

Water Availability and Drought Conditions Report

MAY 2022

Executive Summary

- This Water Availability and Drought Conditions Report provides an update on conditions throughout Manitoba for May 2022.
- Precipitation conditions over the past month, three month, and twelve month periods are as follows:
 - During May 2022, all of southern Manitoba experienced above normal (>115 % of median) precipitation conditions. In northern Manitoba, conditions were generally above normal, with pockets of moderate dryness (60 – 85 %) surrounding Thompson and extending northward.
 - Over the past three months (March, April, May), all of southern Manitoba experienced above normal conditions. Conditions in northern Manitoba were generally normal (85 to 115 %) to above normal, with a pocket of moderately dry conditions in the far north.
 - Over the past 12 months, southern Manitoba observed normal to above normal conditions. Conditions in northern Manitoba were generally normal, expect for regions of moderate dryness surrounding Thompson and Flin Flon.
- Streamflows and water levels across most southern Manitoba sub-basins remained elevated as flooding continued throughout the month of May. As of June 1, 2022, many rivers and lakes across Manitoba were classified as above normal (75th – 90th percentile) to much above normal (>90th).
- The May 31, 2022 Canadian Drought Monitor assessment showed that Manitoba is now free of any drought conditions.
- Provincial water supply reservoirs are at or close to full supply levels and there are currently no concerns over reservoir water supplies. Nearly all creeks, streams, dugouts, and sloughs have refilled to capacity in agri-Manitoba and there are no concerns about on-farm water supplies at this time.
- Nearly all regions of the province remain short on feed supplies due to dry conditions over the past several years, resulting in cattle being sent to pasture earlier than desired, with many pastures in fragile condition after overgrazing last year.
- It was a slow start to the 2022 wildfire season with only seven fires burning a total of 34 hectares by the start of June. As of June 1, 2022, no burning or travel restrictions were in place due to wildfire activity.

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.

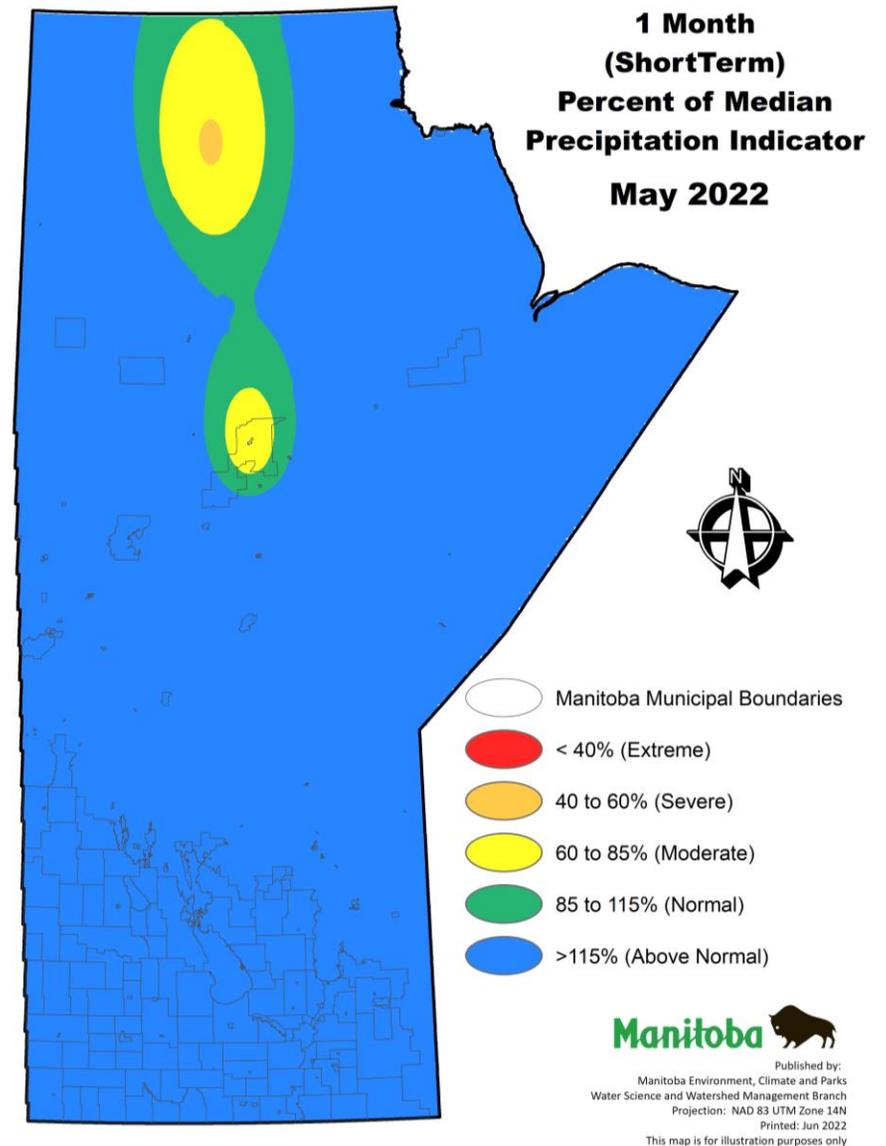


Figure 1: One month (short term) per cent of median precipitation indicator.

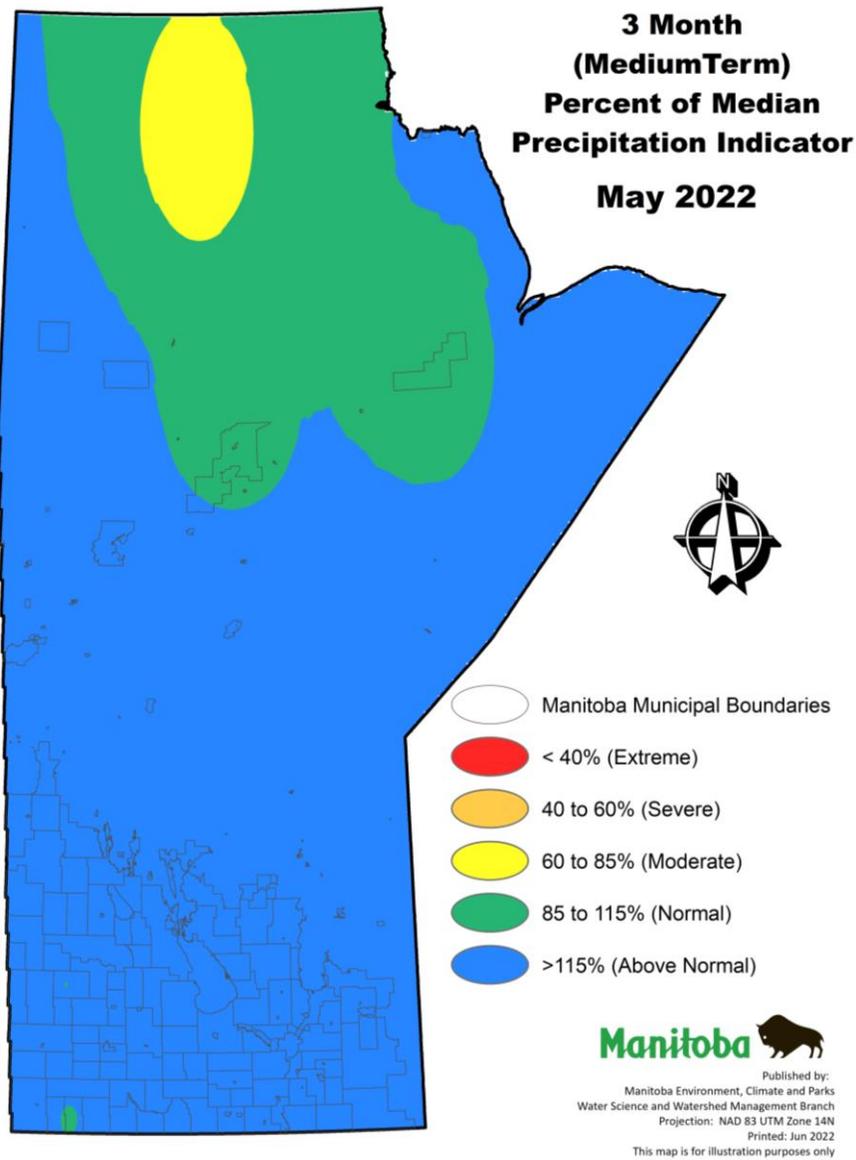


Figure 2: Three month (medium term) per cent of median precipitation indicator.

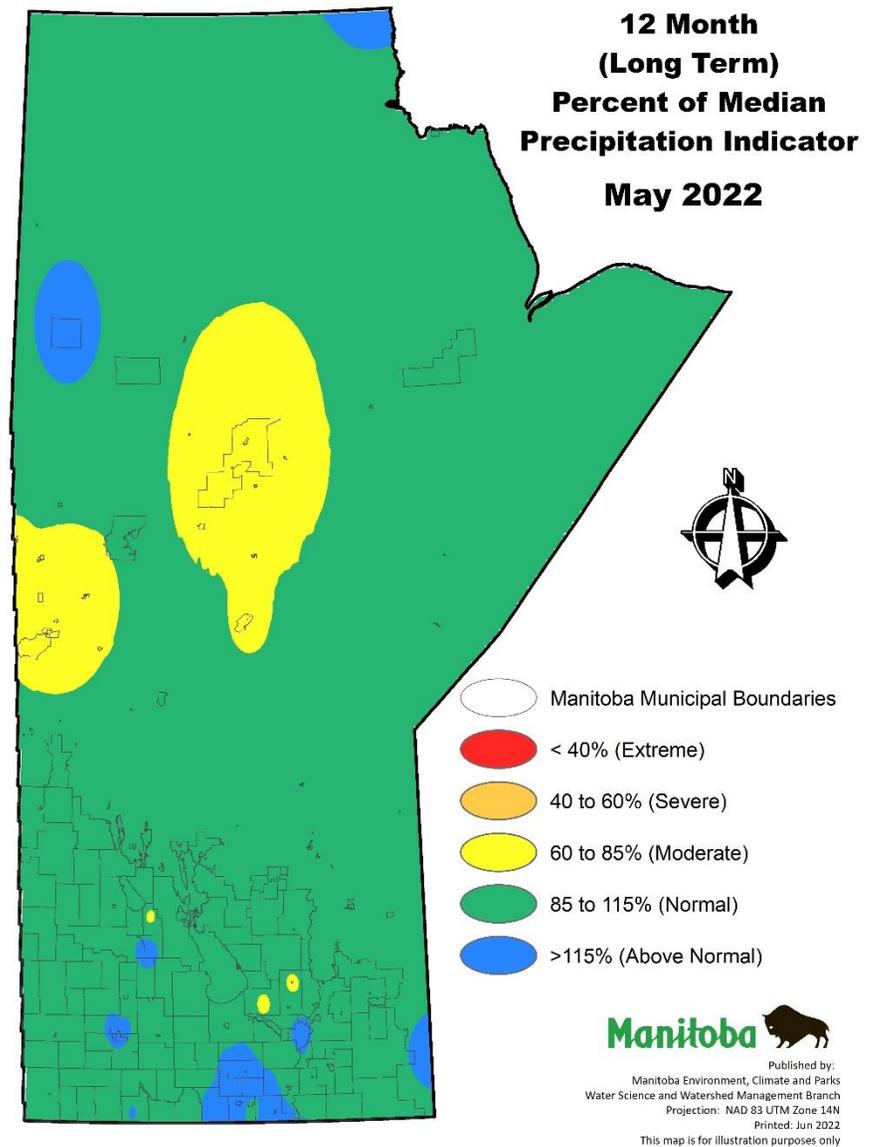


Figure 3: Twelve month (long term) per cent of median precipitation indicator.

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 June 1, 2022.

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.

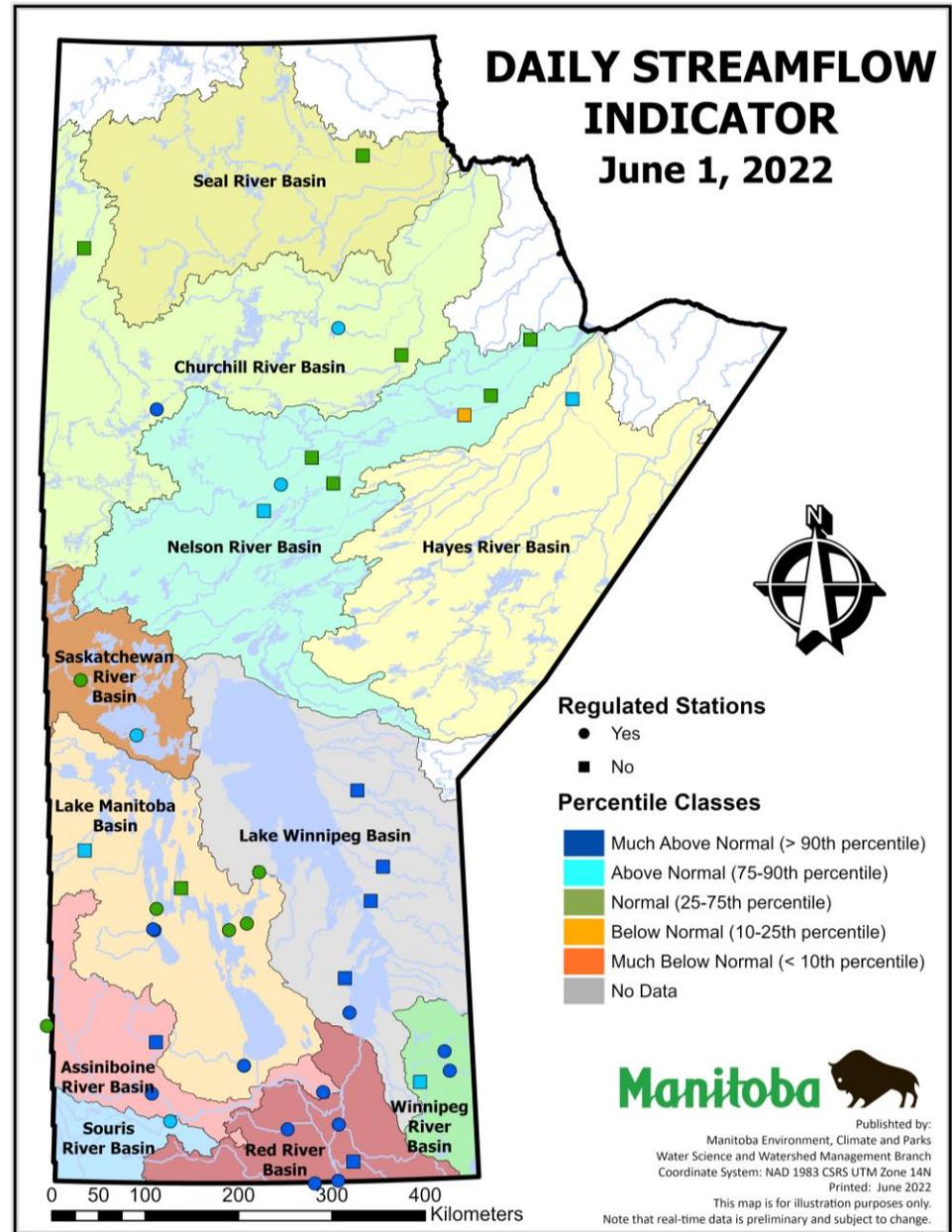


Figure 4: Daily streamflow and lake level indicator for June 1, 2022

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).

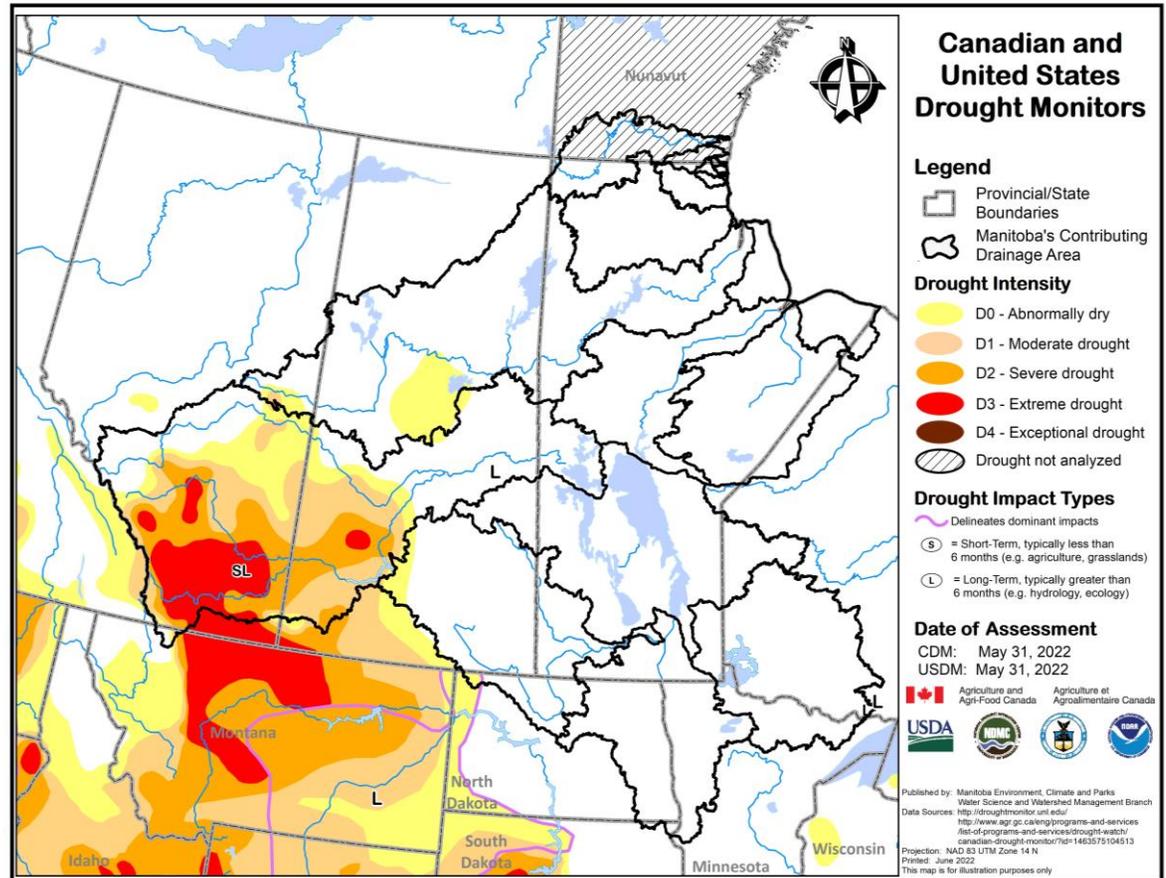


Figure 5: Canadian and United States Drought Monitors' classification of short-term (S) and long-term (L) drought conditions assessed as of May 31, 2022.

Water Availability

Reservoir Conditions

Table 1: Water Supply Reservoir Levels and Storages – June 1, 2022 (Southern and Western Manitoba).

Water Supply Reservoir Levels and Storages - June 1, 2022								
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	1405.48	June 1, 2022	+2.98	300,000	342,523	114%
Lake Wahtopanah (Rivers)*	Rivers	1,536	1539.80	June 1, 2022	+3.80	24,500	32,144	131%
Minnewasta (Morden)*	Morden	1,082	1082.71	June 1, 2022	+0.71	3,150	3,265	104%
Stephenfield*	Carman, Pembina Valley Water Co-op	972	973.42	June 1, 2022	+1.42	3,810	4,489	118%
Vermilion*	Dauphin	1,274	1275.62	June 1, 2022	+1.62	2,600	2,977	115%
Goudney (Pilot Mound)*		1,482	1485.14	June 1, 2022	+3.14	450	638	142%
Jackson Lake*		1,174	1173.94	June 1, 2022	-0.06	2,990	2,975	100%
Manitou (Mary Jane)*		1,537	1537.31	June 1, 2022	+0.31	1,150	1,159	101%
Turtlehead (Deloraine)*	Deloraine	1,772	1774.38	June 1, 2022	+2.38	1,400	1,615	115%
Lake Irwin*		1,178	1178.99	June 1, 2022	+0.99	3,800	4,446	117%
Minnedosa*		1,682	1680.78	June 1, 2022	-1.22	1,688	1,372	81%
Boissevain*	Boissevain	1,697	1694.47	March 7, 2022	-2.53	505	338	67%
Elgin*		1,532	1530.74	March 7, 2022	-1.26	520	433	83%
St. Malo*		840	841.36	May 24, 2022	+1.36	1,770	1,994	113%
Kenton Reservoir		1,448	1448.19	May 12, 2022	+0.19	600	608	101%
Killarney Lake		1,615	1616.51	May 20, 2022	+1.51	7,360	8,053	109%

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

On Farm Water Supply

On farm water supply updates from Manitoba Agriculture’s Crop Report Issue 5 (June 7, 2022) are provided in Table 2.

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

Region	General Dugout Condition
Eastern	All creeks, streams, dugouts, and sloughs have refilled to capacity, and generally remain within their banks, but water levels remain high.
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 June 5, 2022.

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.

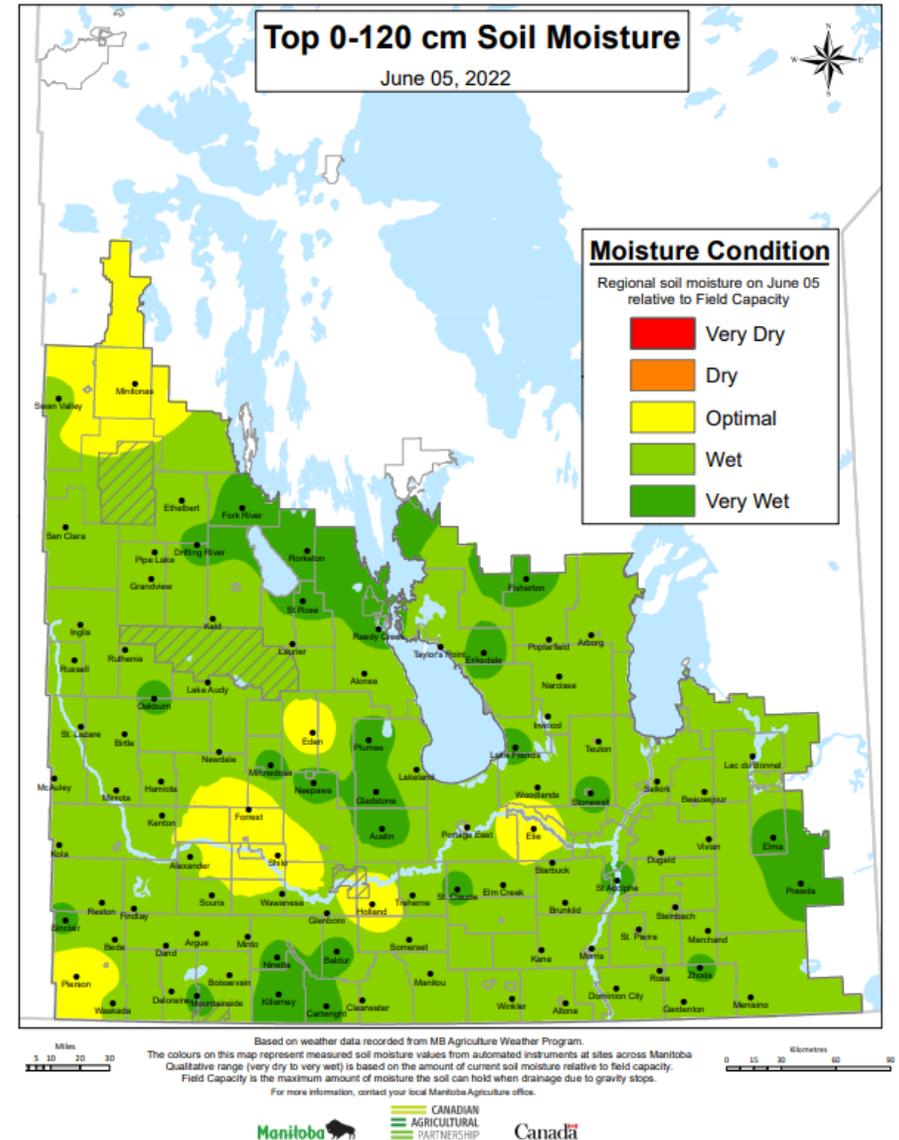


Figure 6: Manitoba Agriculture’s June 5, 2022 mapping of soil moisture conditions in the top 0 – 120 cm.

Wildland Fires

Due to the wet spring conditions, wildfires have been very minimal so far in 2022, with only seven fires burning a total of 34 hectares by the start of June. No travel or burning restrictions are currently in place.

Impacts due to Dry Conditions

Nearly all regions of the province remain short on feed supplies due to dry conditions over the past several years, resulting in cattle being sent to pasture earlier than desired, with many pastures in fragile condition after overgrazing last year.

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

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Manitoba Transportation and Infrastructure - Reservoir level information:

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

Manitoba Natural Resources and Northern Development Fire Program:

<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/>