

Water Availability and Drought Conditions Report

APRIL 2023

Executive Summary

- This Water Availability and Drought Conditions Report provides an update on conditions throughout Manitoba for April 2023.
- Precipitation conditions over the past month, three month, and twelve month periods are as follows:
 - During April 2023, southern Manitoba experienced precipitation conditions ranging from pockets of extreme dryness (<40 % of median) in central and western agri-Manitoba to regions of above normal precipitation (>115 %). Conditions in northern Manitoba ranged from moderately dry (60 – 85 %) in the west to extremely dry in the east.
 - Over the past three months (February, March, April), southern Manitoba experienced moderately to extremely dry precipitation conditions. Conditions in northern Manitoba ranged from above normal in the west to extremely dry in the regions surrounding Churchill, Island Lake and Norway House.
 - Over the past 12 months, southern Manitoba observed normal to above normal precipitation conditions with some pockets of moderate dryness emerging in western agri-Manitoba. Conditions in northern Manitoba were normal except for regions of moderate dryness extending northeast from The Pas to Flin Flon and Thompson, and surrounding Island Lake.
- As of April 30, 2023, most rivers and lakes across Manitoba were classified as normal (25th – 75th percentile) to much above normal (>90th).
- The April 30, 2023 Canadian Drought Monitor assessment classified portions of the southwest, northwest and Interlake regions of agri-Manitoba as abnormally dry (D0) to moderate drought (D1) conditions. Abnormally dry conditions also extended northeast towards the Ontario border and surrounded Churchill.
- Provincial water supply reservoirs are close to or above full supply levels and there are currently no concerns over reservoir water supplies. Water availability during the spring melt period was sufficient to meet licensed allocations.
- On-farm water supplies are classified as sufficient across all regions.
- As of May 9, approximately 4,863 hectares have been burned during the 2023 wildfire season, all located in the eastern region. No provincial burning or travel restrictions were in place due to wildfire activity. However, the RMs of Armstrong, Roblin, and the Town of Lynn Lake had fire bans in place.

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 twelve 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.

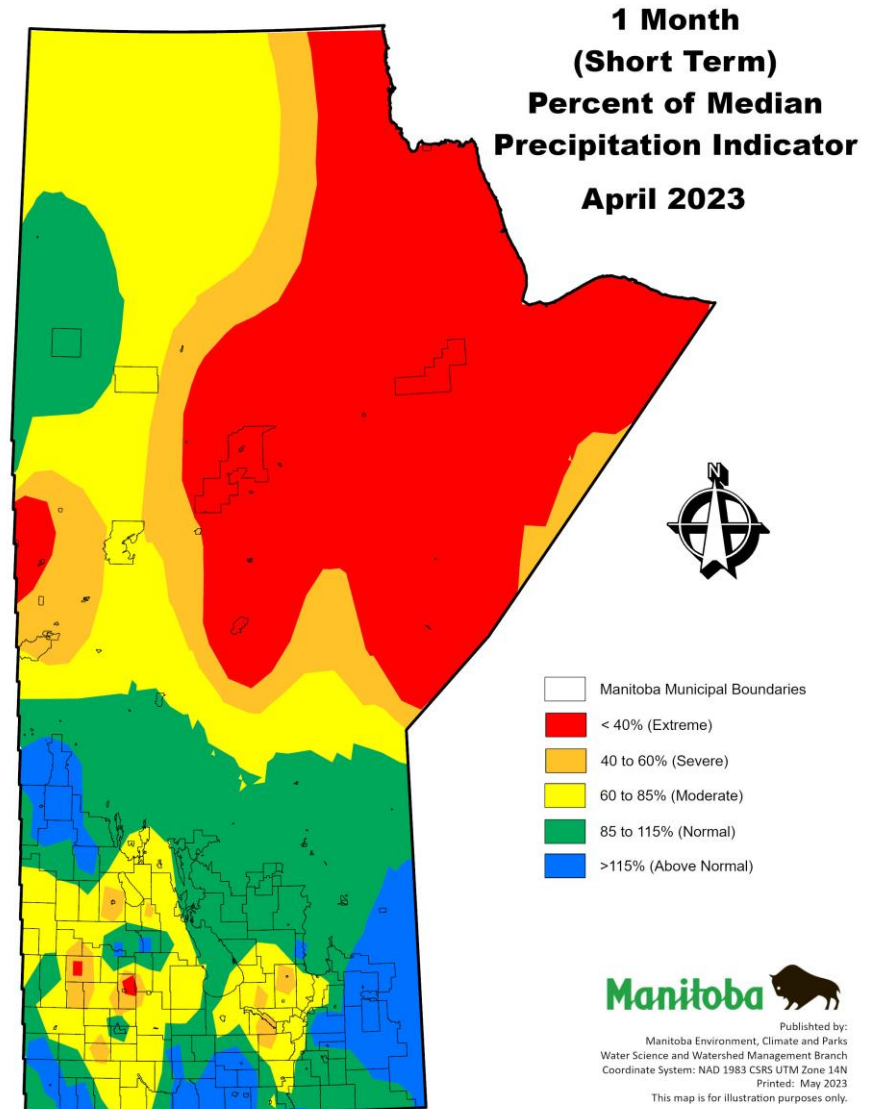


Figure 1: One month (short term) per cent of median precipitation indicator.

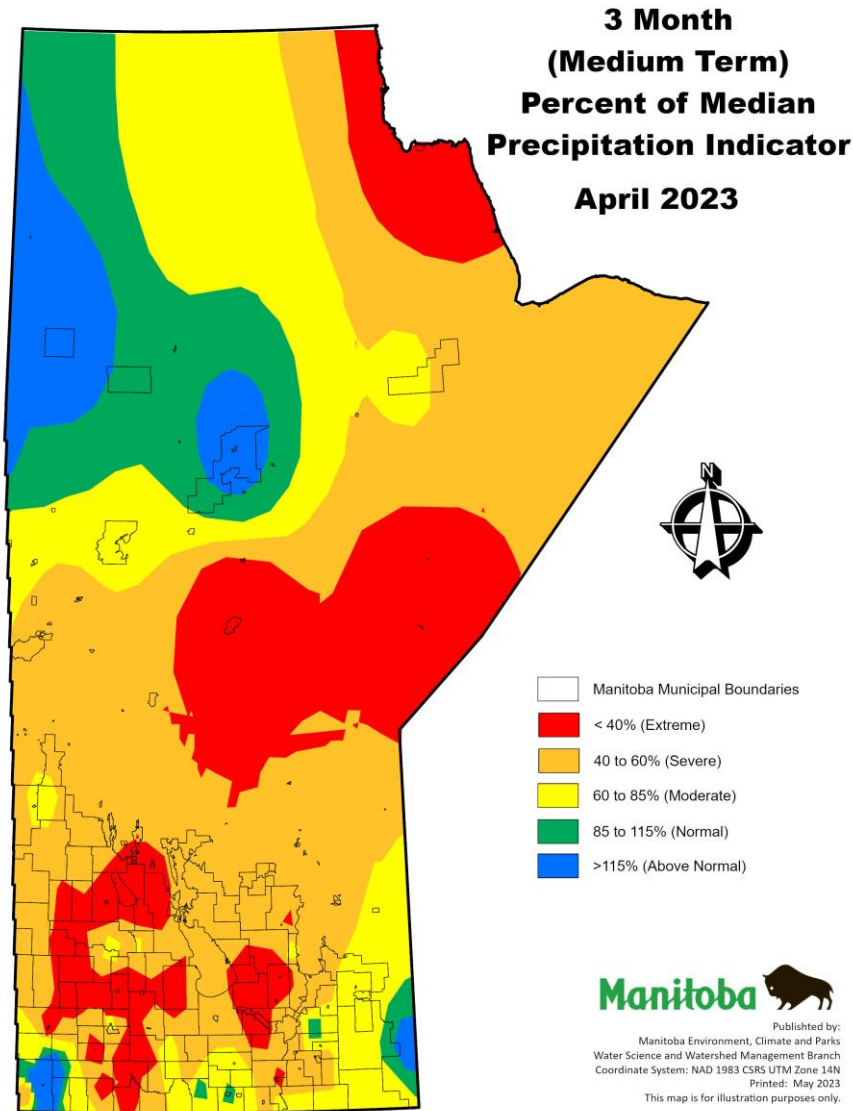


Figure 2: Three month (medium term) per cent of median precipitation indicator.

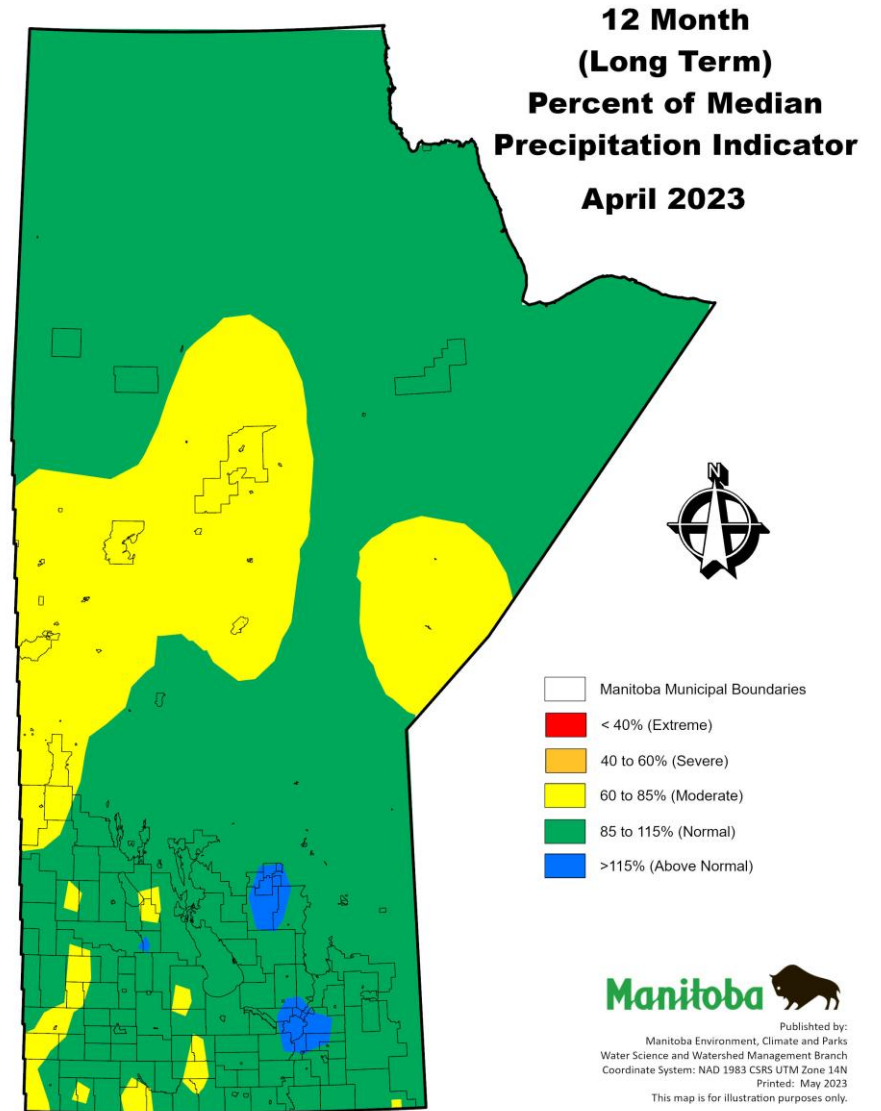


Figure 3: Twelve month (long term) per cent of median precipitation indicator.

Streamflow & 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 April 30, 2023.

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.

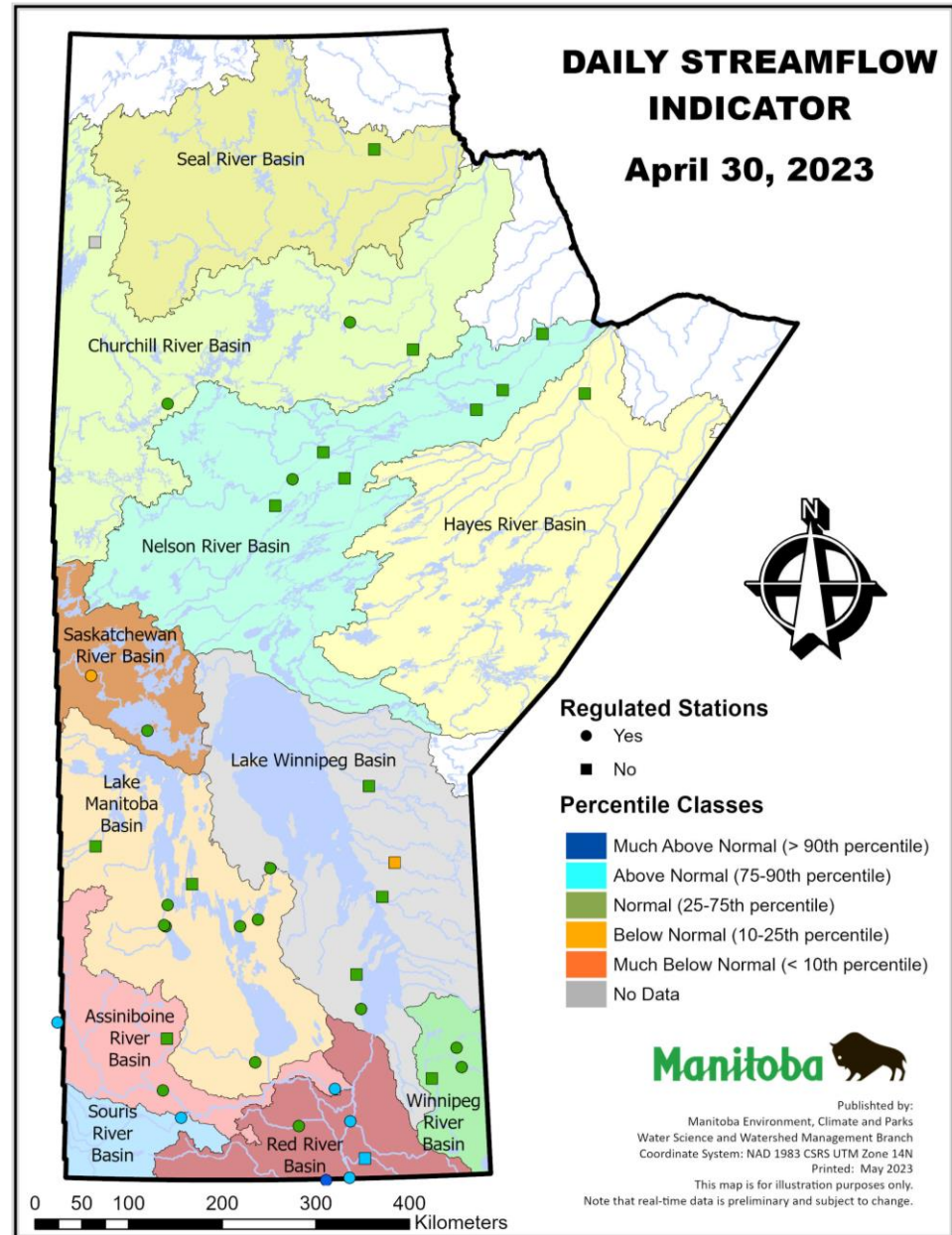


Figure 4: Daily streamflow and lake level indicator for April 30, 2023.

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 3 to 5 years;
- D1 (Moderate Drought) – 5 to 10 year event;
- D2 (Severe Drought) – 10 to 20 year event;
- D3 (Extreme Drought) – 20 to 50 year event; and
- D4 (Exceptional Drought) – 50+ year event.

Additionally, the map indicates the duration of drought as either short-term (S; less than 6 months) or long-term (L; more than 6 months) (Figure 5).

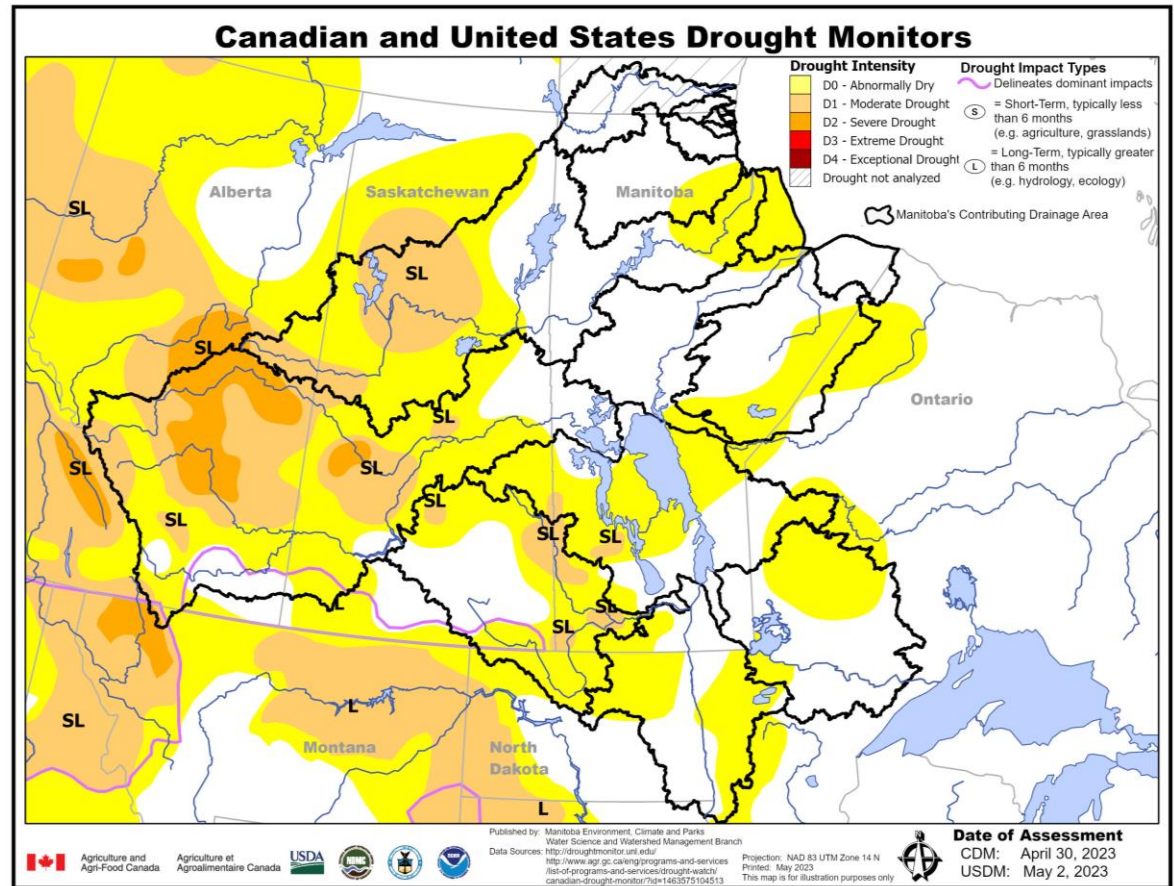


Figure 5: Canadian and United States Drought Monitors' classification of short-term (S) and long-term (L) drought conditions assessed as of April 30, 2023.

Water Availability

Reservoir Conditions

Table 1: Water Supply Reservoir Levels and Storages – May 1, 2023 (Southern and Western Manitoba).

Water Supply Reservoir Levels and Storages - May 1, 2023								
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	1401.04	May 1, 2023	-1.46	300,000	281,994	94%
Lake Wahtopanah (Rivers)*	Rivers	1,536	1537.34	May 1, 2023	+1.34	24,500	27,517	112%
Minnewasta (Morden)*	Morden	1,082	1082.59	May 1, 2023	+0.59	3,150	3,244	103%
Stephenfield*	Carman, Pembina Valley Water Co-op	972	973.62	May 1, 2023	+1.62	3,810	4,588	120%
Vermilion*	Dauphin	1,274	1275.00	May 1, 2023	+1.00	2,600	2,834	109%
Goudney (Pilot Mound)*		1,482	1483.01	May 1, 2023	+1.01	450	500	111%
Jackson Lake*		1,174	1173.55	May 1, 2023	-0.45	2,990	2,876	96%
Manitou (Mary Jane)*		1,537	1537.79	May 1, 2023	+0.79	1,150	1,174	102%
Turtlehead (Deloraine)*	Deloraine	1,772	1772.25	May 3, 2023	+0.25	1,400	1,428	102%
Lake Irwin*		1,178	1178.20	May 1, 2023	+0.20	3,800	3,929	103%
Minnedosa*		1,682	1682.05	May 11, 2023	+0.05	1,688	1,700	101%
Boissevain*	Boissevain	1,697	1698.76	May 1, 2023	+1.76	505	655	130%
Elgin*		1,532	1532.69	May 1, 2023	+0.69	520	568	109%
St. Malo*		840	841.81	May 1, 2023	+1.81	1,770	2,069	117%
Kenton Reservoir		1,448	1448.01	May 1, 2023	+0.01	600	601	100%
Killarney Lake		1,615	1614.88	January 18, 2023	-0.12	7,360	7,305	99%

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

On Farm Water Supply

Manitoba will release its first crop report of the 2023 growing season on May 16. Early reports of on farm water supplies from Manitoba Agriculture are provided in Table 2.

Table 2: On Farm Water Supply (Dugout) Conditions.

Region	General Dugout Condition
Eastern	Livestock water supplies are classified as sufficient across all regions.
Interlake	
Southwest	
Central	
Northwest	

Soil Moisture

A regional representation of soil moisture conditions for the top 120 cm relative to the field capacity is shown for May 7, 2023.

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.

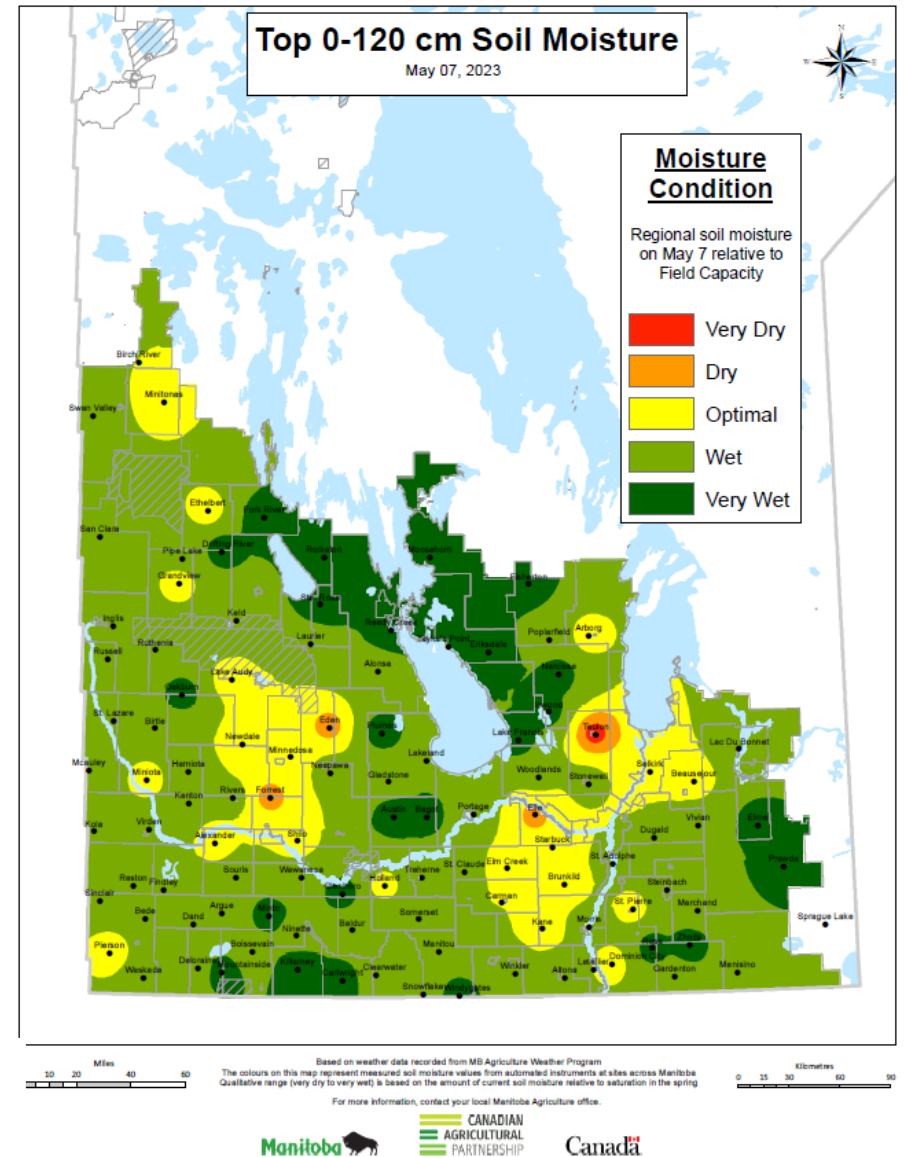


Figure 6: Manitoba Agriculture’s May 7, 2023 mapping of soil moisture conditions in the top 0 – 120 cm.

Wildland Fires

As of May 9, 2023, a total of 4,863 hectares have been burned, all located in the eastern region. The Manitoba Wildfire Service advises that wildfire danger across southern Manitoba remains low to moderate, while wildfire danger in northern Manitoba remains low, with some areas still covered by snow. Municipalities and the Manitoba Wildfire Service are starting to see some fires across the south and central regions, but at this point, they have been human-caused.

As of May 10, 2023, there were no provincial fire or travel restrictions in place. The RMs of Armstrong, Roblin, and the Town of Lynn Lake had fire bans in place.

Impacts due to Dry Conditions

To date, there have been no impacts due to dry conditions in 2023.

Past reports, drought mapping and other information and resources are available on the [Manitoba Drought Monitor](#) website.

For further information, please contact:

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Acknowledgements

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

Manitoba Transportation and Infrastructure:

Reservoir level information:

<https://www.gov.mb.ca/mit/floodinfo/index.html>

Manitoba Wildfire Service:

<https://www.gov.mb.ca/sd/fire/>

Manitoba Agriculture:

Crop Reports:

<http://www.gov.mb.ca/agriculture/crops/seasonal-reports/crop-report-archive/index.html>

Topsoil moisture conditions:

<https://www.gov.mb.ca/agriculture/weather/weather-conditions-and-reports.html>

Environment and Climate Change Canada:

Flow and lake level information:

http://www.wateroffice.ec.gc.ca/index_e.html

Agriculture and Agri-Food Canada:

Canadian Drought Monitor:

<https://agriculture.canada.ca/en/agriculture-and-environment/drought-watch-and-agroclimate/canadian-drought-monitor>

United States Drought Monitor:

<https://droughtmonitor.unl.edu/>