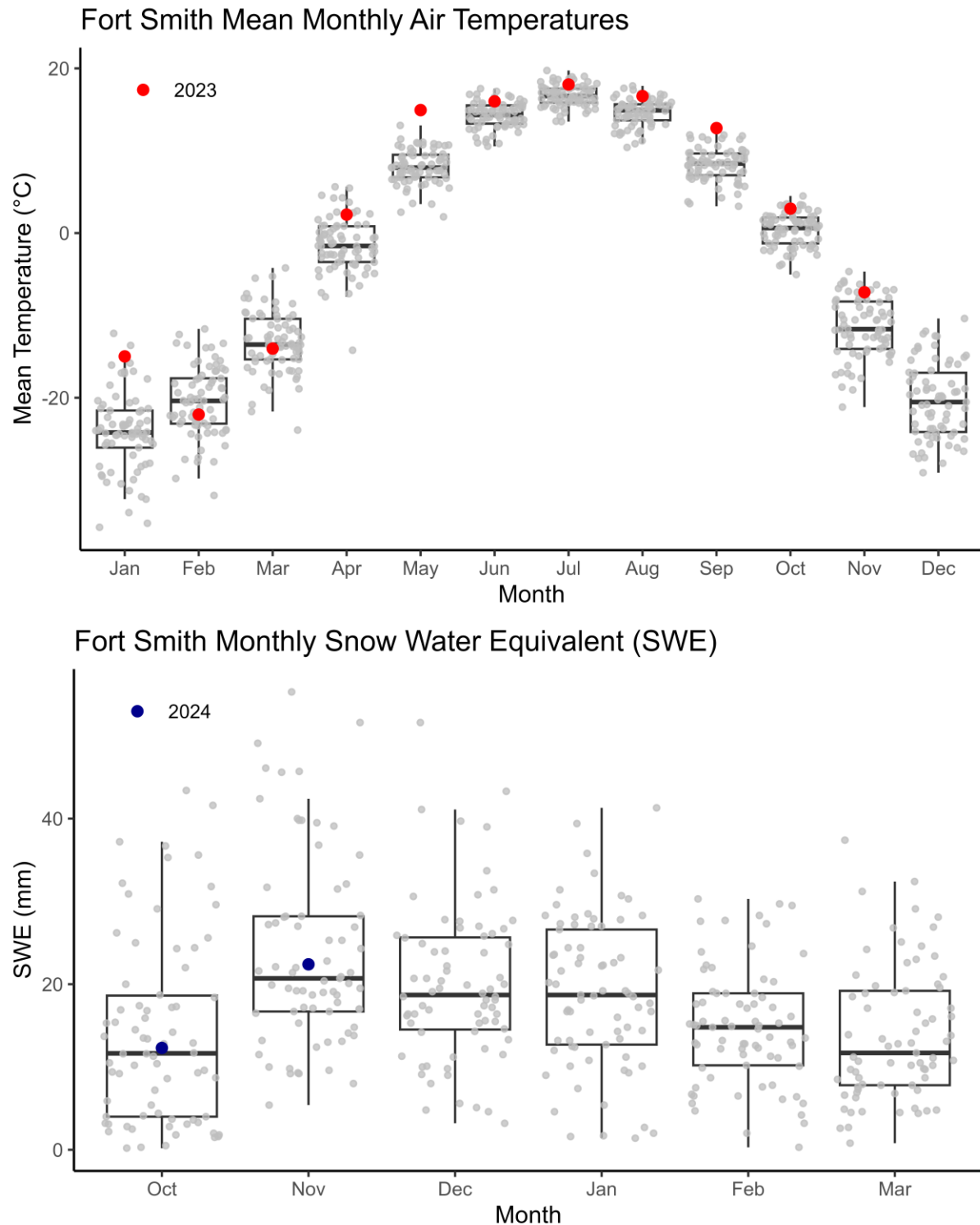


Mackenzie River (Peel Channel) above Aklavik [10MC003]

MACKENZIE RIVER (PEEL CHANNEL) ABOVE AKLAVIK (10MC003)

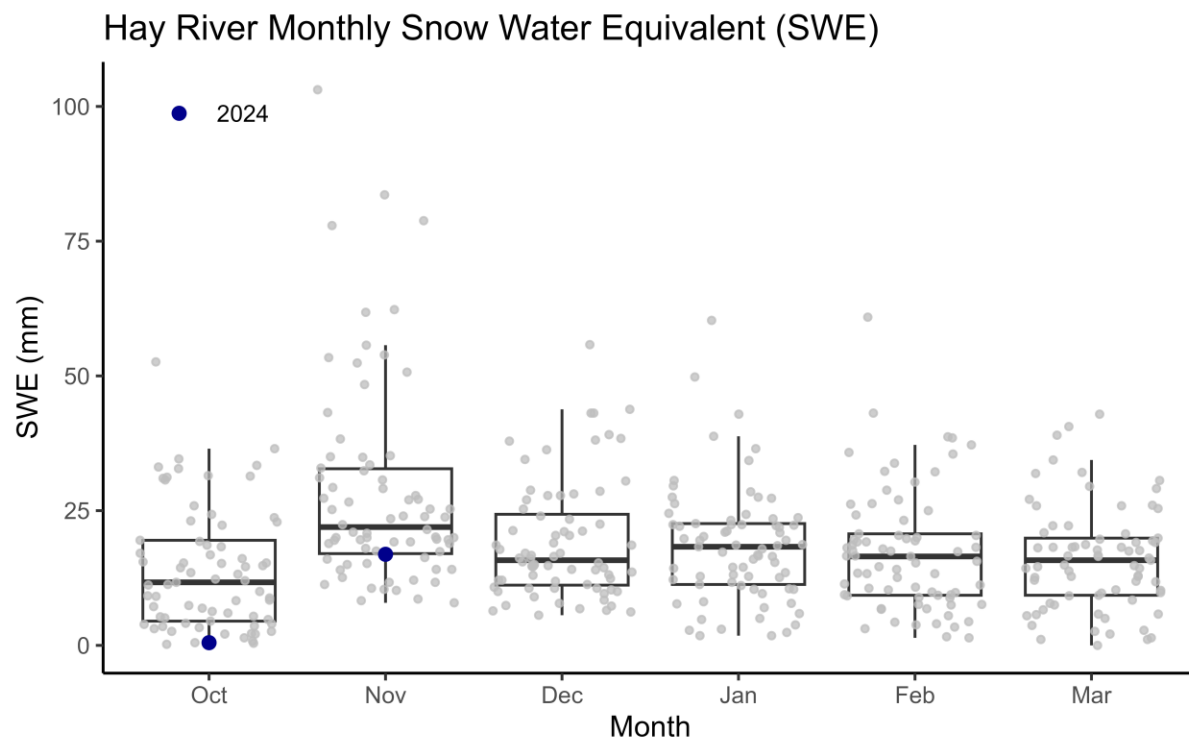
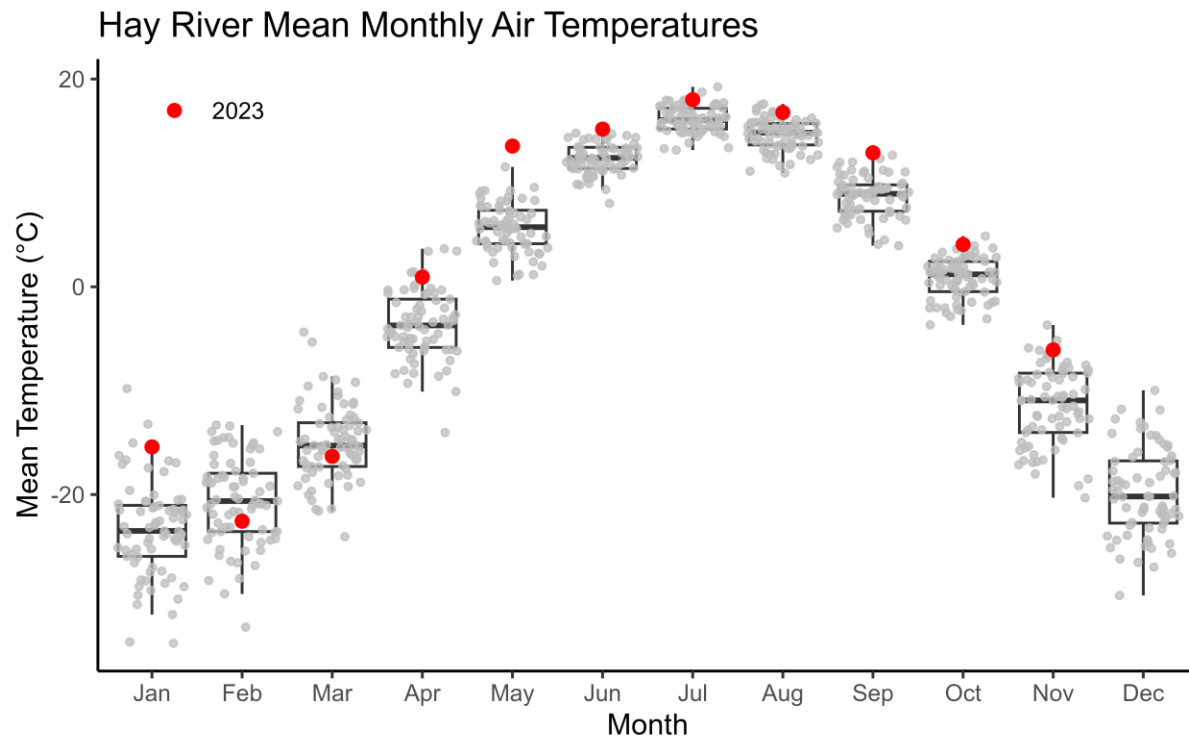


Climate Data:
Fort Smith

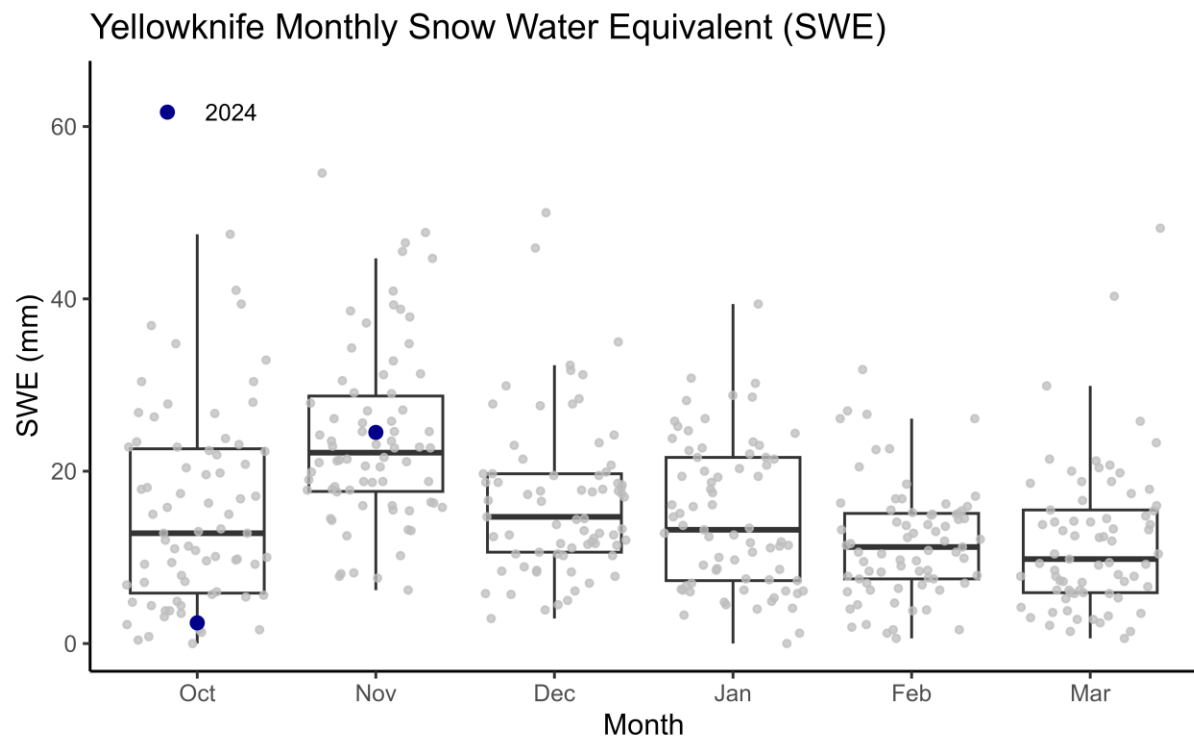
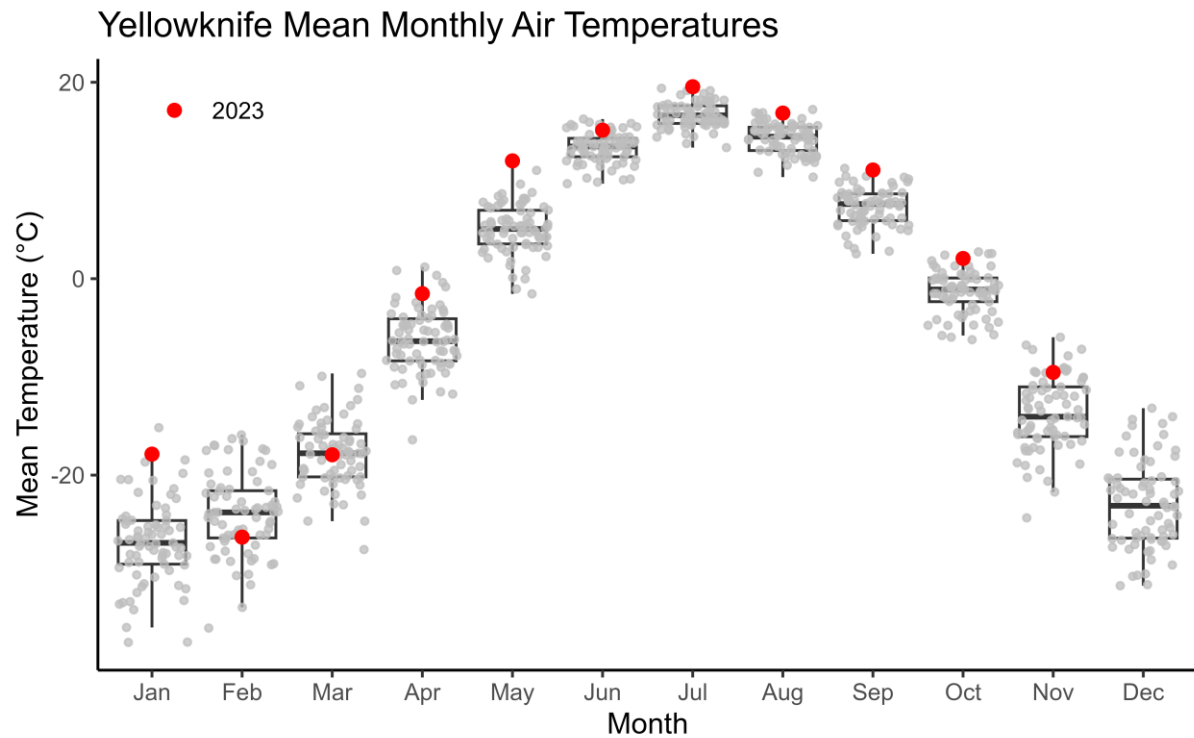


This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).

Hay River

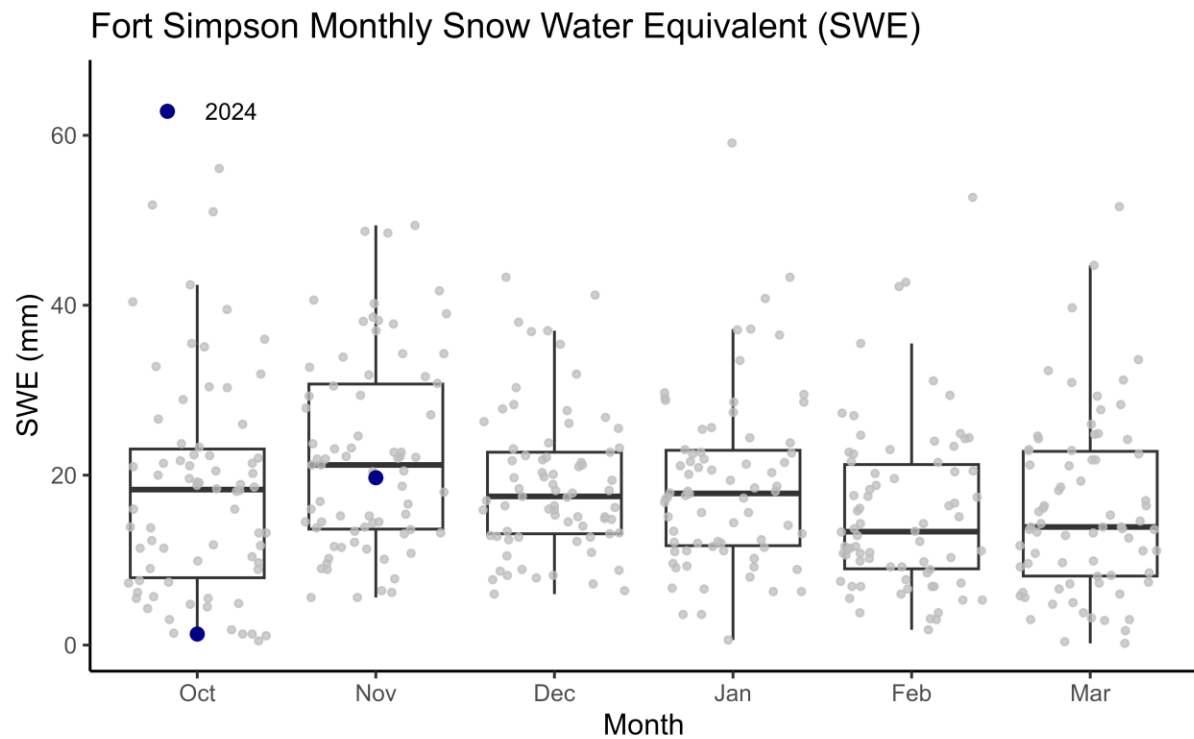
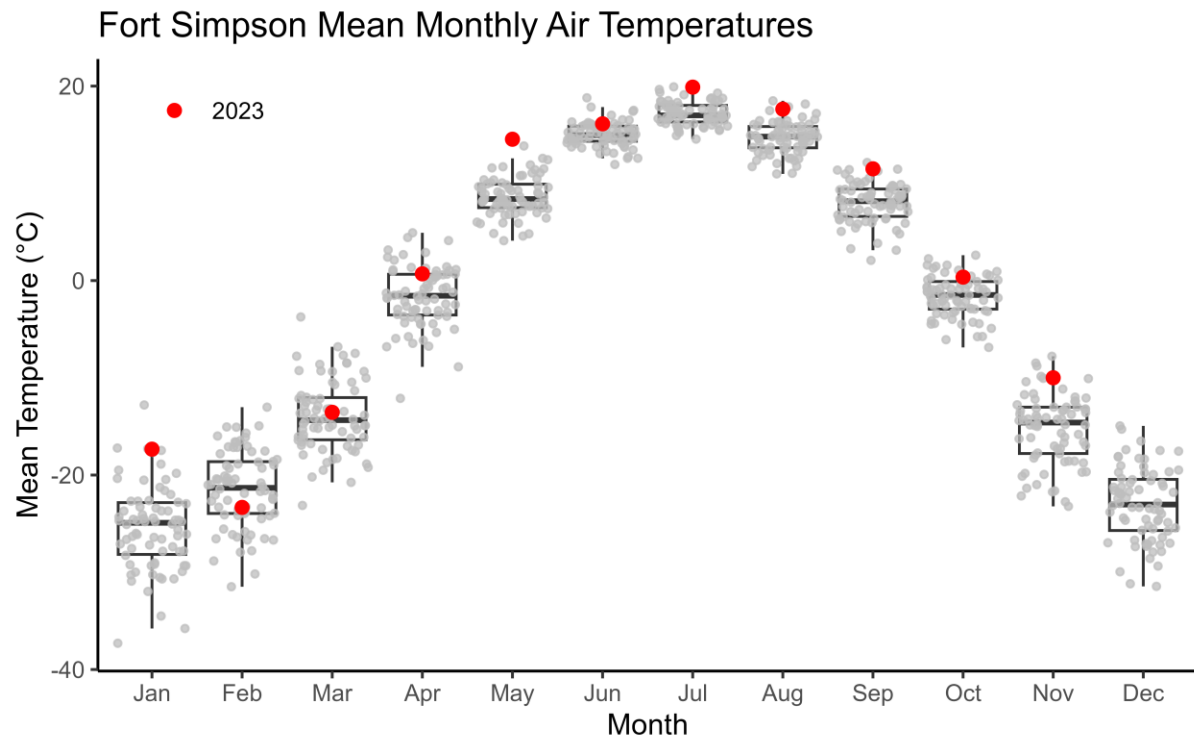


This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).



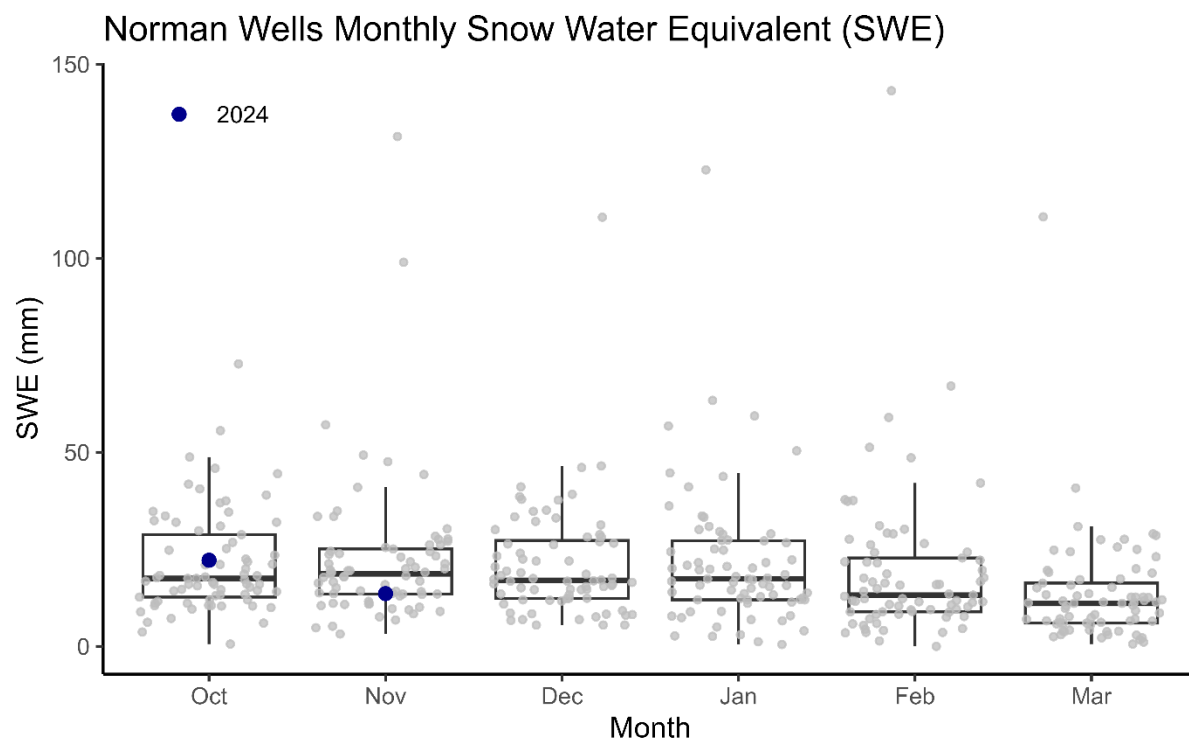
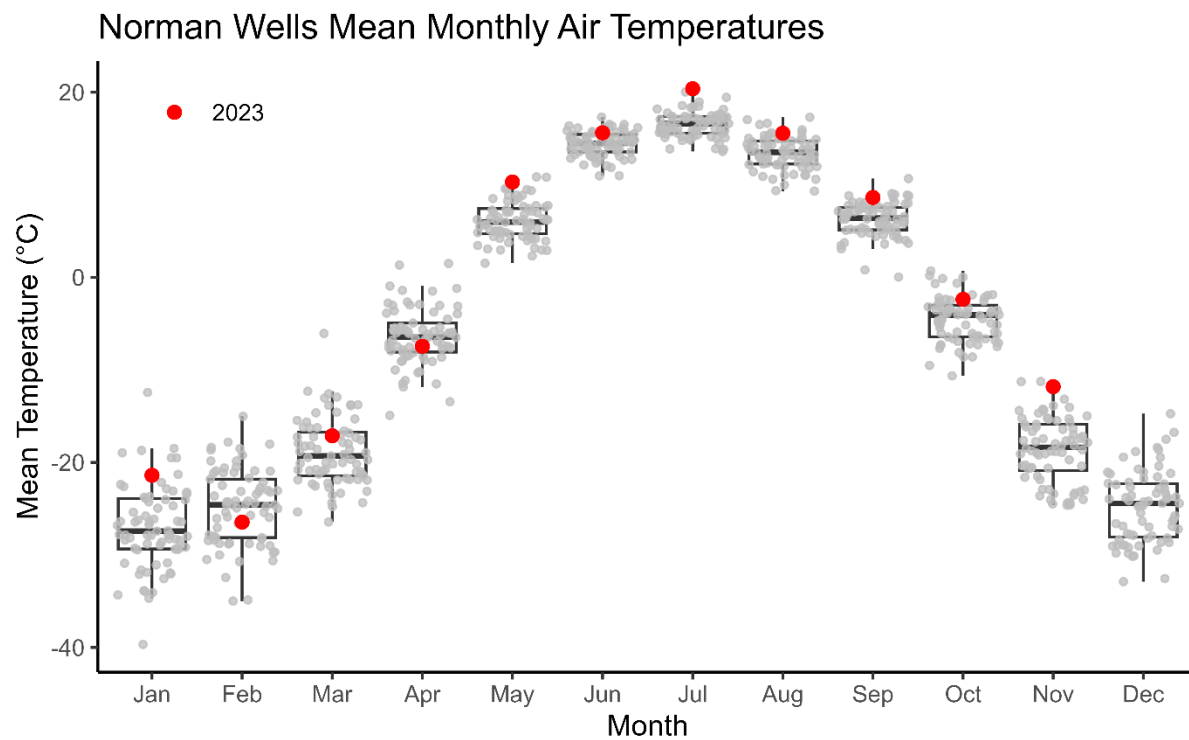
This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).

Fort Simpson

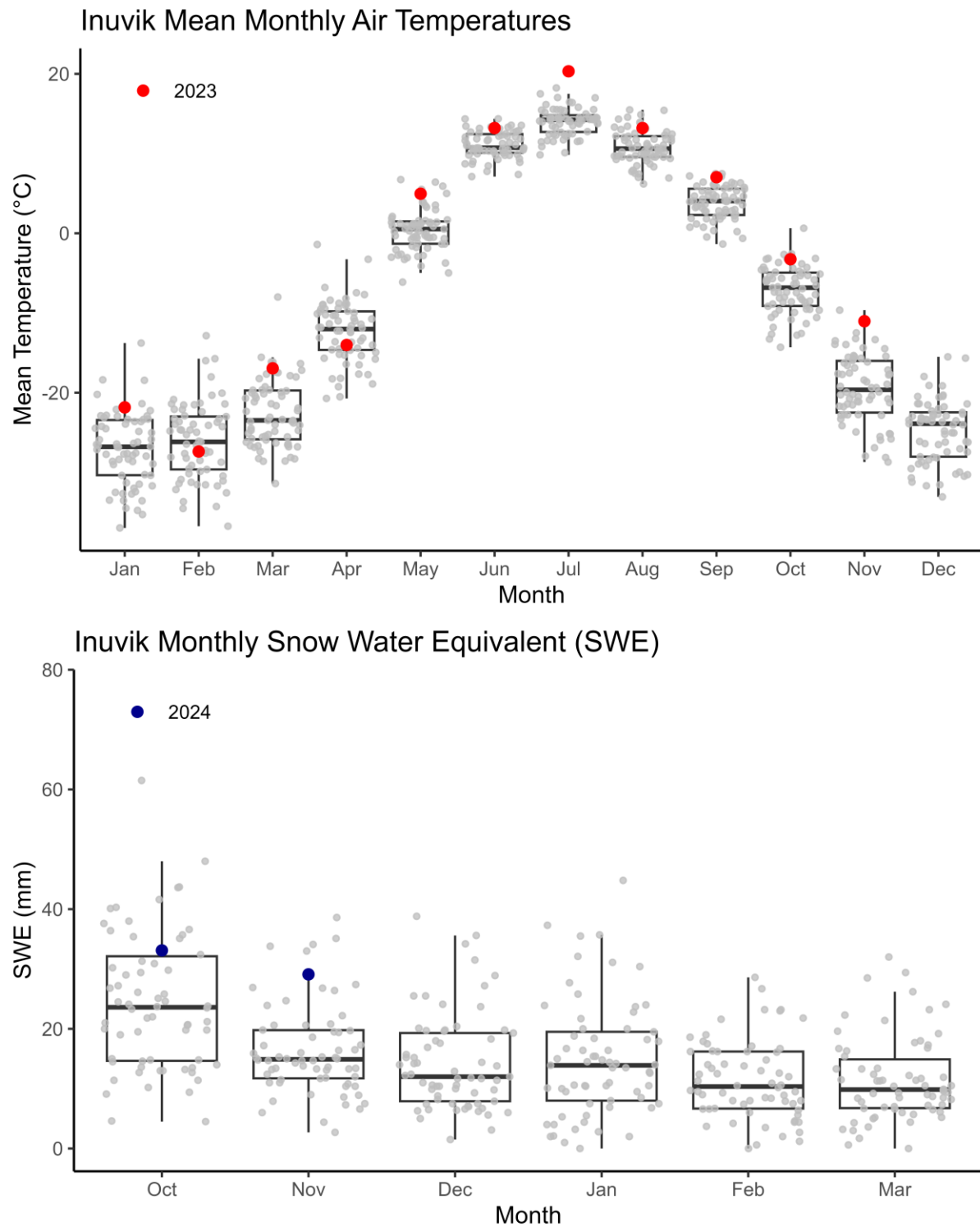


This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).

Norman Wells



This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).



This figure shows the amount of snow water equivalent (i.e., amount of water left when a snowpack is melted) over a winter (Oct to Mar). The year displayed as '2024' includes the last three months of 2023 (Oct, Nov, Dec) as well as the first three months of 2024 (Jan, Feb, Mar).