

2023 Manitoba Basins Fall Conditions Report

Prepared by:

Hydrologic Forecast Centre

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EXECUTIVE SUMMARY

The Fall Conditions Report describes the hydrologic conditions of Manitoba basins at the time of freeze-up. Hydrologic conditions at the time of freeze-up and weather conditions in winter and spring are the main factors that affect the extent of the spring runoff potential. This Fall Conditions Report describes the current state of two hydrologic factors for which data is available at the time of reporting. These two known factors covered in this report are the soil moisture at the time of freeze-up and base flows in rivers and water levels on lakes prior to freeze-up. The report also contains long term forecasted winter precipitation as a general indication of probable future weather and forecasted flows and levels throughout the winter for various rivers and lakes.

Summer and Fall Precipitation

Most Manitoba basins received below normal to well below normal precipitation throughout the summer and fall of 2023; with the exception of some localized areas in northern Manitoba and portions of the Red and Souris River basins in the United States that received near normal precipitation during this time. In most Manitoba basins, 2023 precipitation levels were less than historic May to October precipitation records (from 1981 to present) for 80% of the time.

November Precipitation

Recorded precipitation in November generally ranges from normal to below normal in most Manitoba basins, with the exception of southwestern Manitoba and the United States portion of the Red and Souris Rivers that received well below normal precipitation. Even though much of the November precipitation fell as snow, warmer temperatures allowed for the snow to melt and contribute to soil moisture levels, thus leaving very little snow accumulation on the ground.

Soil Moisture at Freeze-up

Soil moisture at the time of freeze-up is one of the major factors that affects spring runoff potential and flood risk. Soil moisture is generally normal to below normal for most Manitoba basins. The Interlake region, including the Fisher and Icelandic River basins and southeastern Manitoba have near normal soil moisture, while most other basins – including western and northern basins – have generally below normal soil moisture levels. Normal to below normal soil moisture levels thus far indicate a potential for normal to below normal spring runoff within these river basins,

however, the extent of spring runoff is still largely dependent on future weather conditions, including the amount of winter and spring precipitation, as well as snow melt conditions.

River Flows and Lake Levels

Another factor that affects the spring runoff potential is the amount of water currently in the system, as represented by base flows in rivers and the water levels on lakes prior to freeze-up. Base flow is a portion of the stream flow that is not from surface runoff; it is water from the ground, flowing into the river channel over a period of time. Water levels on lakes indicate how much capacity the lakes have to receive spring runoff. Base flows and levels on most Manitoba rivers are normal to below normal for this time of the year.

Lake Manitoba is within its operating range of 810.5 ft – 812.5 ft; Lake Winnipeg is within its operating range of 711 ft – 715 ft; and Lake St. Martin is within its operating range of 797.0 ft – 800.0 ft. All the three lakes are tracking between 0.5 ft to 1.0 ft below normal levels for this time of year. Dauphin Lake is within its operating range of 853.0 ft – 854.8 ft and near normal for this time of year. Lake Winnipegosis and Whiteshell Lakes are currently tracking below normal conditions for this time of the year. Inflow into Lake of the Prairies (Shellmouth Reservoir) is tracking near normal condition for this time of the year. The Shellmouth dam is being operated in consultation with the Shellmouth Reservoir Regulation Liaison Committee to drawdown the reservoir in preparation of spring runoff.

Long-term Precipitation Outlook

Winter precipitation is another factor that affects spring runoff potential. Although long-term weather forecasts are not very reliable, they provide an indication of potential future snowfall amounts. Environment and Climate Change Canada's latest long-term precipitation forecast indicates a potential for equal chances of above normal, below normal or near normal precipitation from December to February for most Manitoba basins. The National Weather Service Climate Prediction Center's outlook indicates a potential for below normal precipitation for most parts of the Red and Souris River basins within the United States between December and February; with equal chances of near normal, above normal or below normal precipitation predicted from January to March. Global weather prediction centres indicate that an El Niño climate condition is expected to persist through the winter and spring. The effect of El Niño is variable across the globe, but

generally, for Manitoba, it is characterized by above normal temperatures and below normal to near normal precipitation from December to April.

Forecasted Winter Flows and Levels

The Fall Conditions Report also contains forecasted flows and levels on major rivers and lakes for near normal winter weather conditions prior to the spring runoff. The Assiniboine River is forecasted to remain at near normal flows and levels in the period prior to the spring runoff. Flows and levels on the Red River are expected to maintain below normal conditions in the period prior to the spring runoff. Flows on the Waterhen, Fairford, and Dauphin Rivers will remain below normal. Lake Manitoba is expected to remain near 811.3 ft throughout the winter. Lake Winnipeg is expected to be near 712.5 ft by end of March. Lake Winnipegosis will remain near the current level of 830.1 ft throughout the winter and Lake St. Martin is expected to be near 799 ft before the spring runoff.

The Hydrologic Forecast Centre of Manitoba Transportation and Infrastructure works in collaboration with Environment and Climate Change Canada, the National Weather Service of United States, and flood forecasters in neighbouring jurisdictions to regularly monitor the winter precipitation patterns throughout Manitoba basins.

At this point in time, it is not practical or feasible to provide a reliable long-term flood forecast for spring 2024 as conditions could change significantly during the coming months. Basins with below normal to normal soil moisture conditions, base flow, and lake level conditions indicate a higher chance for below normal to near normal flows and levels in spring runoff. However, there will be a chance of receiving above normal spring runoff if heavy winter or spring precipitation and a fast snowmelt occur. Conversely, the risk of spring flooding could decrease if less winter precipitation occurs, or if a gradual snowmelt rate or less precipitation were to occur in early spring.

Looking back at some of the most significant historic flood or drought events, each event is caused by a combination of multiple unique circumstances. There is an inherent risk of over-estimating or under-estimating the extent of spring runoff if one considers the conditions and available precipitation four months in advance of the spring runoff. The Hydrologic Forecast Centre will continue to monitor watershed conditions closely and will release spring runoff outlooks through the winter as required.

BACKGROUND

The spring runoff potential is generally dependent on six major factors:

- Winter precipitation;
- Soil moisture at freeze-up;
- Effective spring rain (April rainfall);
- Melt rate;
- Depth of frost; and
- Base-flow conditions

All of the above factors combine to determine the magnitude of spring runoff, which could range from a major flood event to an extremely low runoff event. The combination of these factors is generally unique for each specific year and for each specific watershed across the province. Generally, the soil moisture at freeze-up, winter precipitation, and base flow conditions are well known before spring melt and give a strong indication of the *runoff potential*.

SUMMER AND FALL PRECIPITATION

Most Manitoba basins received below normal to well below normal precipitation throughout the summer and fall of 2023; with the exception of some localized areas in northern Manitoba and portions of the Red and Souris River basins in the United States that received near normal precipitation during this time (Figure 1). Compared to historic average precipitation from May to October, most Manitoba basins received 75 mm less precipitation in 2023; with some dry areas in southern and western Manitoba receiving 125 mm less precipitation during this time (Figure 2). Compared with historic records, precipitation received in most Manitoba watersheds from May to October rank in the lower 20%; with some areas in south and western Manitoba in the lower 5%, which is considered extreme dry condition (Figure 3). In other words, in most Manitoba basins, historic May to October precipitation exceeded 2023 levels for over 80% of the time, with some areas in south and west Manitoba receiving near record low precipitation amounts.

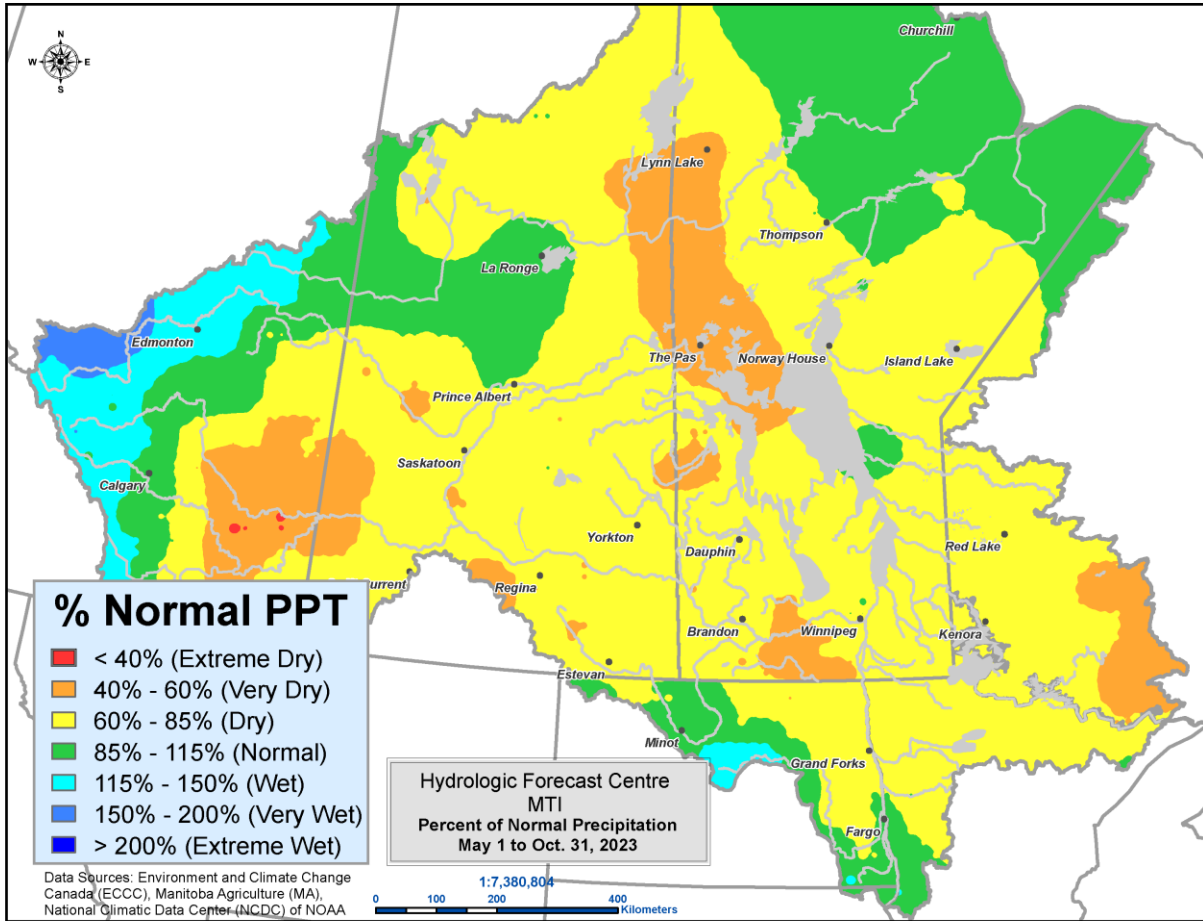


Figure 1. Percent of normal precipitation (%) from May 1 to Oct 31, 2023.

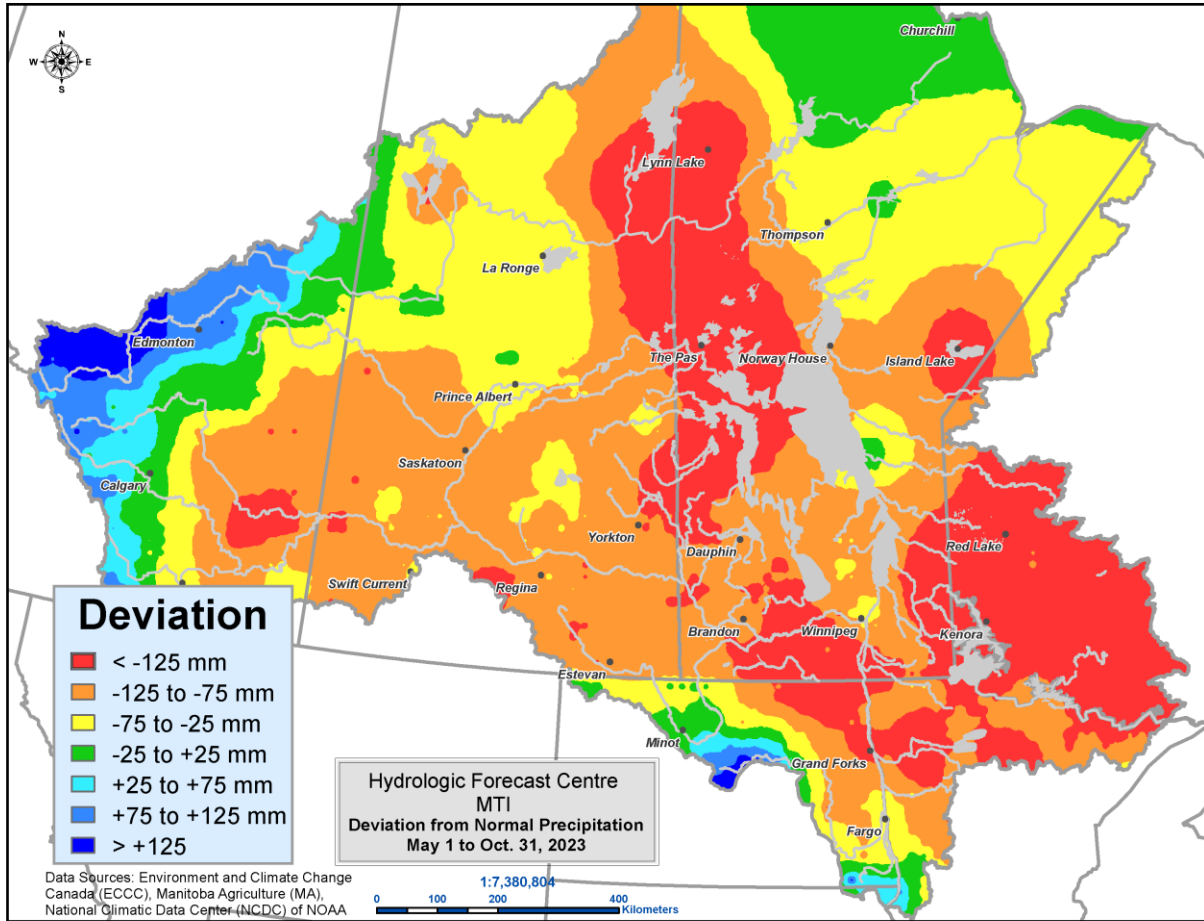


Figure 2. Deviation from normal precipitation (mm) from May 1 to Oct 31, 2023.

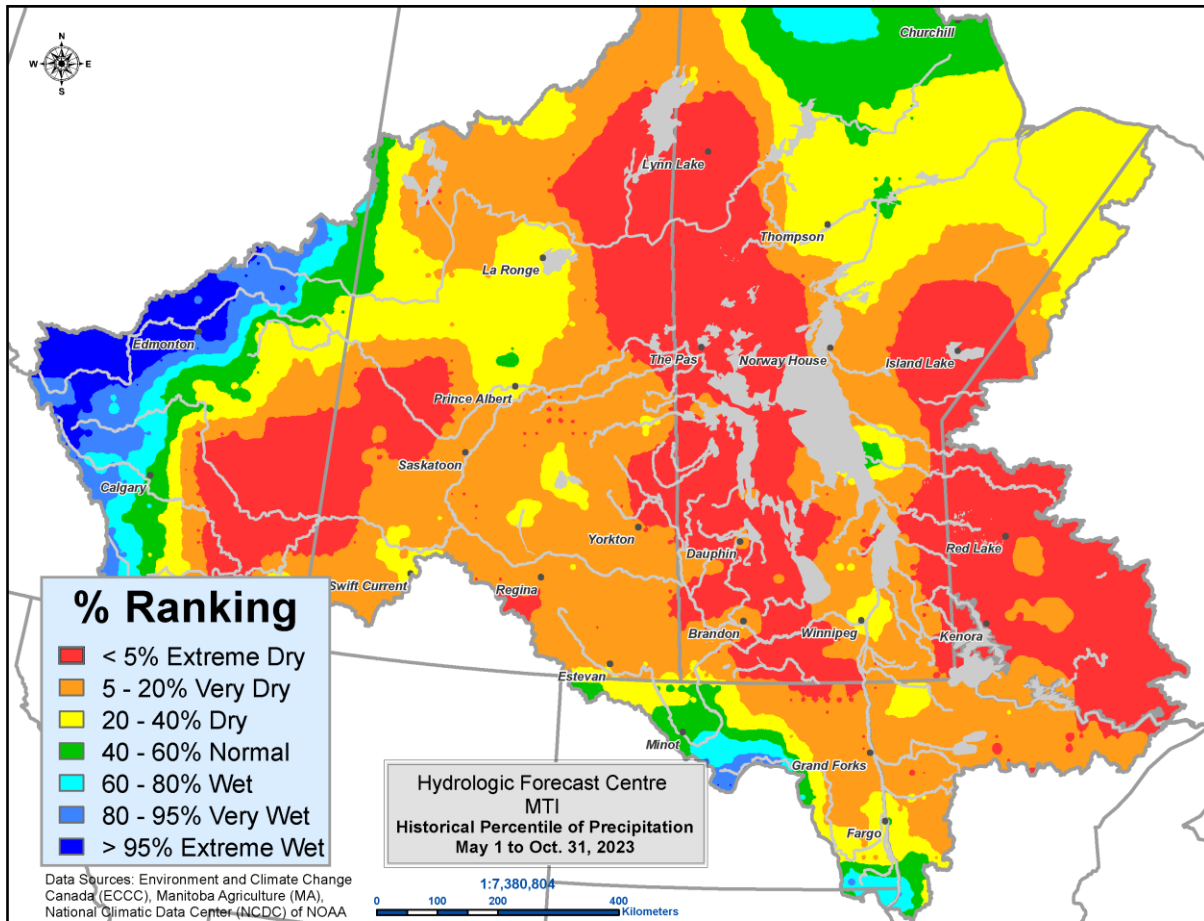


Figure 3. Percent ranking precipitation (%) from May 1 to Oct 31, 2023.

NOVEMBER PRECIPITATION

Recorded precipitation in November generally ranged from normal to below normal in most Manitoba basins, with the exception of southwestern Manitoba and the United States portion of the Red and Souris Rivers that received well below normal precipitation. Even though much of the November precipitation fell as snow, warmer temperatures allowed for the snow to melt and contribute to soil moisture levels, thus leaving very little snow accumulation on the ground (Figure 4).

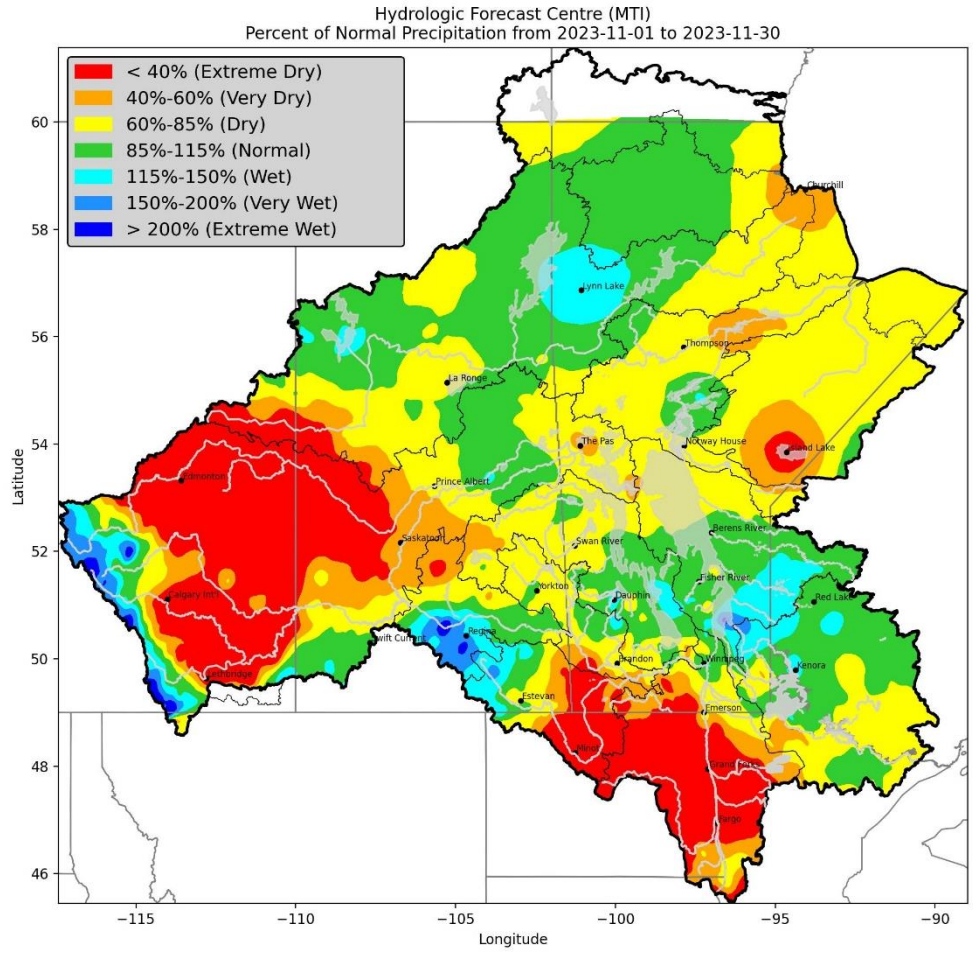


Figure 4. Percent of normal precipitation (%) for Nov 1 to Nov 30, 2023.

SOIL MOISTURE CONDITIONS

A number of different tools have been used to determine the soil moisture at freeze-up. The most common method, which has been used for years, is the Manitoba's MANAPI model, which is expressed by the API (Antecedent Precipitation Index) method. The MANAPI model indicates the degree of saturation in the soil. This method uses the recorded precipitation at a large number of meteorological stations throughout the various basins to calculate the amount of water from summer and fall rain that remains in the soil layer and has yet to contribute to runoff. Figure 5 shows the API map for the fall of 2023 expressed in percent of normal.

The API model results indicate that soil moisture is normal to below normal for most Manitoba basins. The Interlake region, including the Fisher and Icelandic River basins and southeastern Manitoba have near normal soil moisture, while most other basins – including western and northern basins – have generally below normal soil moisture levels.

Manitoba Agriculture also collects soil moisture measurements in the top 120 cm of the soil through its automatic weather monitoring stations located at various places across the province. Soil moisture measurements collected in the top 120 cm through monitoring sensors indicate the soil moisture throughout southern and central Manitoba as of October 29 is generally optimal with localized areas that are either drier than normal or wetter than normal (Figure 6).

Agriculture and Agri-Food Canada models soil moisture condition through the drought model. Results indicate, soil moisture is near normal in central and eastern Manitoba and below normal in portions of southern and western Manitoba (Figure 7).

The National Weather Service Climate Prediction Center, through its soil moisture monitoring and modelling works, indicates below normal soil moisture for the United States portion of the Red and Souris River basins (Figure 8).

In summary, soil moisture in most Manitoba basins, including basins in Ontario, Saskatchewan and the United States, is near normal to below normal, with the exception of some localized areas that have either above normal or well below normal soil moisture levels.

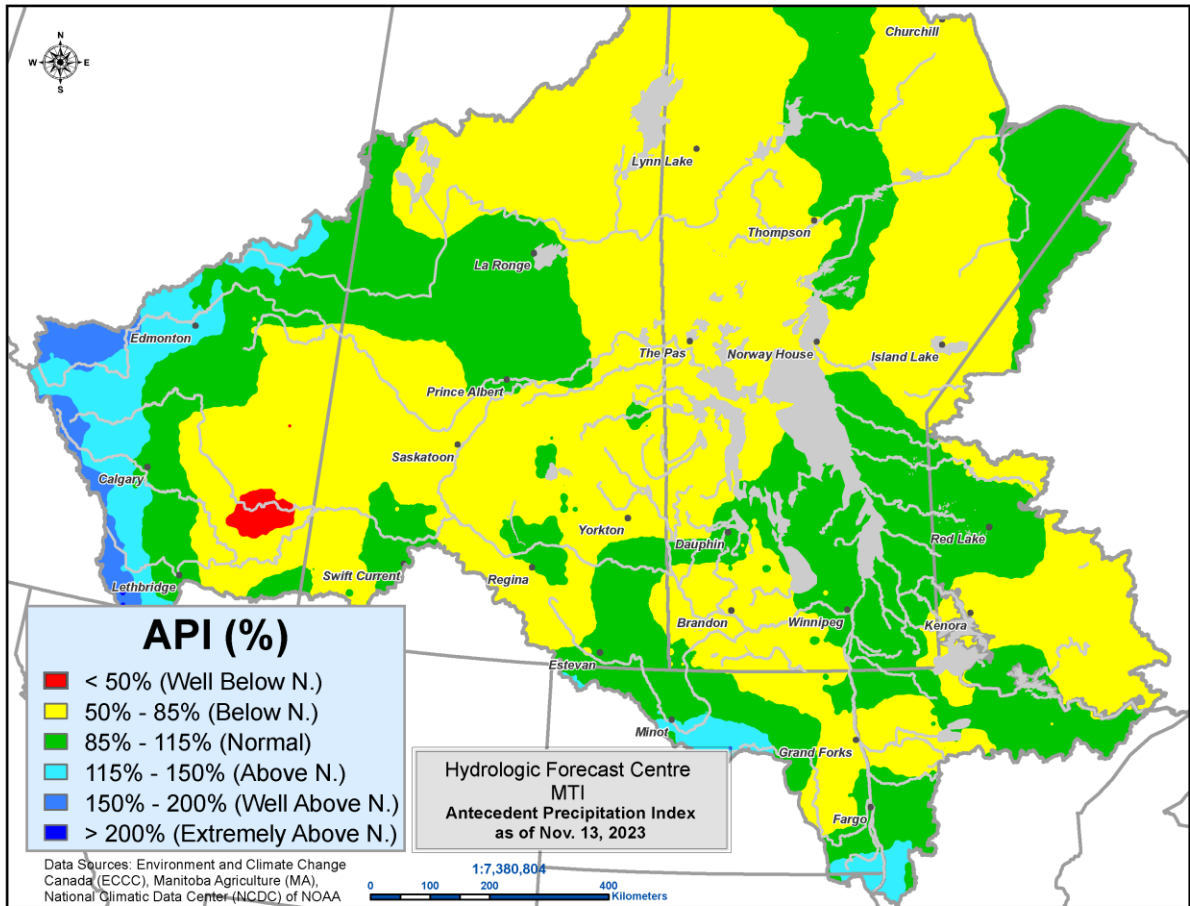


Figure 5. Antecedent Precipitation Index (API) (%) for 2023.

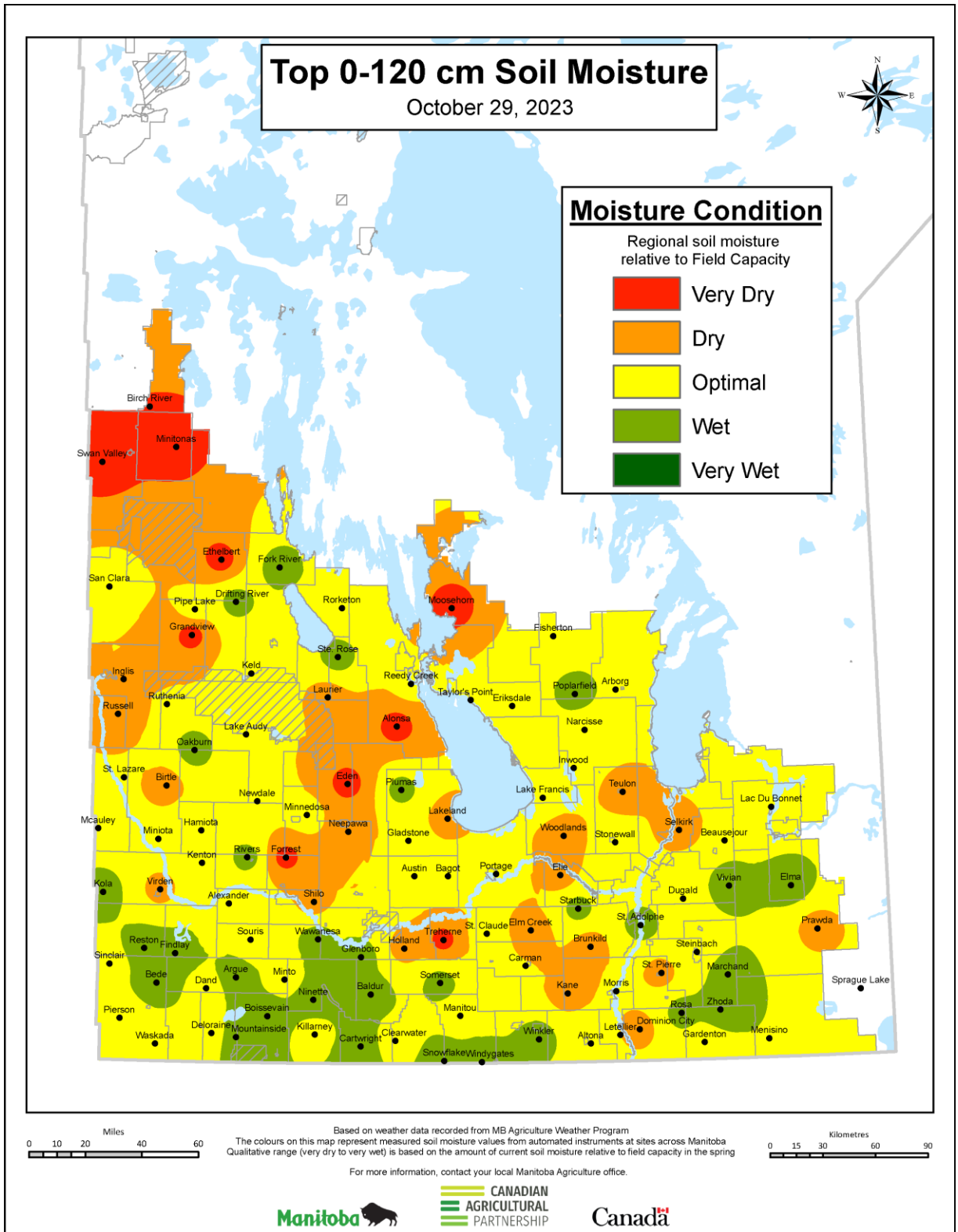


Figure 6. Soil moisture in top 0 to 120 cm based on field measurements as of October 29, 2023.

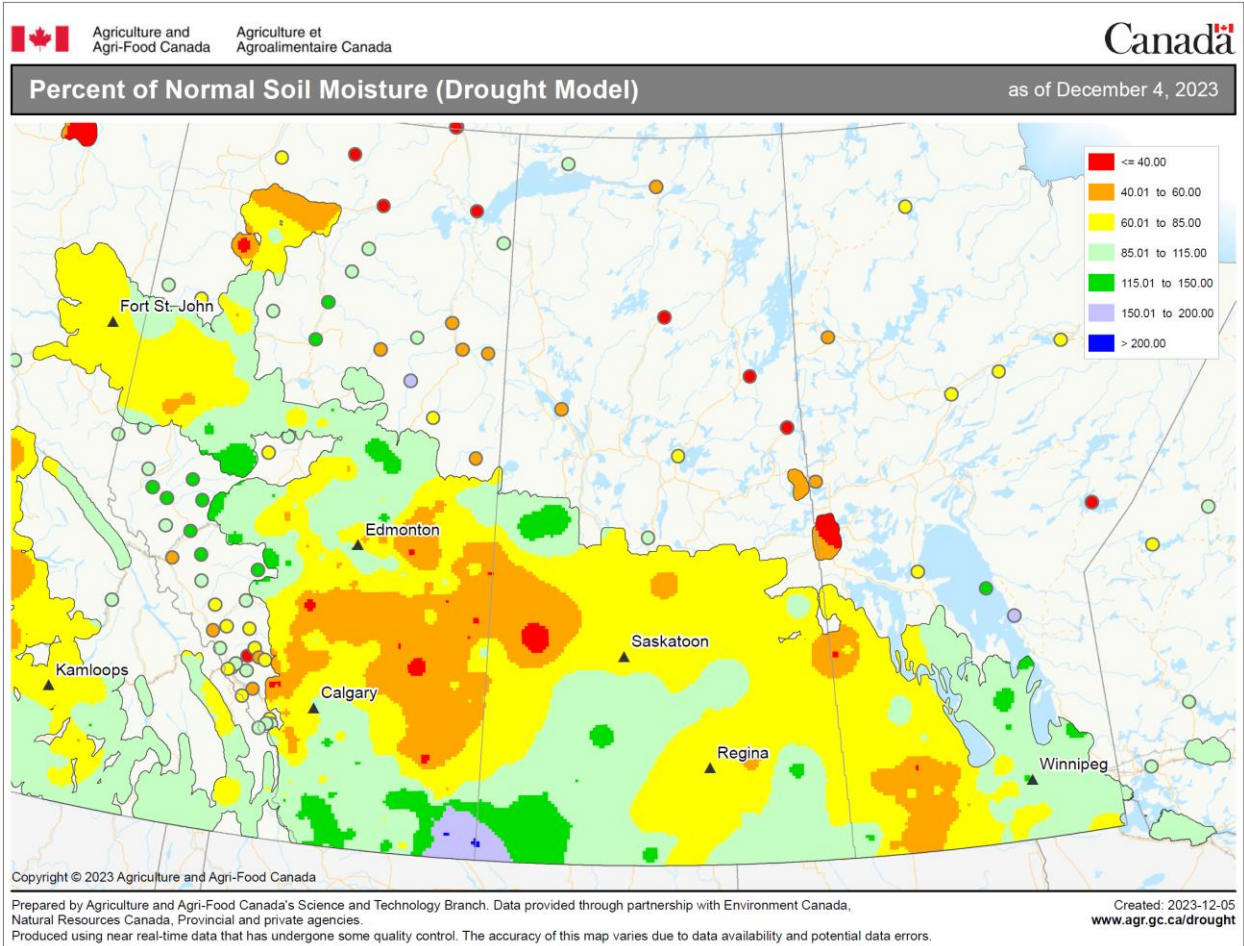


Figure 7. Percent of Normal Soil Moisture from Agriculture and Agri-Food Canada as of December 04, 2023.

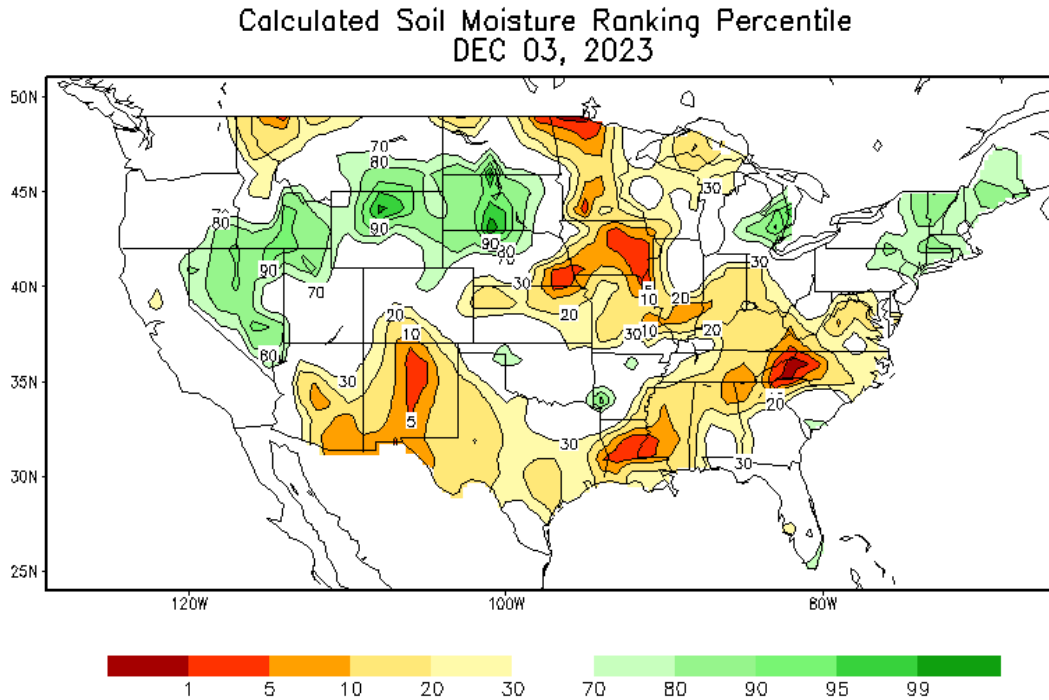


Figure 8. Calculated soil moisture ranking percentile as of December 3, 2023, from the National Weather Service.

RIVER BASE FLOWS AND LEVELS

Rivers

Base flow is a portion of the stream flow that is not from surface runoff; it is water from the ground flowing into the river channel over a period of time. Base flows and levels range from near normal to below normal in most Manitoba rivers. Figure 9 shows current base flows in comparison with historic records. Hydrographs showing the measured or estimated flows on major Manitoba rivers as of December 1, 2023 are shown in Figures 10 to 21. Figures 10 to 21 also indicate the current conditions, and statistical lower decile, median, and upper decile flows /levels for major Manitoba Rivers. In most cases, near normal base flows indicate near normal ground saturations or near normal soil moisture content. Below normal base flows indicate below normal soil saturation level while above normal base flows indicate above normal soil saturation levels. Current flows for main

rivers at selected locations are listed in Table 1. (Note: Some flow readings might be affected by ice).

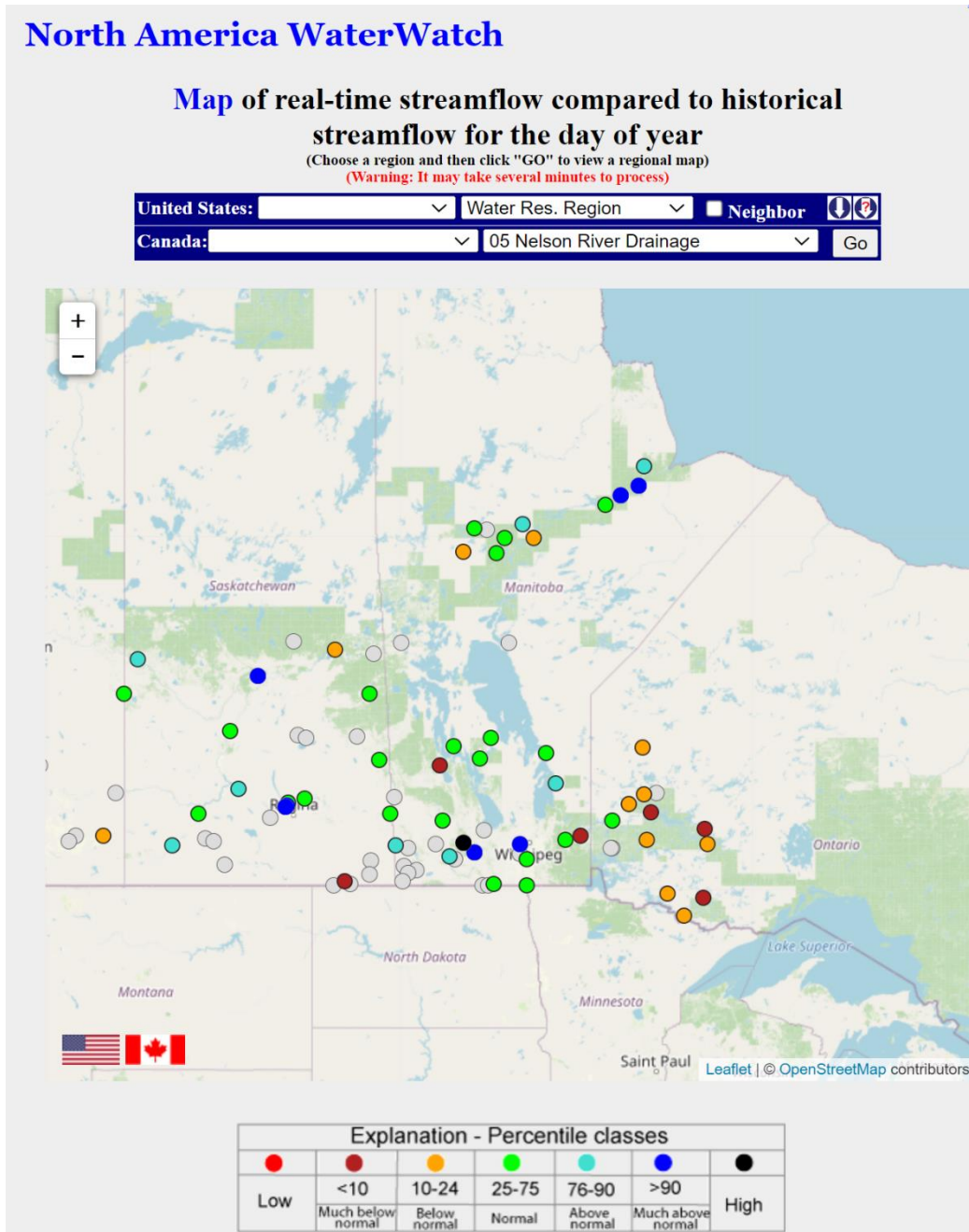


Figure 9. Base flow and level conditions as of December 3, 2023 (readings at some gauges might be affected by ice).

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Red River at James Avenue (Datum 727.57 ft)
 Dec 01, 2023 : -0.75 feet

05OJ015

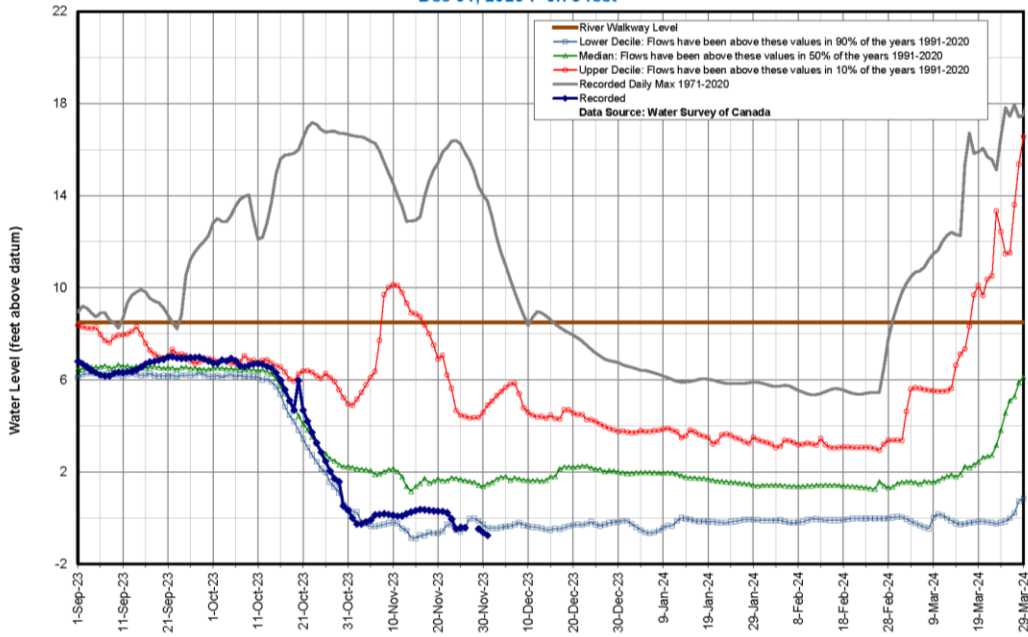


Figure 10. Red River water levels at James Avenue.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure

Red River at Emerson
 Dec 01, 2023 : 1,342 cfs

05OC001

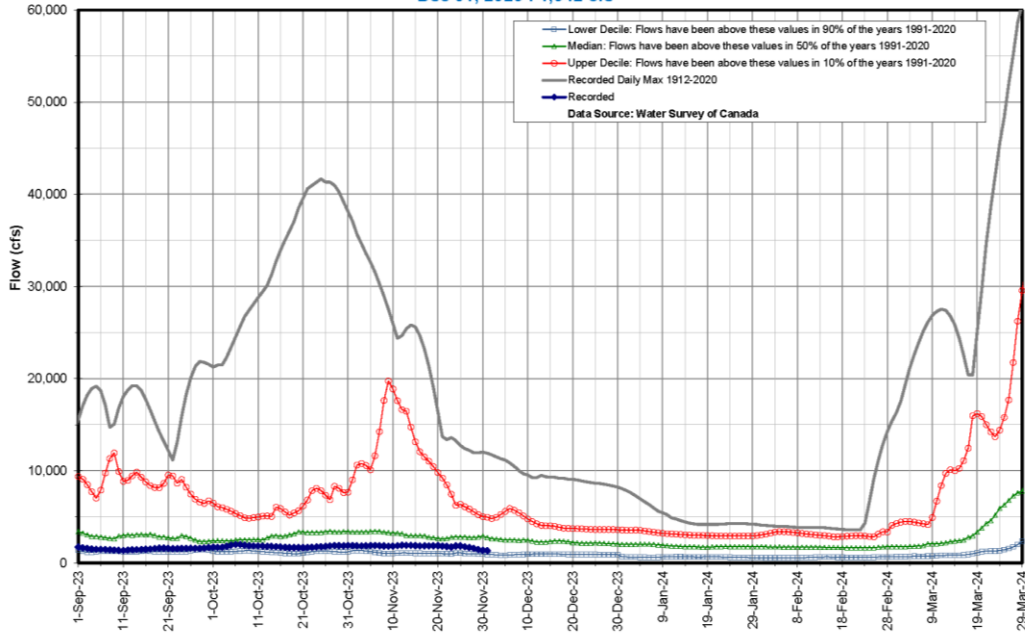


Figure 11. Red River flows near Emerson.

Red River near Ste. Agathe

Dec 01, 2023 : 1,734 cfs

05OC012

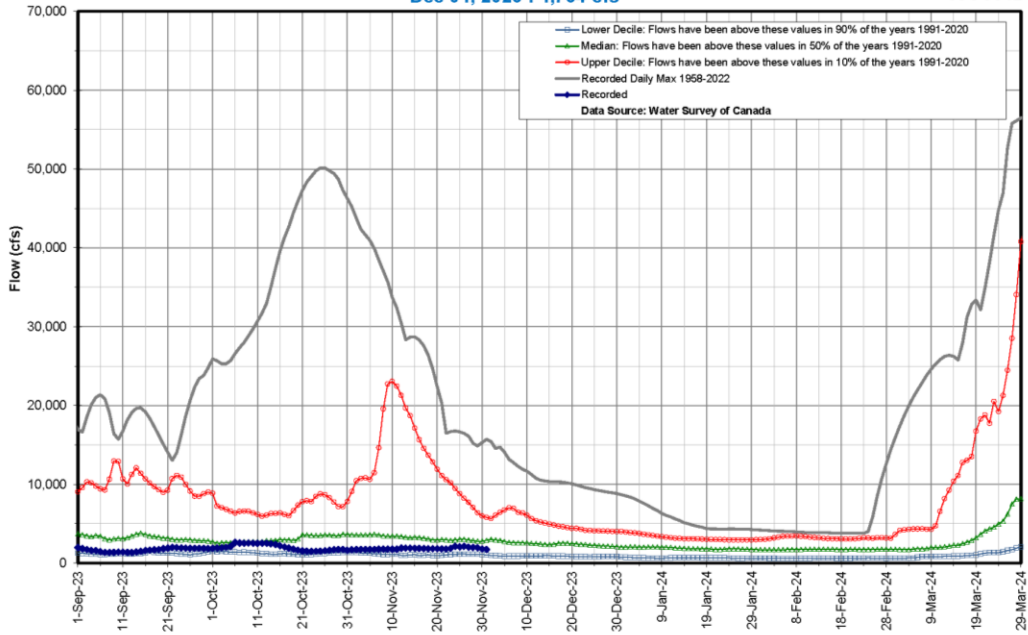


Figure 12. Red River flows near Ste. Agathe.

Souris River at Wawanesa

Dec 01, 2023 : 207 cfs

05NG001

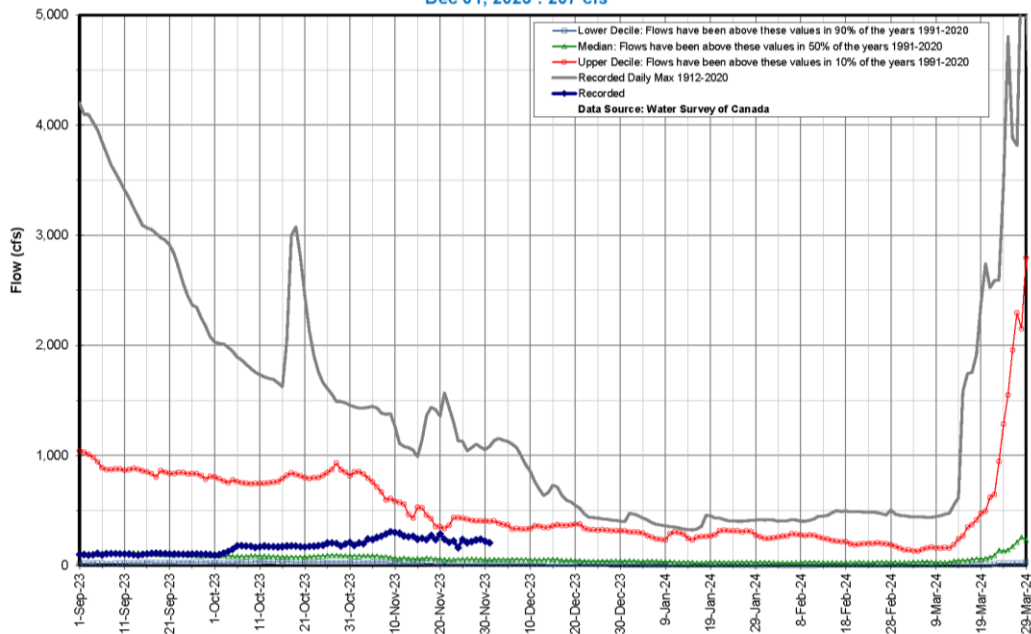


Figure 13. Souris River flows at Wawanesa.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Assiniboine River near Russell
 Nov 29, 2023 : 227 cfs

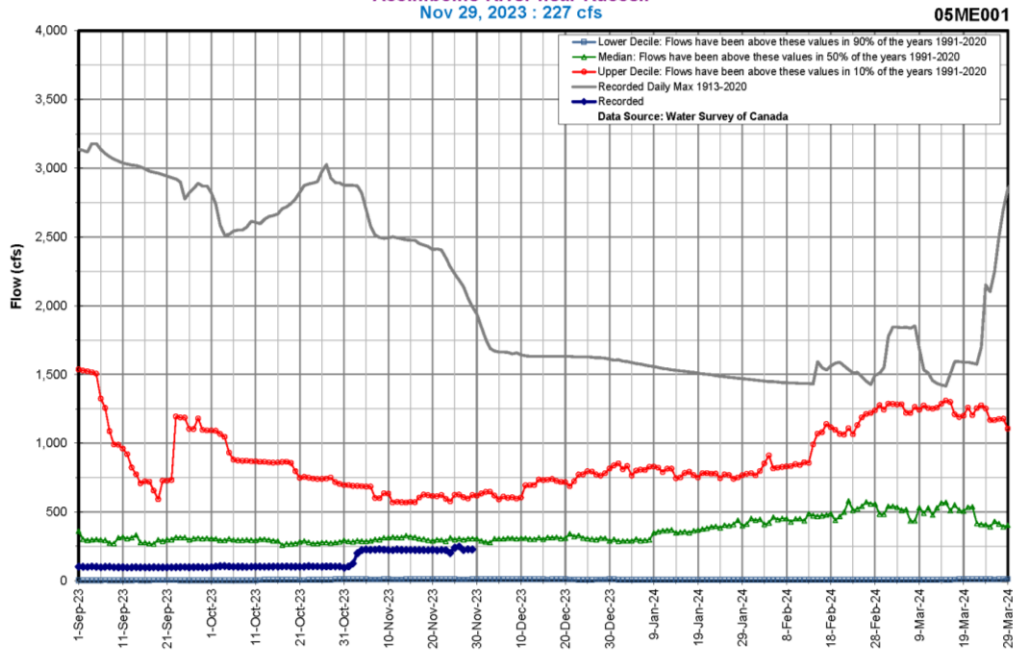


Figure 14. Assiniboine River flows near Russell.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Qu'Appelle River near Welby
 Dec 01, 2023 : 155 cfs

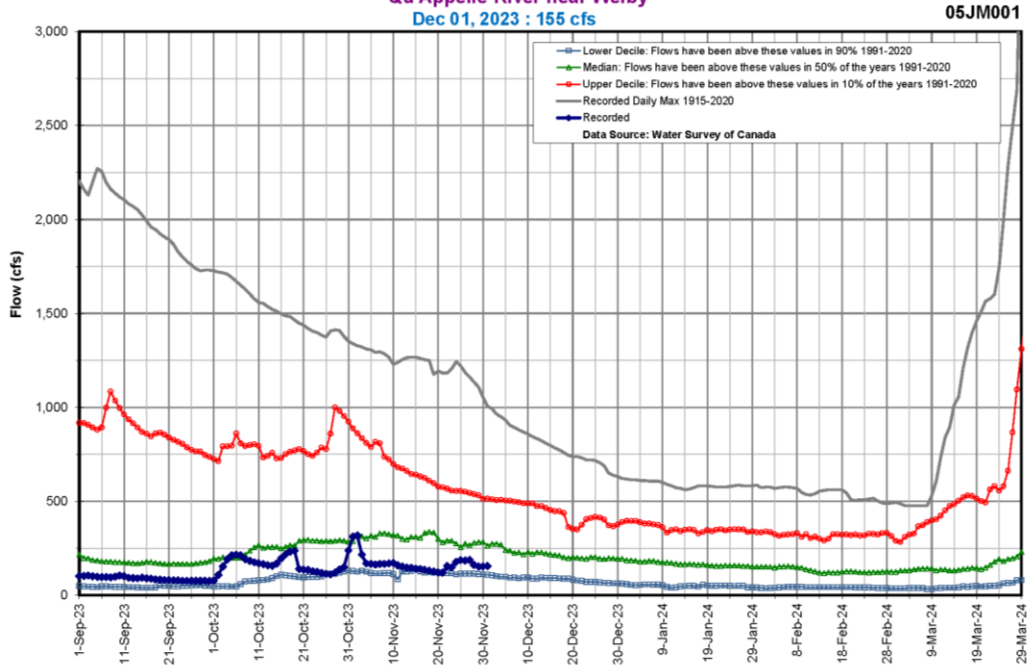


Figure 15. Qu'Appelle River flows near Welby.

Assiniboine River at Brandon

Dec 01, 2023 : 559 cfs

05MH001

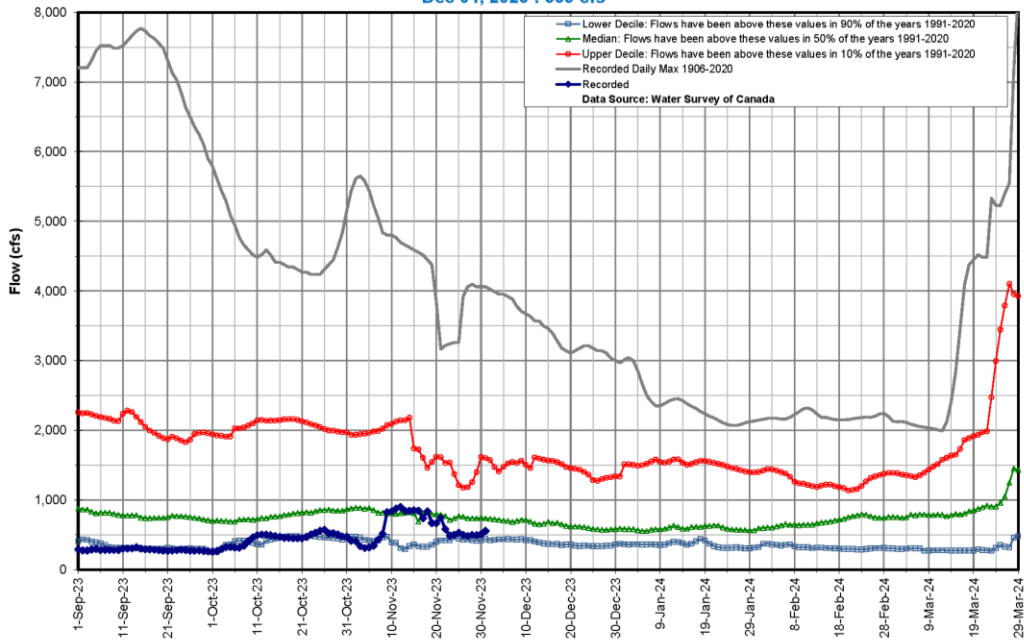


Figure 16. Assiniboine River flows at Brandon.

Assiniboine River at Headingley

Dec 01, 2023 : 852 cfs

05MJ001

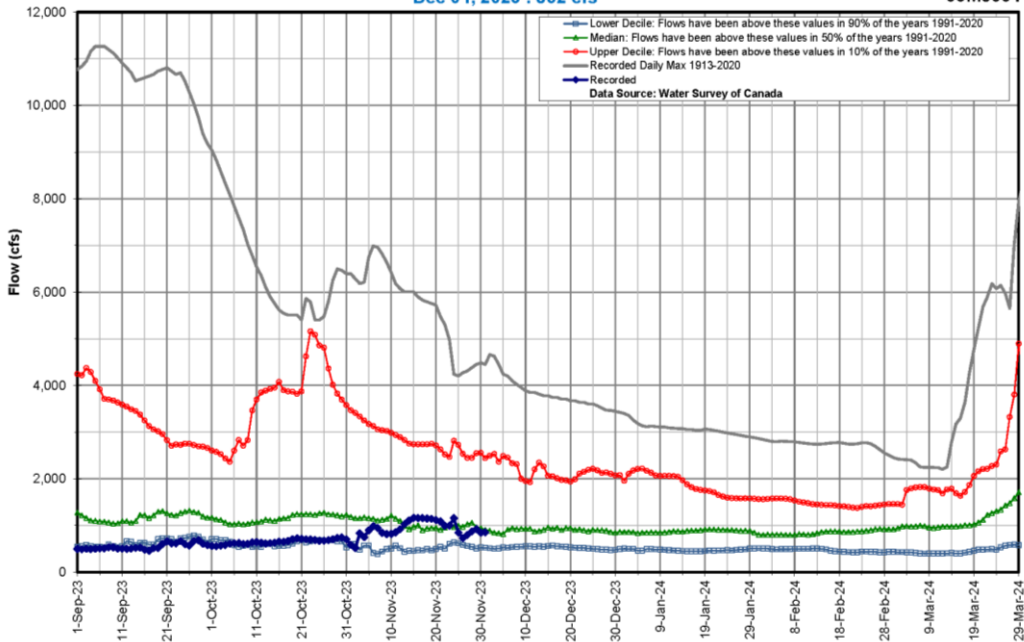


Figure 17. Assiniboine River flows at Headingley.

Waterhen River near Waterhen

Dec 01, 2023 : 2,022 cfs

05LH005

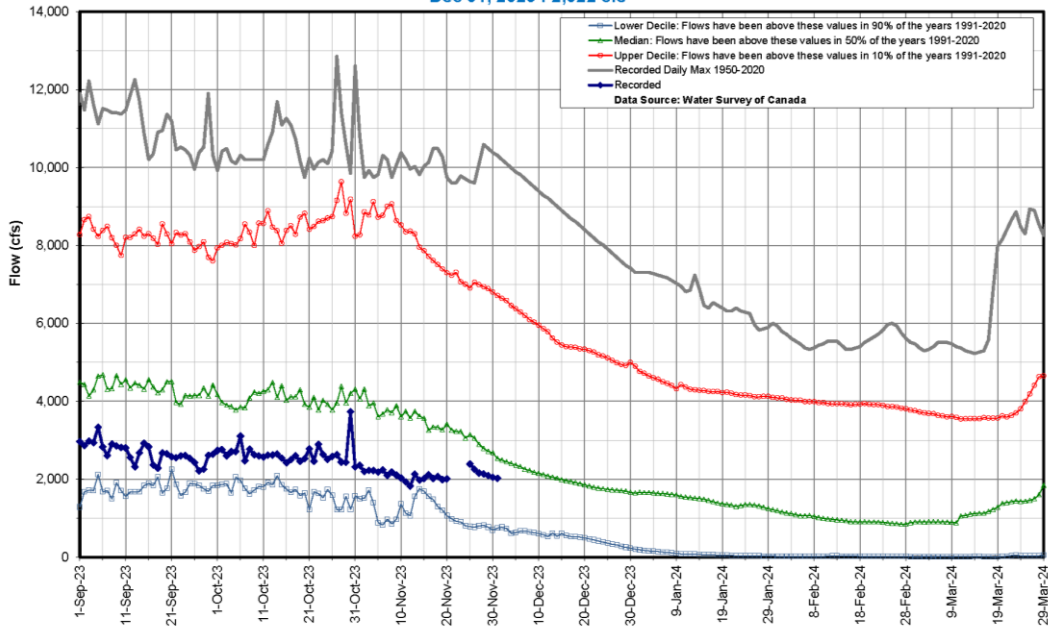


Figure 18. Waterhen River flows near Waterhen.

Fairford River near Fairford

Dec 01, 2023 : 2,251 cfs

05LM001

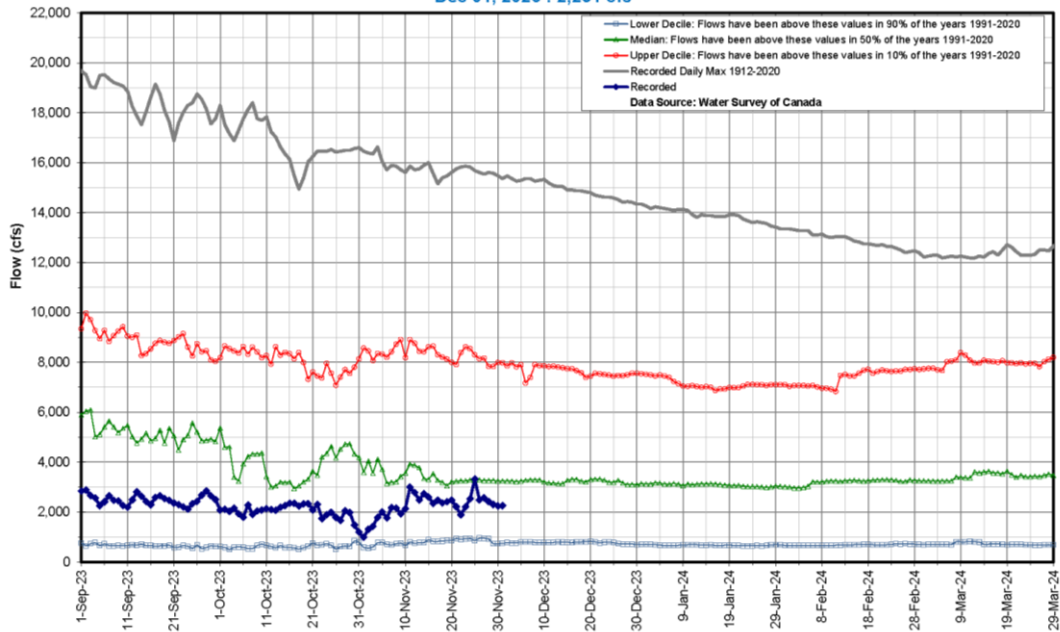


Figure 19. Fairford River flows near Fairford.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Dauphin River near Dauphin River
 Dec 01, 2023 : 3,030 cfs

05LM006

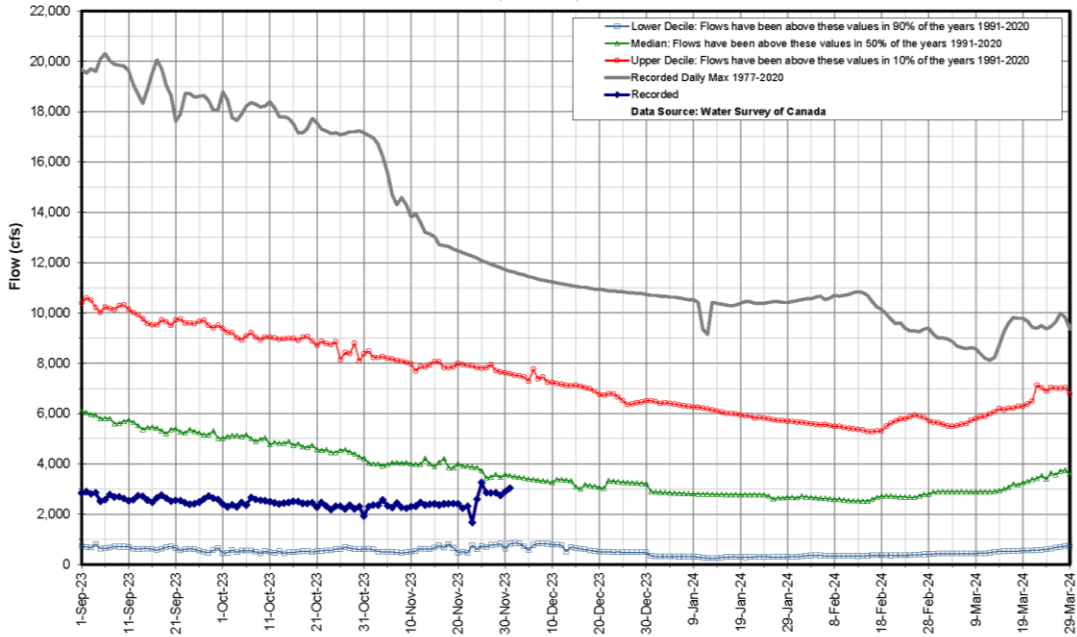


Figure 20. Dauphin River flows near Dauphin River.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Saskatchewan River at the Pas
 Dec 01, 2023 : 9,891 cfs

05KJ001

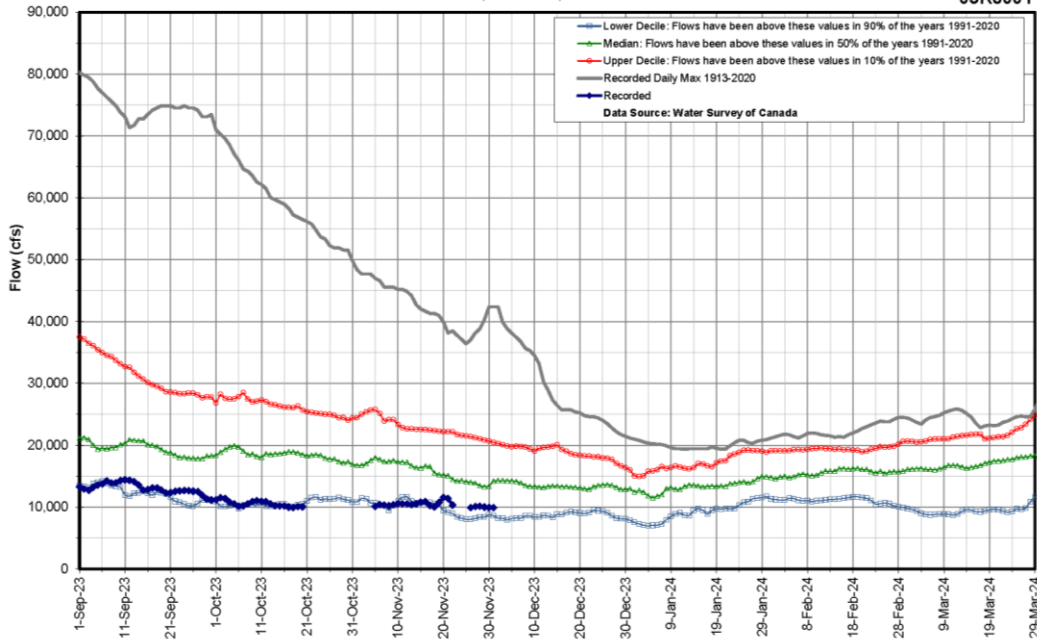


Figure 21. Saskatchewan River flows at The Pas.

Table 1. Flows for main rivers at selected locations as of December 1, 2023.

*Note – The Assiniboine River flows and levels are regulated by the operation of Shellmouth Dam.

** Note – The Red River Level at James Avenue is measured in relative to the long term mean winter ice level at James Avenue, which is 727.57 feet geodetic or 0 ft James.

Rivers	Location	Most Recent Flow/Level (Dec 1)	Minimum Flows/Levels	10 th Percentile	Normal flows/Levels	90 th Percentile	Maximum Flow/Level	Last time Flow/Level was lower than the current value	Period of Record
Red River	Emerson	1,342 cfs	28 cfs (1936)	278 cfs	1,642 cfs	3,468 cfs	11,901 cfs (2019)	922 cfs (2012)	110 years
	Ste. Agathe	1,734 cfs	219 cfs (1976)	530 cfs	2,514 cfs	4,944 cfs	15,715 cfs (2012)	1,406 cfs (2012)	62 years
	James Avenue Level**	-0.75 ft	-2.1 ft (1988)	-1.3 ft	1.2 ft	4.1 ft	13.7 ft (2019)	-0.8 ft (2006)	51 years
Assiniboine River	Russell	227 cfs	20 cfs (1968)	63 cfs	266 cfs	529 cfs	1,847 cfs (2010)	91 cfs (2021)	110 years
	Brandon	559 cfs	45 cfs (1937)	105 cfs	539 cfs	1,020 cfs	4,061 cfs (2010)	262 cfs (2021)	110 years
	Holland	1,010 cfs	215 cfs (1967)	430 cfs	1,033 cfs	1,288 cfs	4,450 cfs (2016)	310 cfs (2021)	62 years
	Headingley	852 cfs	120 cfs (1940)	200 cfs	720 cfs	1,235 cfs	4,450 cfs (2016)	363 cfs (2021)	110 years
Shellmouth Dam Release	Shellmouth	297 cfs	0 cfs (2022)	150 cfs	401 cfs	624 cfs	1,600 cfs (2010)	100 cfs (2022)	54 years
Souris River	Wawanesa	207 cfs	0 cfs (1938)	4 cfs	97 cfs	253 cfs	1,084 cfs (2014)	11 cfs (2021)	110 years
Qu'Appelle River	Welby	155 cfs	7 cfs (1988)	47 cfs	250 cfs	453 cfs	1,006 cfs (2010)	85 cfs (2021)	80 years
Fairford River	Fairford	2,251 cfs	38 cfs (1964)	199 cfs	2,989 cfs	6,749 cfs	15,362 cfs (2011)	557 cfs (2021)	68 years
Waterhen River	Waterhen	2,022 cfs	54 cfs (1963)	575 cfs	2,651 cfs	5,075 cfs	10,312 cfs (1954)	909 cfs (2021)	72 years
Dauphin River	Dauphin	3,030 cfs	248 cfs (1988)	421 cfs	3,007 cfs	6,946 cfs	11,654 cfs (2011)	622 cfs (2021)	46 years
Saskatchewan River	The Pas	9,891 cfs	2,571 cfs (1929)	4,732 cfs	10,469 cfs	16,047 cfs	42,378 cfs (1954)	8,264 cfs (2003)	110 years
Fisher River (data for October 31)	Dallas	48 cfs	6 cfs (1990)	8 cfs	113 cfs	123 cfs	3,408 cfs (2010)	8 cfs (2020)	63 years
Winnipeg River (level)	Lac du Bonnet	836.2 ft	819.9 ft (1952)	821.2 ft	834.12ft	836.5 ft	836.8 ft (1972)	836.3 ft (2020)	81 years

Lakes

Lake Manitoba is at 811.3 ft, which is within its operating range of 810.5 ft – 812.5 ft but tracking 0.5 ft below its long term average level for this time of the year (Table 2). Lake Winnipeg is at 712.5 ft, which is within its operating range of 711 ft – 715 ft but tracking about 1 ft lower than its long term average level for this time of the year. Lake St. Martin is at 797.9 ft, which is within its operating range of 797.0 ft – 800.0 ft but tracking about 1 ft lower than its long term average level for this time of the year. Dauphin Lake is at 854.3 ft, which is within its operating range of 853.0 ft – 854.8 ft and near its long term average level for this time of the year. Lake Winnipegosis is currently at 830.1 ft and is tracking about 1 ft lower than its long term average level for this time of the year. Water level hydrographs for these lakes are shown in Figures 22 to 26. Whiteshell Lakes are currently tracking below normal conditions for this time of the year. Inflow into Lake of the Prairies (Shellmouth Reservoir) is tracking near normal condition for this time of the year.

Shellmouth Dam is being operated in consultation with the Shellmouth Reservoir Regulation Liaison Committee. The lake level as of December 1 was 1400.59 ft. The operating guidelines recommend that the lake level be drawn down between 1386 ft and 1400 ft prior to spring runoff depending on the forecasted spring runoff volume. Regular spring runoff forecasts will be issued and the lake level will be dropped to the appropriate level prior to the spring runoff in order to prevent downstream flooding while also storing sufficient water for water supply purposes and upstream reservoir users. Figure 27 shows the observed and forecasted lake levels, reservoir inflow, and reservoir outflow until January 10, 2024. The outflow and level forecasts were made for the median future inflow conditions. As conditions on the ground change, a revised inflow forecast will be issued and the outflow from the reservoir will be adjusted accordingly.

Figures 22 to 27 also indicate the current levels, and statistical lower decile, median, and upper decile levels for major Manitoba Lakes.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Lake Winnipeg Observed Water Levels
 Dec 01, 2023 : 712.45 ft

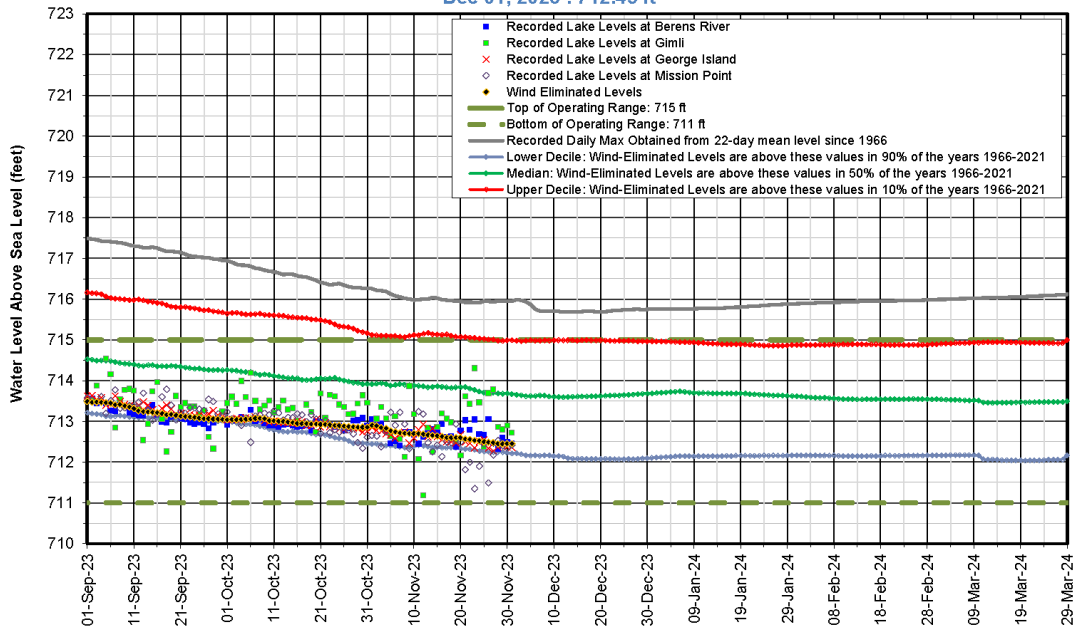


Figure 22. Lake Winnipeg water levels.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Dauphin Lake Observed Water Level
 Dec 01, 2023 : 854.33 ft

05LJ009

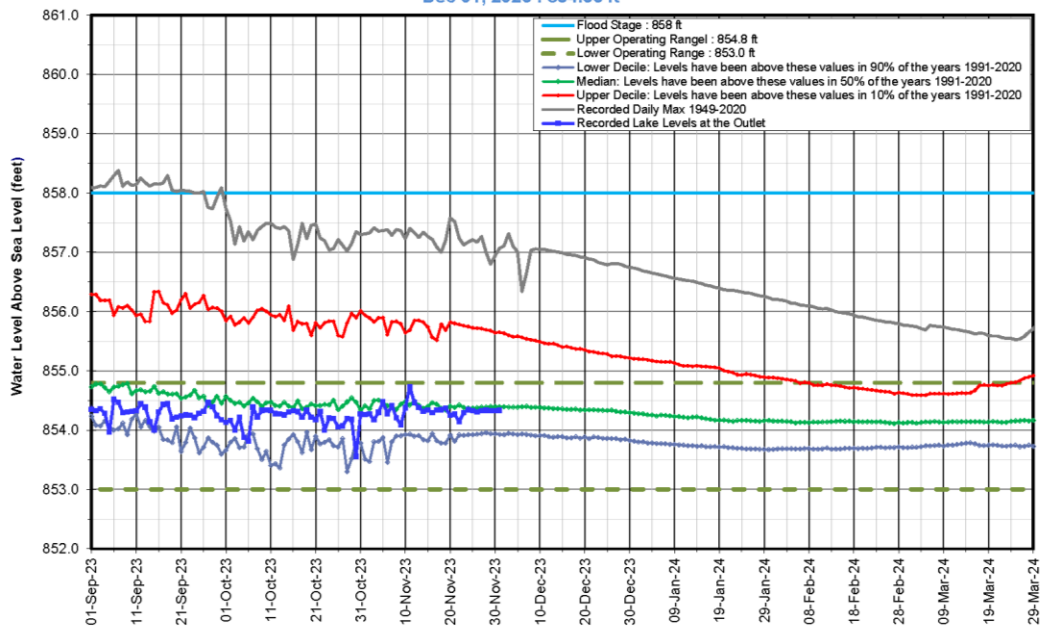


Figure 23. Dauphin Lake water levels.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Lake Manitoba Observed Water Levels

Dec 01, 2023 : 811.29 ft

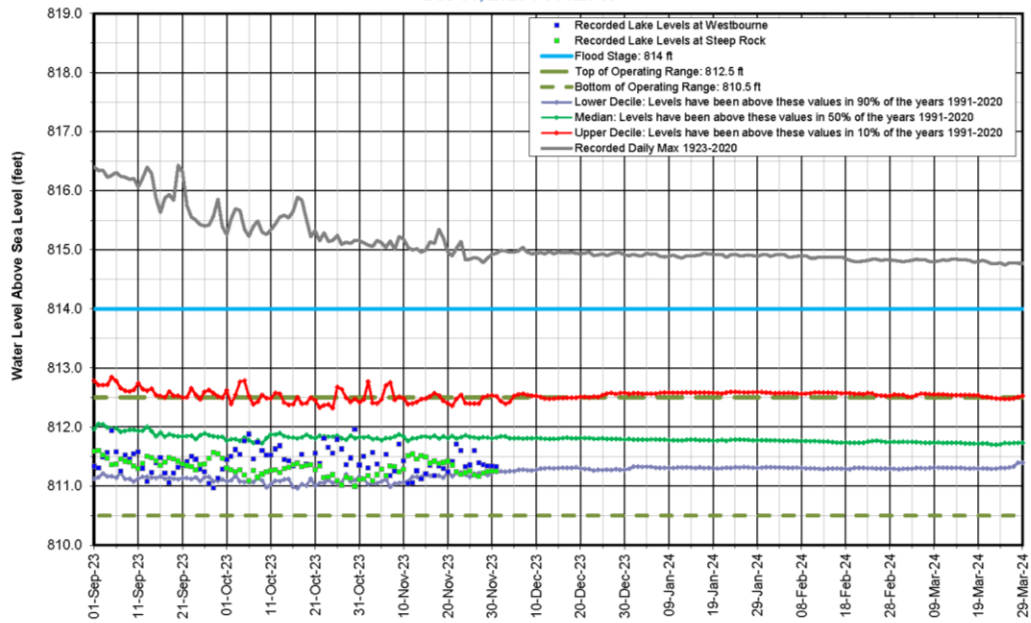


Figure 24. Lake Manitoba water levels.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Lake Winnipegosis Observed Water Levels

Oct 31, 2023 : 829.44 ft

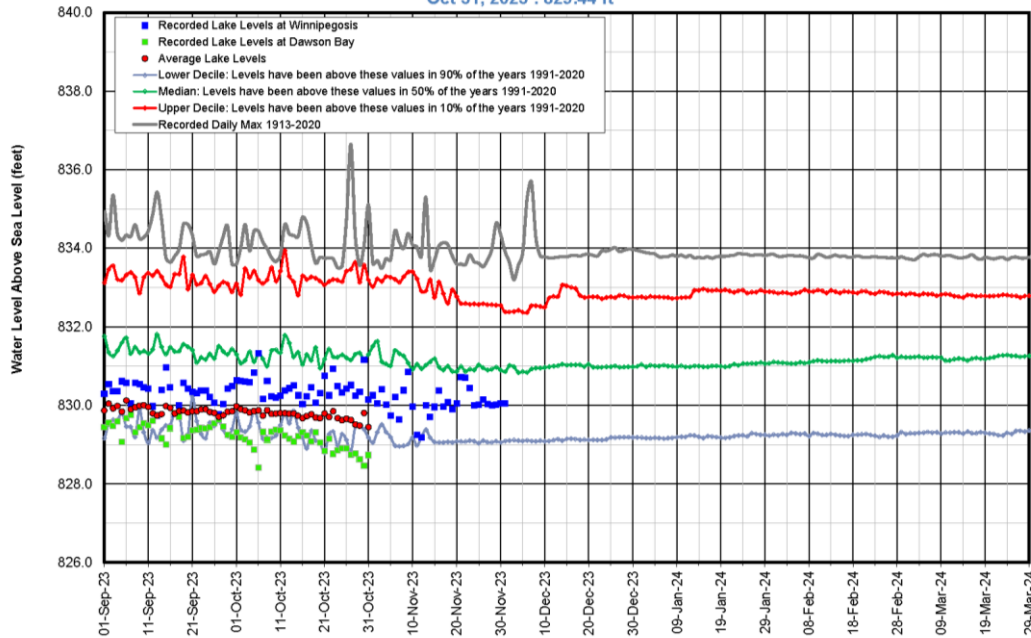


Figure 25. Lake Winnipegosis water levels.

Hydrologic Forecast Centre - Manitoba Transportation and Infrastructure
Lake St. Martin Observed Water Levels

Dec 01, 2023 : 797.93 ft

05LM005

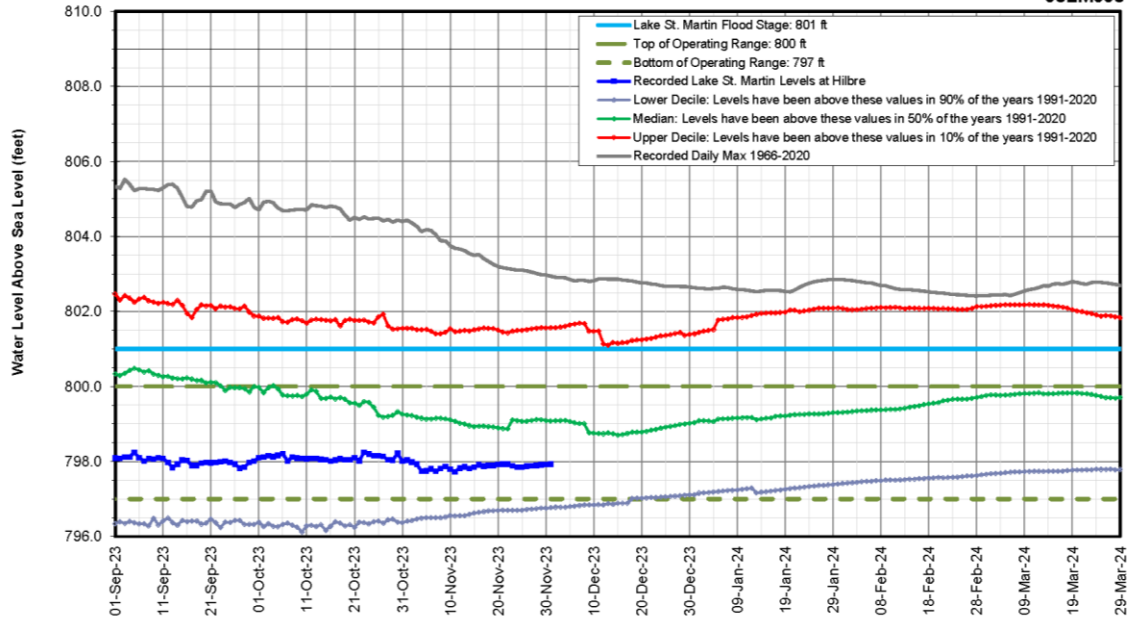


Figure 26. Lake St. Martin water levels.

Hydrologic Forecast Centre, Manitoba Transportation and Infrastructure
Shellmouth Reservoir - December 1, 2023

Operation plan for median condition (300 cfs)

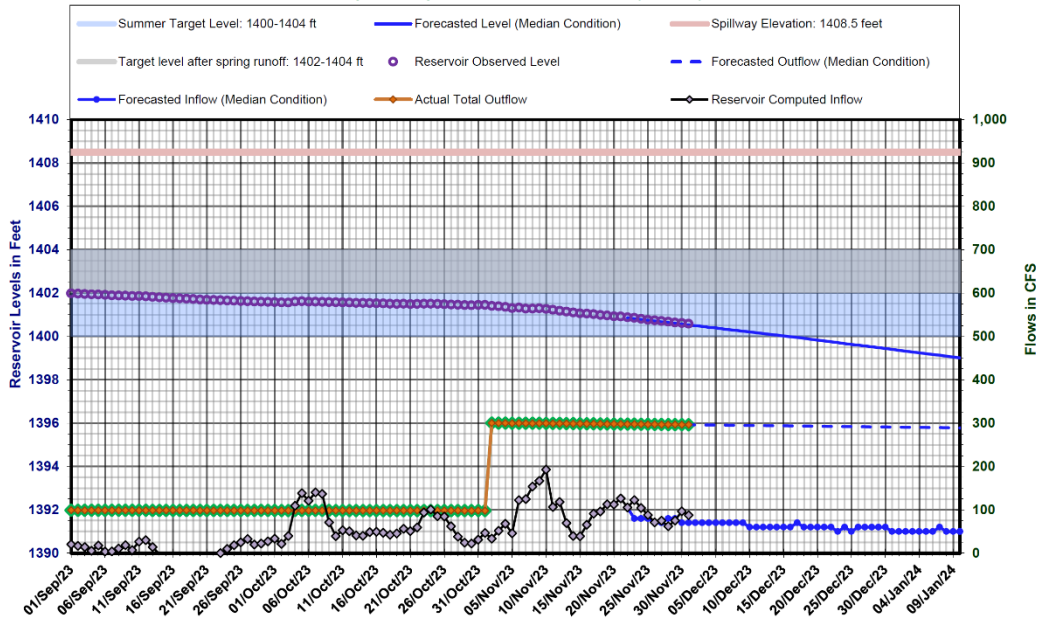


Figure 27. Lake of the Prairies (Shellmouth Reservoir) water levels and flows.

WINTER PRECIPITATION (LONG TERM PRECIPITATION OUTLOOK)

Global weather prediction centres indicate that an El Nino climate condition is expected to persist through the winter and spring. The effect of El Nino is variable across the globe, but generally, for Manitoba, it is characterized by above normal temperatures and below normal to near normal precipitation from December to April.

Environment and Climate Change Canada issued a long term precipitation outlook in November for the winter period (Figures 28 and 29). The outlook indicates equal chances of above normal, below normal or near normal precipitation from December to February for most Manitoba basins, with the exception of northern Manitoba basins that are favoured to receive above normal precipitation. The United States National Weather Service Climate Prediction Center's outlook issued on November 16th, 2023 forecasts below normal precipitation within the United States portion of the Red and Souris River basins from December through February (Figures 30) and equal chances of near normal, above normal or below normal precipitation from January through March (Figure 31).

Long range climate projections issued by Columbia Climate School International Research Institute (IRI), which predicts probabilistic seasonal climate based on model output from United States National Oceanographic and Atmospheric Administration (NOAA) and Environment and Climate Change Canada, indicate equal chances of near normal, above normal or below normal precipitation across Manitoba for December to March (Figure 32 and 33).

Experience indicates that long term precipitation outlooks are more accurate for the first month of the forecast time frame and forecast modelling results start to be more uncertain further into the future. Generally, long term weather forecasts are not as reliable as short term forecasts.

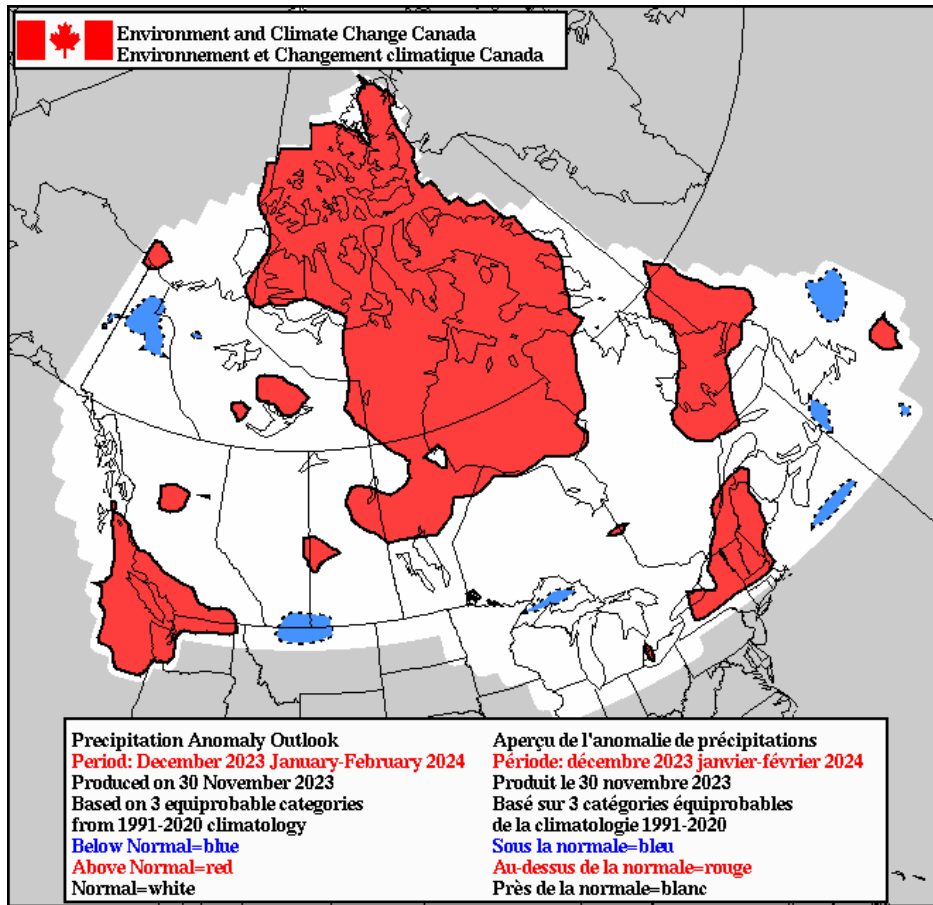


Figure 28. Environment and Climate Change Canada's Deterministic Precipitation Outlook (December to February).

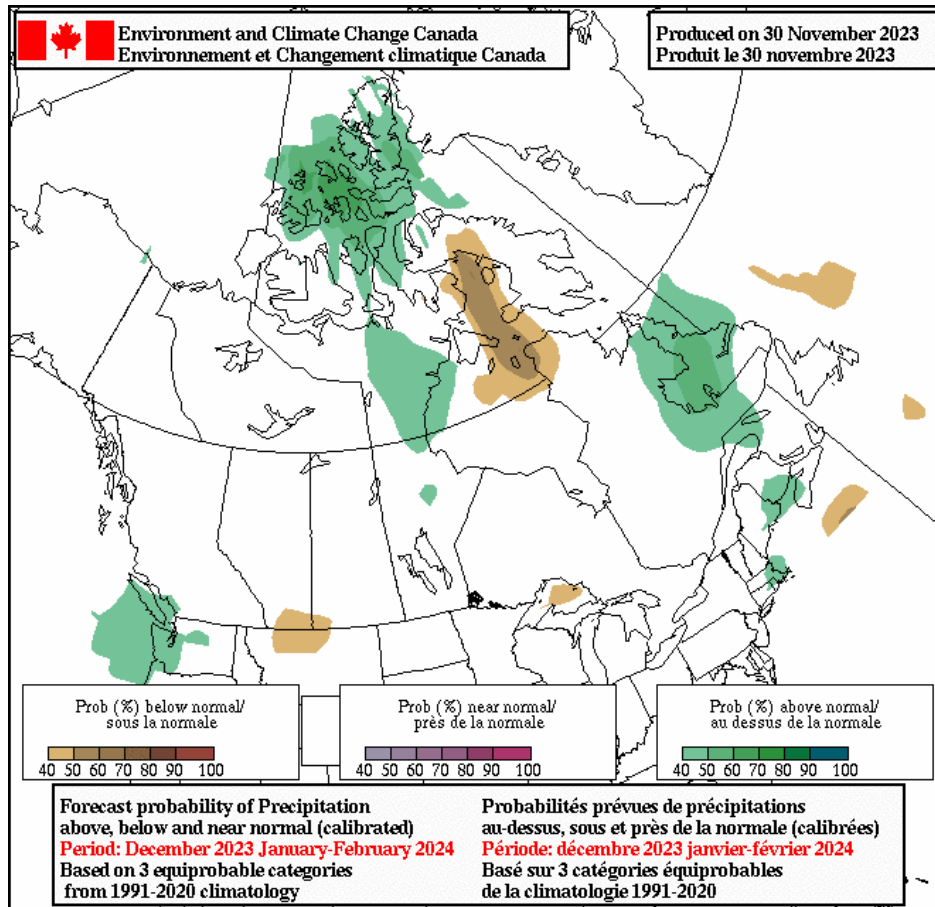


Figure 29. Environment and Climate Change Canada's Probabilistic Precipitation Outlook (December to February).



Seasonal Precipitation Outlook



Valid: Dec-Jan-Feb 2023-24
Issued: November 16, 2023

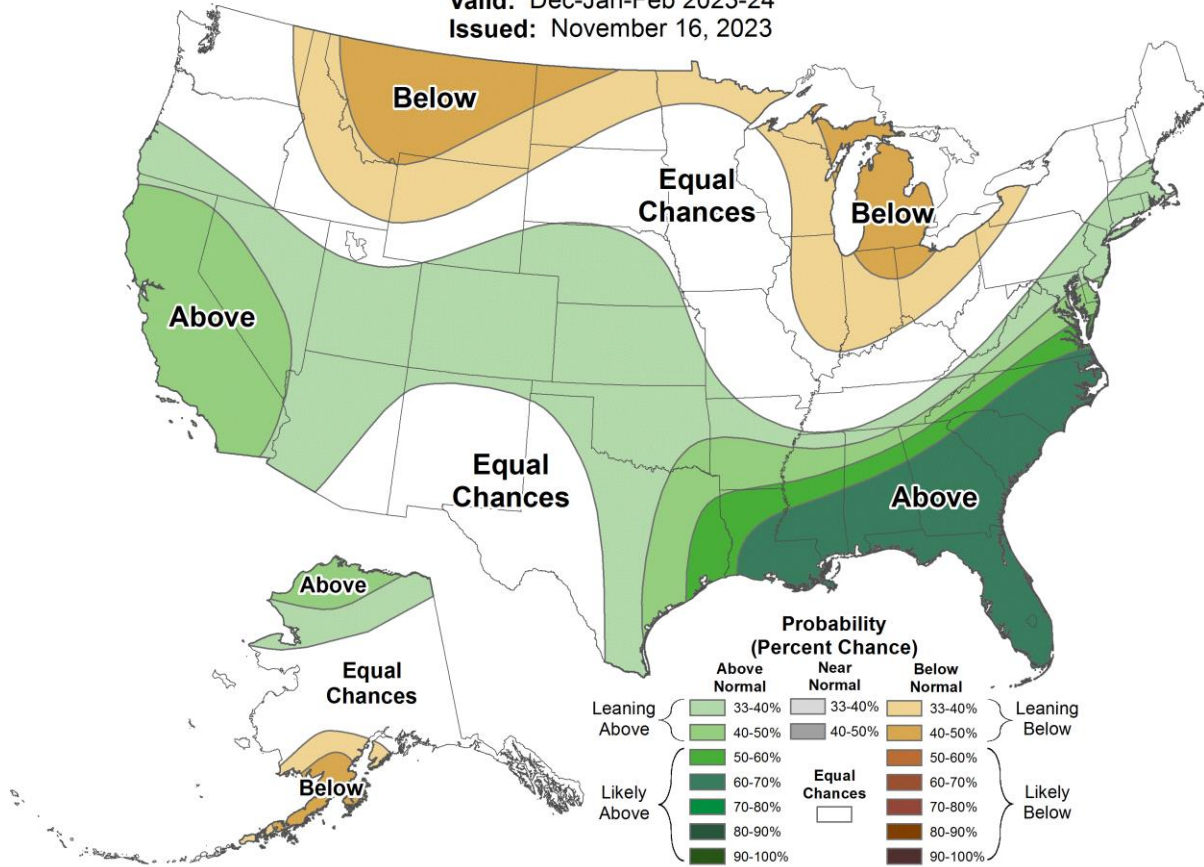


Figure 30. National Weather Services' precipitation outlook (December to February).



Seasonal Precipitation Outlook



Valid: Jan-Feb-Mar 2024
Issued: November 16, 2023

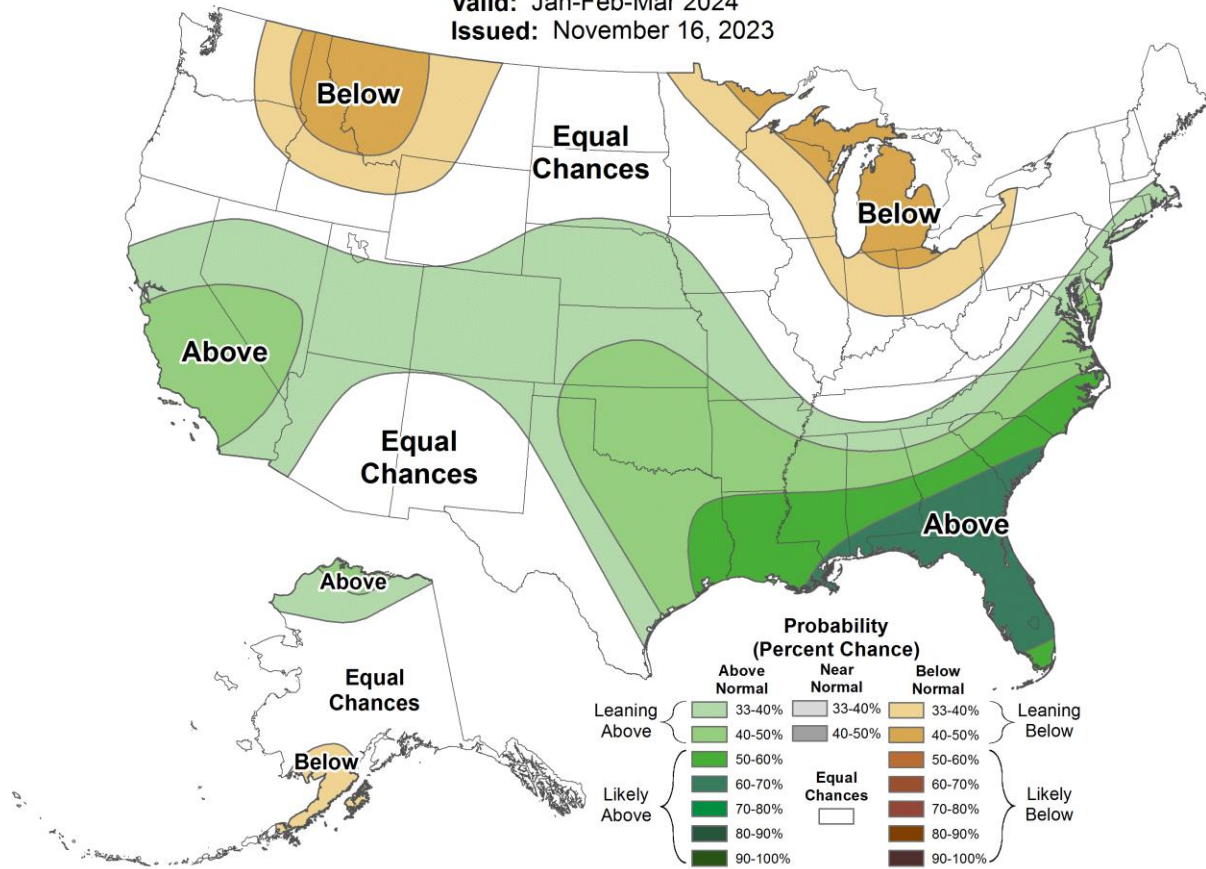


Figure 31. National Weather Services' precipitation outlook (January to March).

IRI Multi-Model Probability Forecast for Precipitation for December–January–February 2024, Issued November 2023

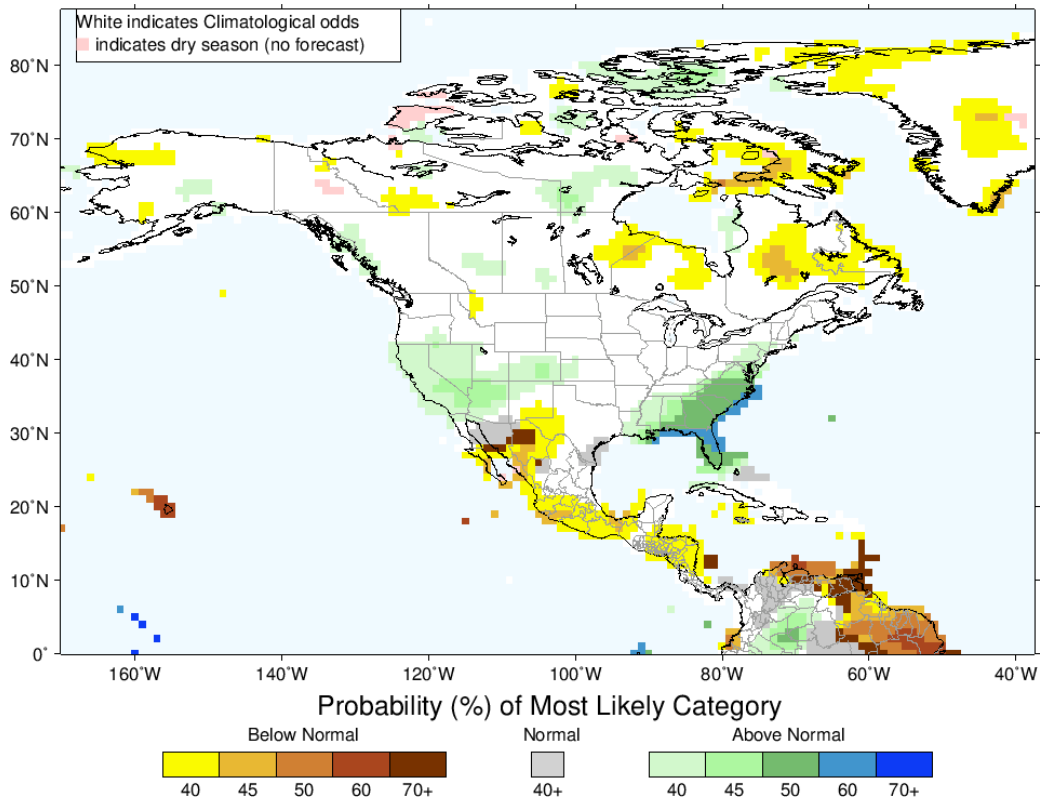


Figure 32. Columbia Climate School International Research Institute’s Multi-Model Probabilistic Precipitation Outlook (December to February).

IRI Multi-Model Probability Forecast for Precipitation for January-February-March 2024, Issued November 2023

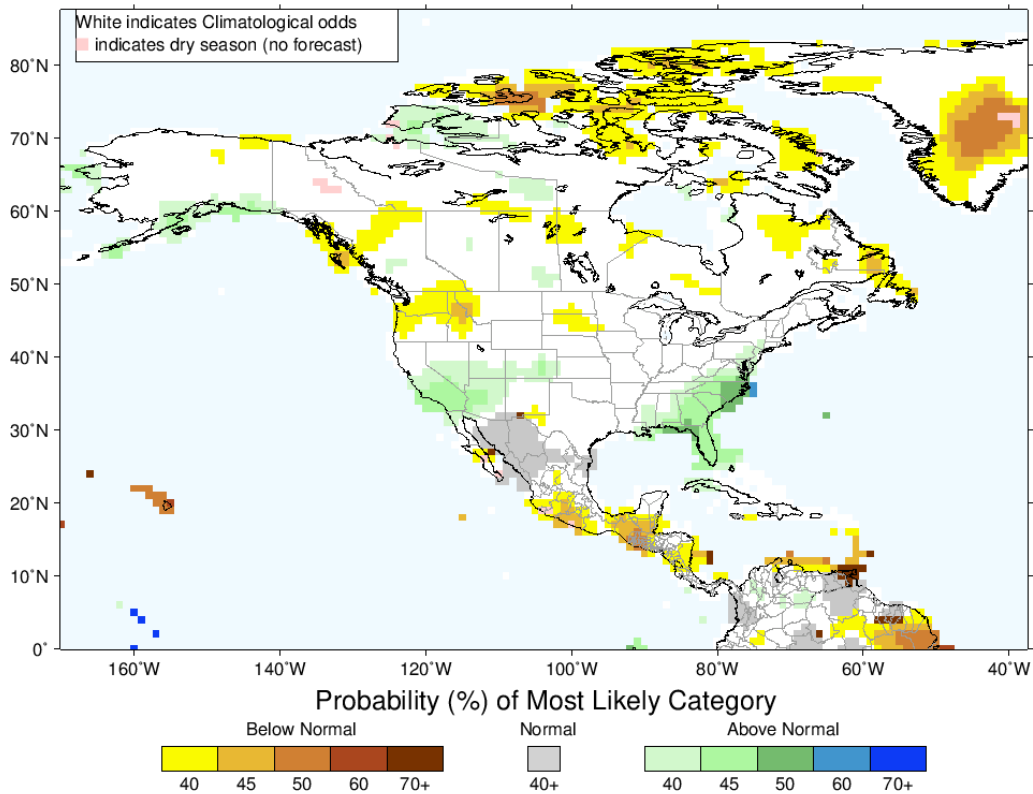


Figure 33. Columbia Climate School International Research Institute’s Multi-Model Probabilistic Precipitation Outlook (January to March).

FORECASTED LAKE LEVELS AND RIVER FLOWS OVER THE WINTER PERIOD

Providing reliable forecasts of river flows through the winter (which are also called base flows) is extremely difficult due to frozen ground conditions and the effect of ice on flows and levels on rivers and lakes. The Assiniboine River is forecasted to remain at near normal flows and levels until spring runoff. Flows on the Assiniboine River are partly being controlled by the sustained release of outflows from the Shellmouth Reservoir in order to drop the level in the reservoir in preparation for the spring runoff. Flows and levels on the Red River are expected to maintain below normal conditions until spring runoff. Flows on the Waterhen, Fairford, and Dauphin Rivers will remain slightly below normal.

Lake Manitoba is expected to remain near 811.3 ft throughout the winter. Lake Winnipeg is expected to be near 712.5 ft by end of March, which will be near the historic lower decile level for March 31st. Lake Winnipegosis will remain near the current level of 830.1 ft throughout the winter and Lake St. Martin is expected to be near 799 ft before the spring runoff. Recorded lake levels (as of December 1, 2023) and expected levels prior to the 2024 spring runoff (by March 31, 2024) are given in Table 2.

Table 2. December 1 lake levels and expected levels by March 31, 2024 (before the 2024 spring runoff).

**Levels on these lakes are managed by operation of dam structures.*

Lakes	Current level, Dec 01 (ft)	Operating Range or Long Term Avg. (ft)	Normal Level for Dec 1 (ft)	Last time level was equal or higher than the current level (ft)	Expected Level by Mar 31, 2024 (ft)
Lake Manitoba*	811.3	810.5 - 812.5	811.8	812.1 (2022)	≈ 811.3
Lake Winnipeg*	712.5	711 - 715	713.7	714.5 (2022)	≈ 712.5
Lake St. Martin*	797.9	797 - 800	798.8	800.1 (2022)	≈ 798.9
Lake Winnipegosis	830.1	831.0	831.0	830.8 (2022)	≈ 830.1
Dauphin Lake*	854.3	853.0 - 854.8	854.4	855.8 (2022)	853.8 – 854.2
Shellmouth Reservoir*	1400.6	1386 - 1400	1399.3	1400.9 (2019)	1386 – 1398
Lake Wahtopanah near Rivers*	1535.4	1535.5	1535.2	1535.8 (2022)	1532 – 1534
Lake Minnewasta	1078.6	1079.6	1079.6	1080.3 (2022)	

SUMMARY

The Hydrologic Forecast Centre will continue working collaboratively with Environment and Climate Change Canada, the National Weather Service and flood forecasters in neighbouring jurisdictions to monitor watershed conditions and winter precipitation patterns.

At this point in time, it is not practical or feasible to provide a reliable long-term flood forecast for spring 2024 as conditions could change significantly during the coming months. Basins with below normal to normal soil moisture conditions, base flow, and lake level conditions indicate a higher chance for below normal to near normal flows and levels in spring runoff. However, there will be a chance of receiving above normal spring runoff if heavy winter or spring precipitation and a fast snowmelt occur. Conversely, the risk of spring flooding could decrease if less winter precipitation occurs, or if a gradual snowmelt rate or less precipitation were to occur in early spring.

Looking back at some of the most significant historic flood or drought events, each flood or drought event is caused by a combination of multiple unique circumstances. There is an inherent risk of over-estimating or under-estimating the extent of spring runoff if one considers the conditions and available precipitation four months in advance of the spring runoff. The Hydrologic Forecast Centre will continue to monitor watershed conditions closely and will release future outlooks in the winter and prior to spring run-off.

A detailed flood outlook will be published with updated information towards the end of February when further precipitation and other factors are available.