Manitoba Water Availability and Drought Conditions Report

AUGUST 2024

Executive Summary

- This Water Availability and Drought Conditions Report provides an update on conditions throughout Manitoba for August 2024.
- Precipitation conditions over the past month, three-month, and twelve-month periods are as follows:
  - During August 2024, northwest, southeast and pockets of southwest Manitoba experienced moderately to severely dry precipitation conditions while the rest of Manitoba experienced normal to above normal precipitation conditions.
  - Over the past three months (June, July, August), most of Manitoba experienced normal precipitation conditions with northwest Manitoba experienced moderately to severely dry conditions. Areas experiencing wetter or dryer conditions are scattered across the province.
  - Over the past 12 months, normal to moderately dry conditions have been experienced across Manitoba.
- As of August 31, 2024, water levels in rivers and lakes across southern Manitoba ranged from normal (25^{th} – 75^{th} percentile) to above normal (75^{th} – 90^{th} percentile). Rivers in northern Manitoba range from much below normal (<10^{th} percentile) to normal (25^{th} – 75^{th} percentile).
- The July 31, 2024, Canadian Drought Monitor assessment showed expansion of abnormally dry (D0) drought classification in northern Manitoba and the western area bordering Saskatchewan. With dry conditions in August, it is expected that some expansion and severity of drought conditions will be reflected in the end of August drought assessment.
- There are currently no concerns over reservoir water supplies. At the end of August, all provincial water supply reservoirs are near full supply levels or at typical drawdown levels for the season.
- Regarding on-farm water supplies, dugouts are 65 to 75% of normal capacity and reported to be adequate.
- Manitoba Agriculture's soil moisture map for August 28, 2024 shows that moisture across southern Manitoba at the 0-120 cm depth has continued to dry out, with less wet areas and more optimal and dry areas reported compared to the beginning of August.
- On August 27, 2024, the fire danger was mainly low across the province, except for an area of moderate to high in the northwest near The Pas and Flin Flon area. There were 82 active wildfires currently burning in Manitoba. There have been 266 wildfires to date, Manitoba's 20-year average is 341 wildfires by this date. As of August 27, 2024, there were no provincial fire or travel restrictions in place. The RMs of Kelsey, Lorne and Emerson-Franklin, as well as the Town of Grand Rapids, have burning restrictions in place.

Manitoba
Environment and Climate Change

Drought Indicators

Precipitation Indicator

Precipitation is assessed to determine the severity of meteorological dryness and is an indirect measurement of agricultural dryness.

Three precipitation indicators are calculated to represent short-term (one-month; Figure 1), medium term (three months; Figure 2) and long-term (12 months; Figure 3) conditions. The indicators compare current monthly precipitation totals to historical data to calculate the per cent of median precipitation that occurred over the past one, three or 12 months. Historical medians are computed from 45 years of data (1971–2015).

Due to large distances between meteorological stations in northern Manitoba, the interpolated contours in this region are based on limited observations and should be interpreted with caution.

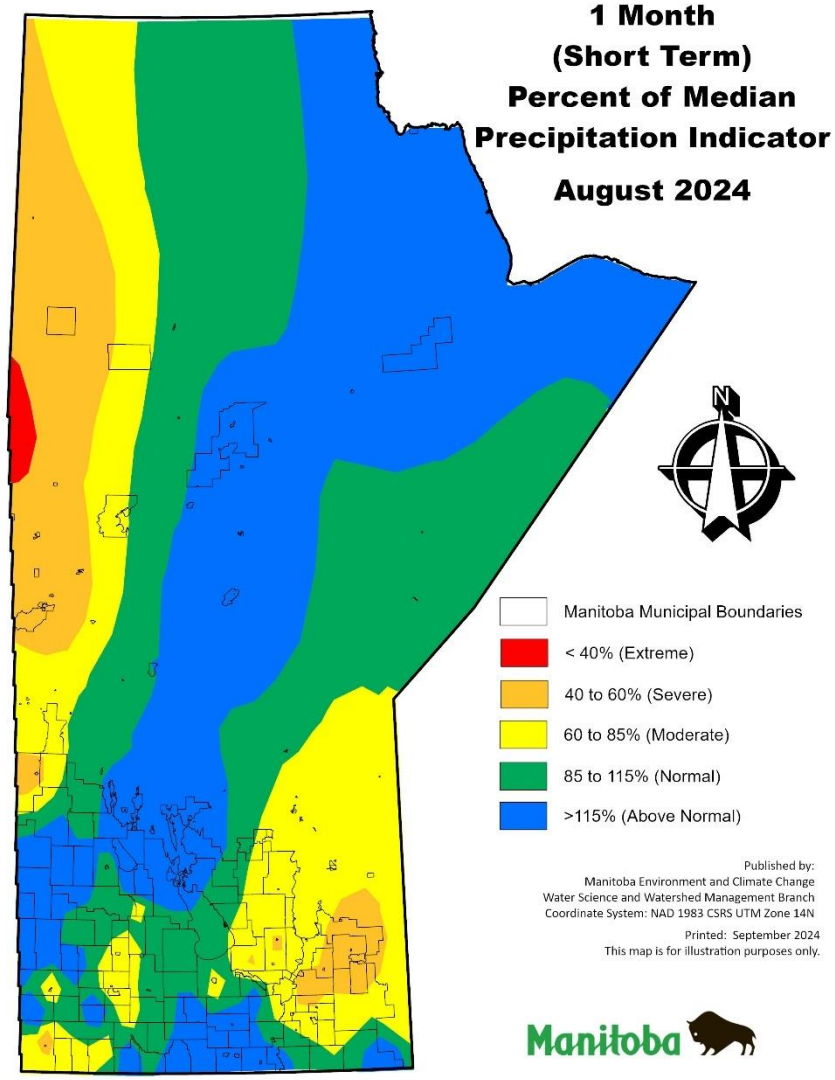

Figure 1: One month (short-term) percent of median precipitation indicator.

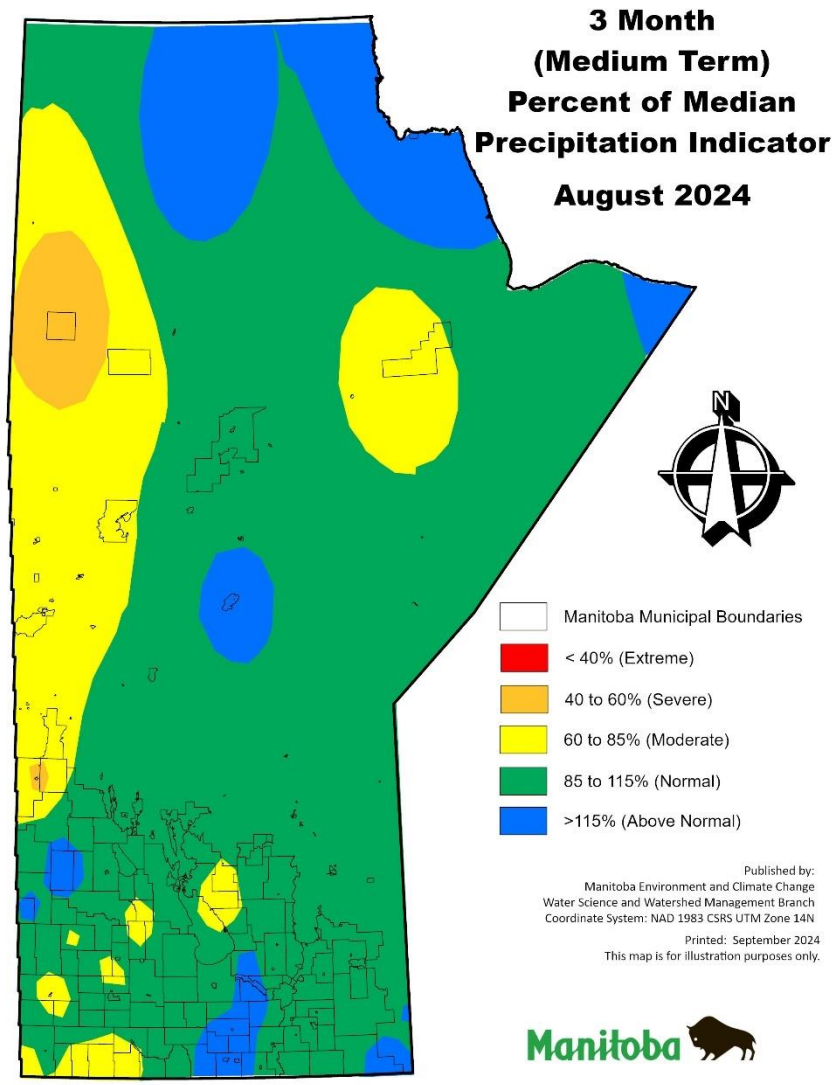

Figure 2: Three month (medium-term) percent of median precipitation indicator.

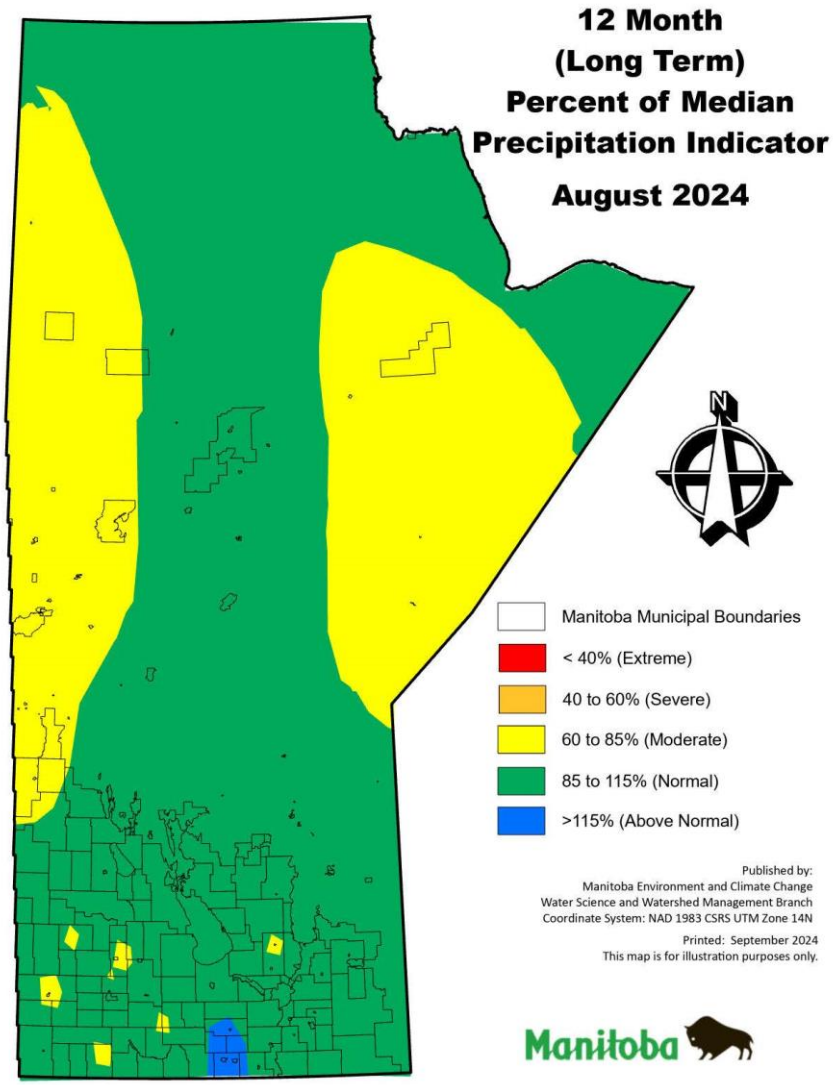

Figure 3: Twelve month (long-term) percent of median precipitation indicator.

Streamflow and Lake Level Indicator

The streamflow and lake level indicator is based on average daily flows and levels compared to historical values for that particular day.

This indicator is used to determine the severity of hydrological dryness in a watershed and is summarized on Figure 4, representing hydrological conditions for August 31, 2024.

Streamflow and lake level percentile plots for all of the rivers and lakes included on Figure 4 are available on the [Manitoba Drought Monitor website] under the *Drought Indicator Map* tab.

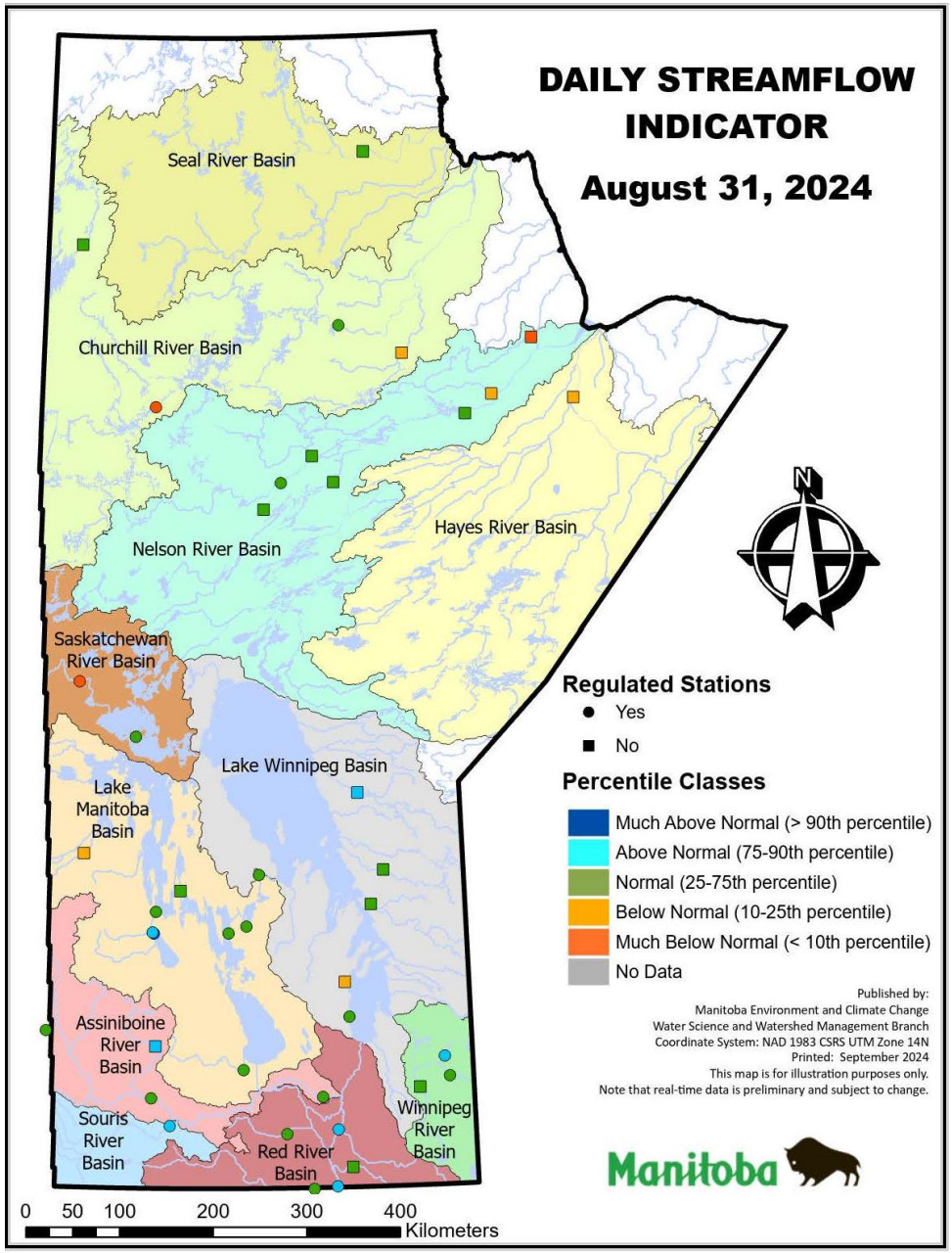

Figure 4: Daily streamflow and lake level indicator for August 31, 2024.

Canada and United States Drought Monitors

The Canadian Drought Monitor and the United States Drought Monitor map the extent and intensity of drought conditions across Canada and the continental U.S.A.

Drought Monitor assessments are based on a suite of drought indicators, impacts data and local reports as interpreted by federal, provincial/state and academic scientists.

The Canadian and United States Drought Monitor maps use the following classification system:

- D0 (Abnormally Dry) – represents an event that occurs every three to five years
- D1 (Moderate Drought) – five to 10 year event
- D2 (Severe Drought) – 10 to 20 year event
- D3 (Extreme Drought) – 20 to 50 year event
- D4 (Exceptional Drought) – 50+ year event

Additionally, the map indicates the duration of drought as either short-term (S; less than six months) or long-term (L; more than five months) (Figure 5).

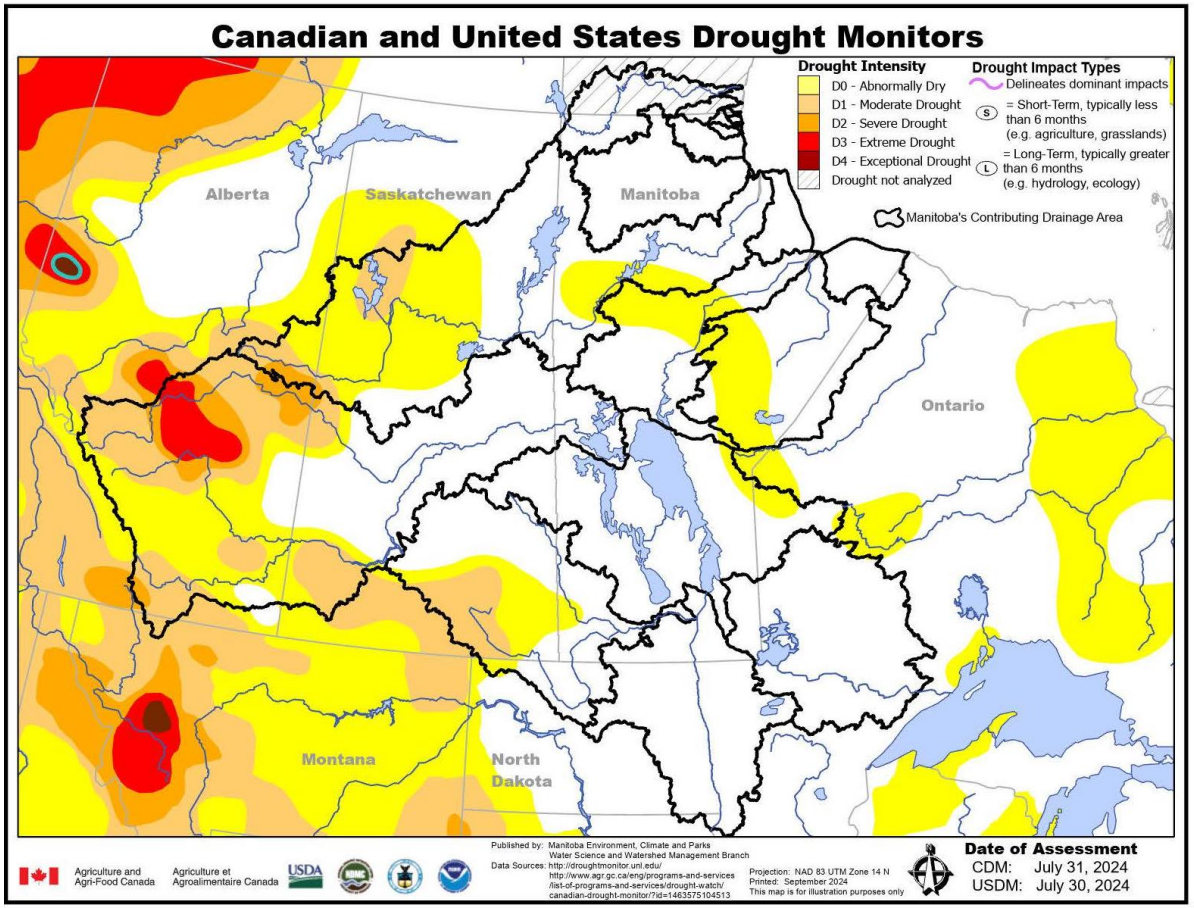

Figure 5: Canadian and United States Drought Monitors' classification of short-term (S) and long-term (L) drought conditions assessed as of July 31, 2024.

Water Availability

Reservoir Conditions

Table 1: Water Supply Reservoir Levels and Storages – August 31, 2024 (Southern and Western Manitoba).

Water Supply Reservoir Levels and Storages - August 31, 2024								
Lake or Reservoir	**Community Supplied**	**Target Level (feet)**	**Latest Observed Level (feet)**	**Observed date**	**Supply Status (Recent - Target) (feet)**	**Storage at Target Level (acre-feet)**	**Storage at Observed Level (acre-feet)**	**Supply Status (observed storage/target storage) (%)**
Lake of the Prairies (Shellmouth)*[1]	Brandon, Portage, Cartier Regional Water Co-op	1,402.5	1402.21	August 31, 2024	-0.29	300,000	296,381	99%
Lake Wahtopanah (Rivers)*	Rivers	1,536.0	1536.26	August 31, 2024	+0.26	24,500	25,085	102%
Minnewasta (Morden)*	Morden	1,082.0	1081.53	August 31, 2024	-0.47	3,150	3,071	97%
Stephenfield*	Carman, Pembina Valley Water Co-op	972.0	970.33	August 31, 2024	-1.67	3,810	3,035	80%
Vermilion*	Dauphin	1,274.0	1274.16	August 31, 2024	+0.16	2,600	2,638	101%
Goudney (Pilot Mound)*		1,482.0	1482.08	August 31, 2024	+0.08	450	454	101%
Jackson Lake*		1,174.0	1173.12	August 31, 2024	-0.88	2,990	2,767	93%
Manitou (Mary Jane)*		1,537.0	1536.64	August 31, 2024	-0.36	1,150	1,117	97%
Turtlehead (Deloraine)*	Deloraine	1,772.0	1771.09	August 31, 2024	-0.91	1,400	1,354	97%
Lake Irwin*		1,178.0	1177.76	August 31, 2024	-0.24	3,800	3,653	96%
Minnedosa*[1]		1,681.5	1681.84	August 31, 2024	+0.34	1,558	1,645	106%
Boissevain*	Boissevain	1,697.0	1697.86	August 31, 2024	+0.86	505	576	114%
Elgin*		1,532.0	1531.50	August 31, 2024	-0.50	520	485	93%
St. Malo*		840.0	840.17	August 31, 2024	+0.17	1,770	1,799	102%
Kenton Reservoir		1,448.0	1447.42	August 31, 2024	-0.58	600	556	93%
Killarney Lake		1,615.0	1615.10	August 31, 2024	+0.10	7,360	7,408	101%

[1] Summer target level and storage
* Real-time water level gauge

On-Farm Water Supply

On-farm water supply from Manitoba Agriculture's Crop Report Issue 18 (August 27, 2024) are reported to be at 65 to 75% of normal capacity. Water supplies are reported to be adequate.

Soil Moisture

A regional representation of soil moisture conditions for the top 120 cm relative to the field capacity is shown on Figure 6.

The colours on the map represent measured soil moisture values from automated instruments at sites across Manitoba. Qualitative range (very dry to very wet) is based on the amount of current soil moisture relative to field capacity. Field Capacity is defined as the maximum amount of moisture the soil can hold when drainage due to gravity stops.

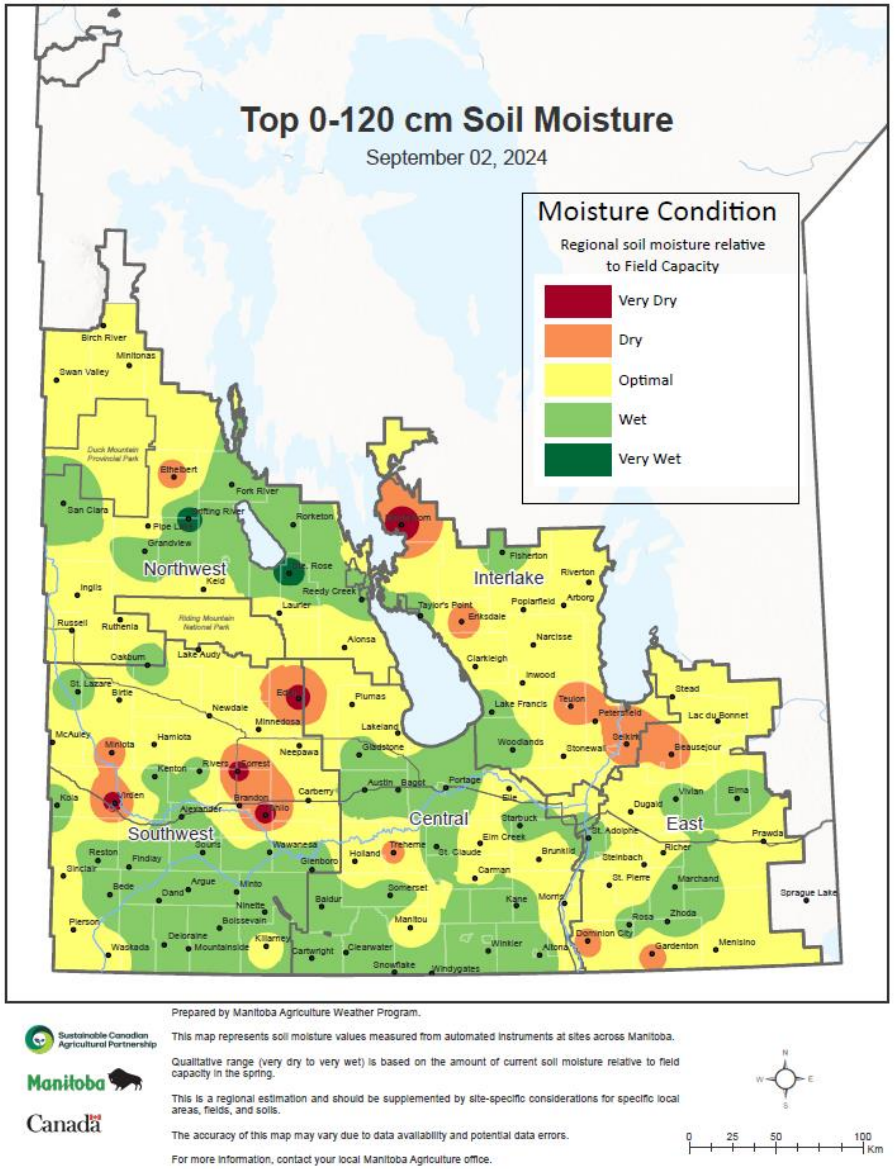

Figure 6: Manitoba Agriculture's September 2, 2024, mapping of soil moisture conditions in the top 0–120 cm.

Wildland Fires

On August 27, 2024, the Manitoba Wildfire Service advised that that fire danger was mainly low across the province, except for an area of moderate to high in the northwest near The Pas and Flin Flon area. There were 82 active wildfires burning in Manitoba. There have been 266 wildfires to date, Manitoba's 20-year average is 341 wildfires by this date. Due to ongoing lightning activity across the province, Manitoba Wildfire Service anticipates there will be several new fires daily across the province.

As of August 27, 2024, there were no provincial fire or travel restrictions in place. The RMs of Kelsey, Lorne and Emerson-Franklin, as well as the Town of Grand Rapids, have burning restrictions in place.

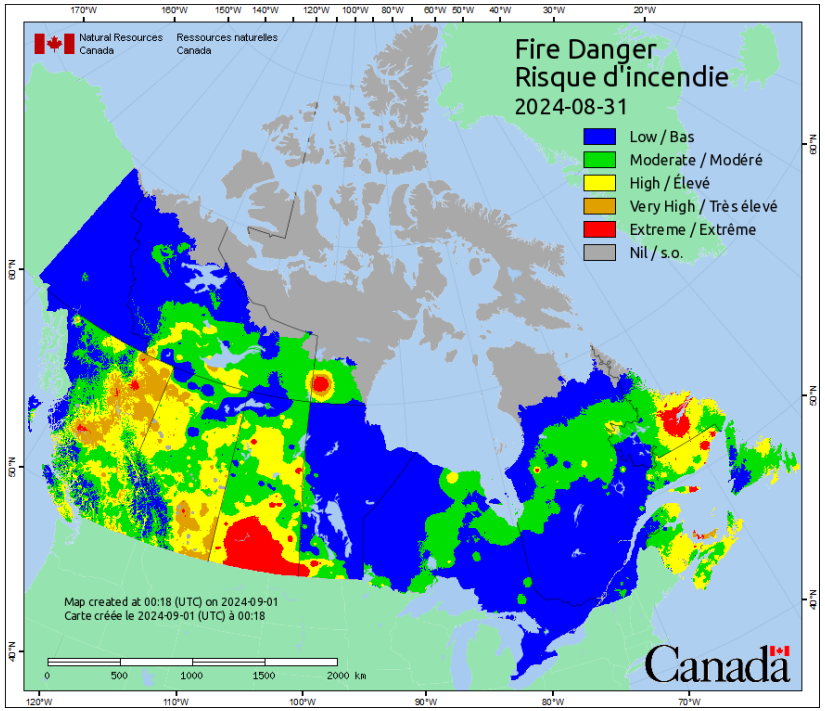

Figure 7: Fire Danger mapping by Natural Resources Canada.

Impacts due to Dry Conditions

To date, there have been no impacts due to dry conditions in 2024.

Past reports, drought mapping and other information and resources are available on the Manitoba Drought Monitor website.

For further information, please contact:

Mark Lee, P.Eng.
Manager, Surface Water Management Section
Water Science and Watershed Management Branch
Manitoba Environment and Climate Change
Box 14, 14 Fultz Blvd., Winnipeg, Manitoba R3Y 0L6
Ph. 204-391-1623
Email: Mark.Lee@gov.mb.ca

Acknowledgements

This report was prepared with information from the following sources which are gratefully acknowledged:

Manitoba Transportation and Infrastructure
Reservoir level information:
www.manitoba.ca/mit/floodinfo/index.html

Manitoba Wildfire Service
www.manitoba.ca/sd/fire/

Manitoba Agriculture
Crop Reports:
www.manitoba.ca/agriculture/crops/seasonal-reports/crop-report-archive/index.html

Topsoil moisture conditions:
www.manitoba.ca/agriculture/weather/weather-conditions-and-reports.html

Environment and Climate Change Canada
Flow and lake level information:
www.wateroffice.ec.gc.ca/index_e.html

Agriculture and Agri-Food Canada
Canadian Drought Monitor:
agriculture.canada.ca/en/agriculture-and-environment/drought-watch-and-agroclimate/canadian-drought-monitor

United States Drought Monitor
droughtmonitor.unl.edu/