



Monthly Hydrometeorological Report

Report for April 2024

NWS FORM E-5 U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910	HSA OFFICE: Marquette, MI
	REPORT FOR (MONTH / YEAR): April 2024
	DATE: May 14th, 2024
	SIGNATURE: Evan Kutta, Hydro Program Manager Ryan Metzger, MIC
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (WSOM E-41).	



An X inside this box indicates no flooding occurred within this Hydrologic Service Area.

Summary

Near to above-normal precipitation was observed across Upper Michigan during April when WFO Marquette, Manistique, and Munising all recorded more than 150% of normal precipitation (Table 1, Figure 6). A wintry storm on April 2-4 brought the large majority of Upper Michigan’s monthly snowfall and a wetter storm tracked across the region April 28-29. Percent of normal year-to-date precipitation increased at each observation site relative to March values (Table 2) signaling a continuation of the transition to above-normal precipitation that began in March. Temperatures trended closer to average during April, but all observations sites remain in the top 10 warmest January-April periods with temperature anomalies of +3°F to +7°F (Table 3). Despite the wetter pattern, the very warm start to the year melted the paltry seasonal snowpack during March resulting in much below-normal streamflow for most of Upper Michigan’s waterways during April (Figures 1-3). Warmth also maintained drought conditions, mainly across portions of western Upper Michigan where deficits in soil moisture continue to linger, but have improved since March (Figures 4, 7-9).

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	5.17"	154%	19.1"
Marquette City	2.68"	98%	T
Quincy Hill	1.74"	M	4.4"
Ironwood	2.81"	89%	4.1"
Iron Mountain	3.71"	133%	4.0"
Manistique	4.75"	167%	4.0"
Munising	4.51"	153%	2.4"
Stambaugh	2.53"	99%	4.4"

Table 1. Observed liquid equivalent precipitation, percent of normal, and snowfall at long-term climate sites across Upper Michigan for April 2024.

NOTE: Precipitation after 8 AM EST April 30th was counted in May stats for all but the WFO Marquette site due to the reporting structure of our cooperative observers.



Monthly Hydrometeorological Report

Report for April 2024

Year-to-Date Precipitation Summary

Location	Precipitation	% of Normal	Rank	Last Year
WFO Marquette (Records: 1962-2023)	12.22"	117%	15 th wettest	17.49"
Marquette City (Records: 1875-2023)	6.73"	86%	43 rd driest	10.13"
Ironwood (Records: 1901-2023)	7.56"	93%	55 th driest	16.13"
Iron Mountain (Records: 1902-2023)	8.11"	125%	24 th wettest	11.03"
Manistique (Records: 1938-2023)	7.86"	110%	24 th wettest	10.81"
Munising (Records: 1912-2023)	12.36"	130%	17 th wettest	14.80"
Stambaugh (Records: 1900-2023)	6.64"	108%	49 th driest	9.98"

Table 2. Total observed precipitation at long-term climate sites across Upper Michigan for January through April 2024.

Year-to-Date Temperature Summary

Location	Avg Temp	Departure	Rank	Last Year
WFO Marquette (Records: 1962-2023)	42.8°F	+3.0°F	6 th warmest	40.4°F
Marquette City (Records: 1875-2023)	31.5°F	+4.9°F	7 th warmest	29.1°F
Ironwood (Records: 1901-2023)	28.0°F	+5.1°F	5 th warmest	24.4°F
Iron Mountain (Records: 1902-2023)	31.4°F	+6.5°F	2 nd warmest	28.1°F
Manistique (Records: 1938-2023)	29.7°F	+4.2°F	6 th warmest	28.0°F
Munising (Records: 1912-2023)	30.5°F	+5.3°F	3 rd warmest	27.9°F
Stambaugh (Records: 1900-2023)	28.0°F	+5.5°F	5 th warmest	24.0°F

Table 3. Average temperature observed at long-term climate sites across Upper Michigan for January through April 2024.



Flooding Conditions

There were no flooding concerns during the month of April 2024.

Media Links

None.

River Conditions

Despite near to above-normal precipitation during April, streamflow across the U.P. was much below-normal. This is likely associated with the paltry seasonal snowpack that also melted during March or about a month early. Only the Escanaba, Michigamme, Pine, and Carp Rivers had near normal streamflow during April 2024.

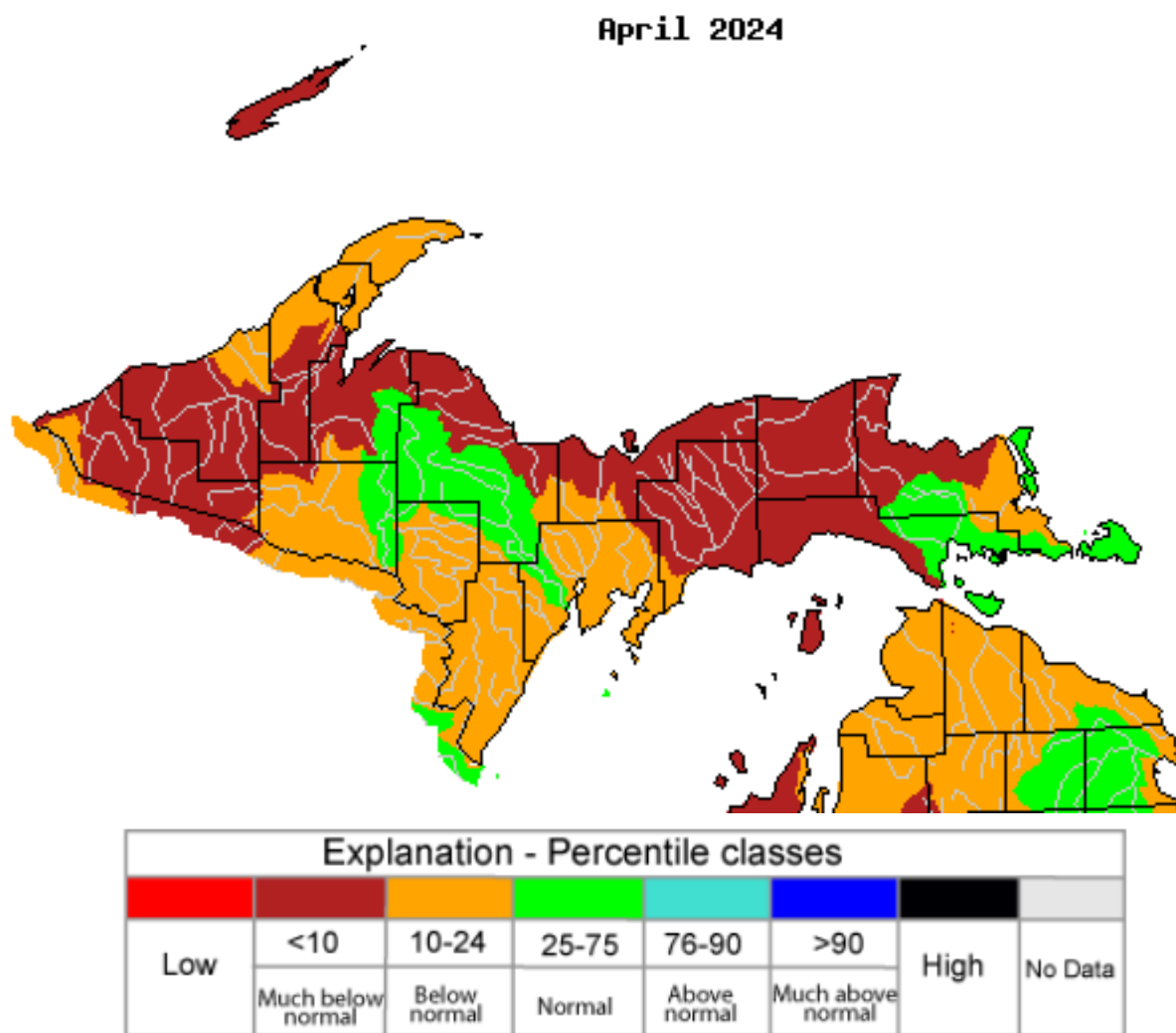


Figure 1: USGS monthly average streamflow in April 2024 across Upper Michigan



Snowpack SWE (Snow Water Equivalent) Conditions

Seasonal snowpack melted prior to a heavy, wet snow event that occurred April 2-4 that gradually melted over the following week. No significant snowfall has occurred since and snowpack is now on summer vacation!

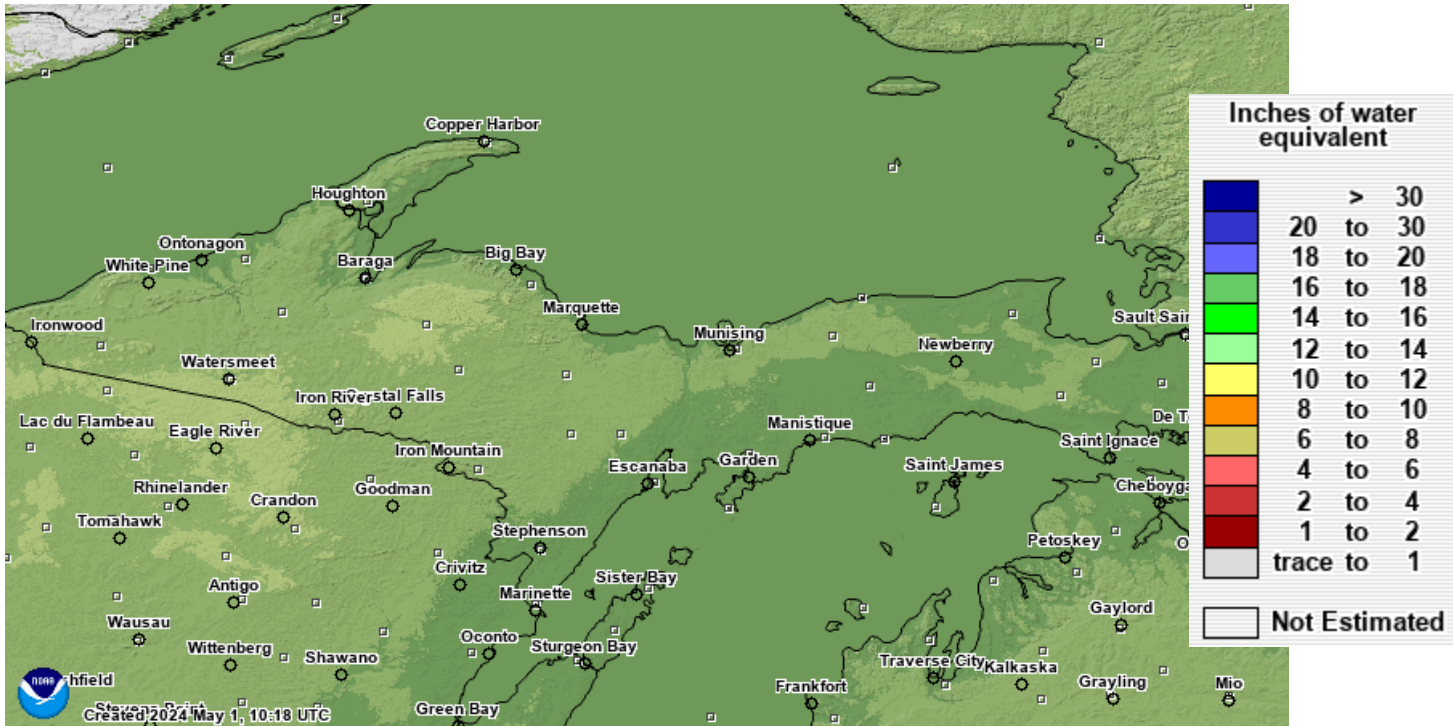


Figure 2: Current modeled snowpack snow water equivalent on May 1, 2024.

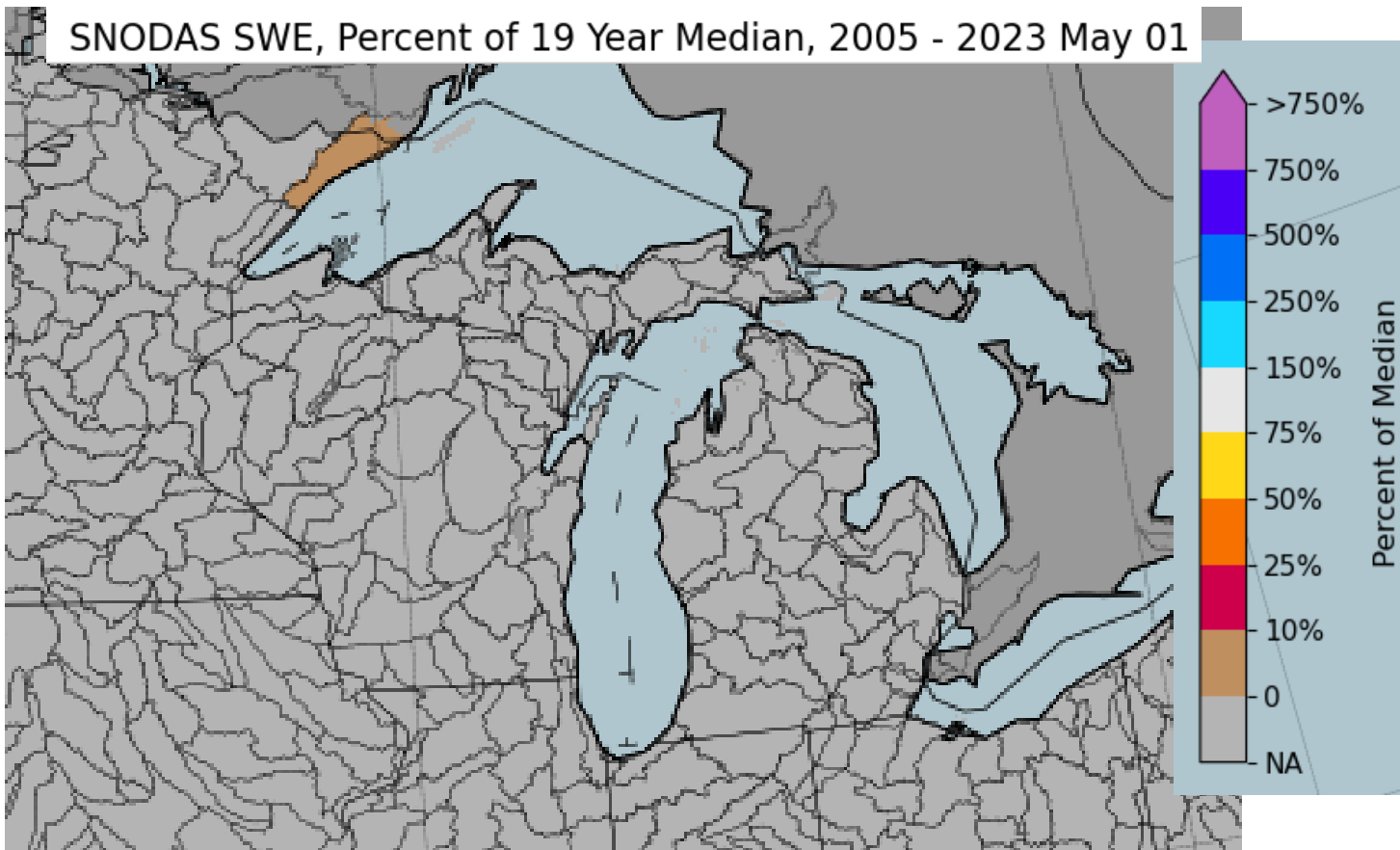


Figure 3: Modeled snow water equivalent for drainage basins on May 1, 2024 as a percent of 18-year median.



Drought Discussion

Improvement to drought conditions was noted across most of Upper Michigan during April. However, above-normal temperatures and near-normal precipitation across far western Upper Michigan prolonged moderate to severe drought. For the latest drought status, please visit <http://www.drought.gov>.

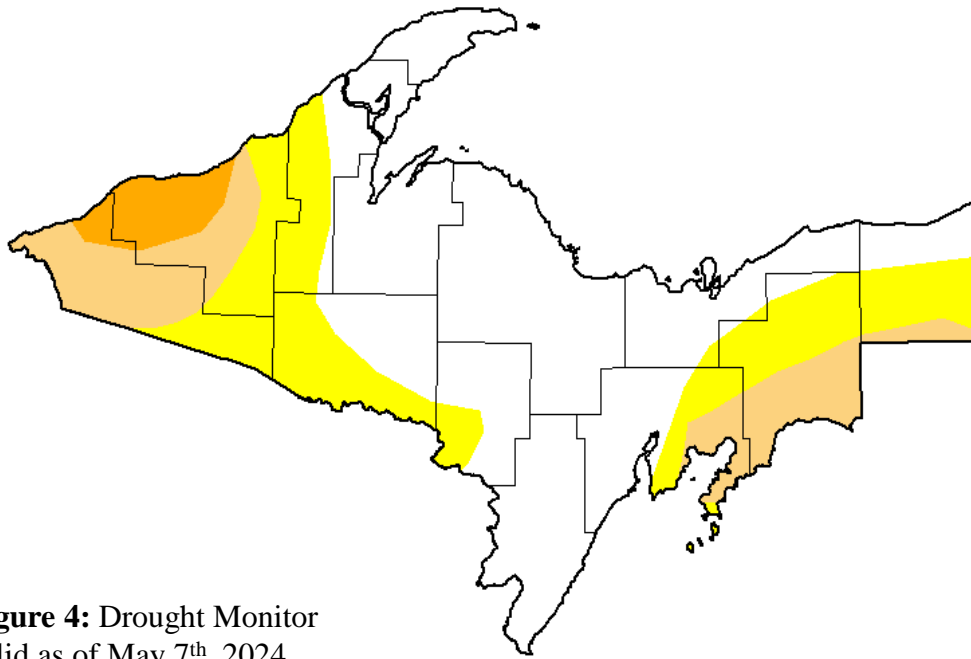


Figure 4: Drought Monitor valid as of May 7th, 2024.

May 7, 2024
 (Released Thursday, May 9, 2024)
 Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	55.29	44.71	18.34	3.90	0.00	0.00
Last Week 04-30-2024	42.35	57.65	33.32	12.01	0.00	0.00
3 Months Ago 02-06-2024	0.00	100.00	25.83	4.96	0.00	0.00
Start of Calendar Year 01-02-2024	0.01	99.99	15.20	4.96	0.00	0.00
Start of Water Year 09-26-2023	55.88	44.12	13.42	5.42	0.00	0.00
One Year Ago 05-09-2023	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
 Curtis Riganti
 National Drought Mitigation Center



droughtmonitor.unl.edu

Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	0
Flood Watch (FFA)	0
Flood Warning (FLW)	0
Flood Advisories and Statements (FLS)	0
Flash Flood Warning (FFW)	0
Flash Flood Statement (FFS)	0
Hydrologic Summary (RVA)	30



Precipitation Summary

Accumulated Precipitation (in)
April 01, 2024 to April 30, 2024

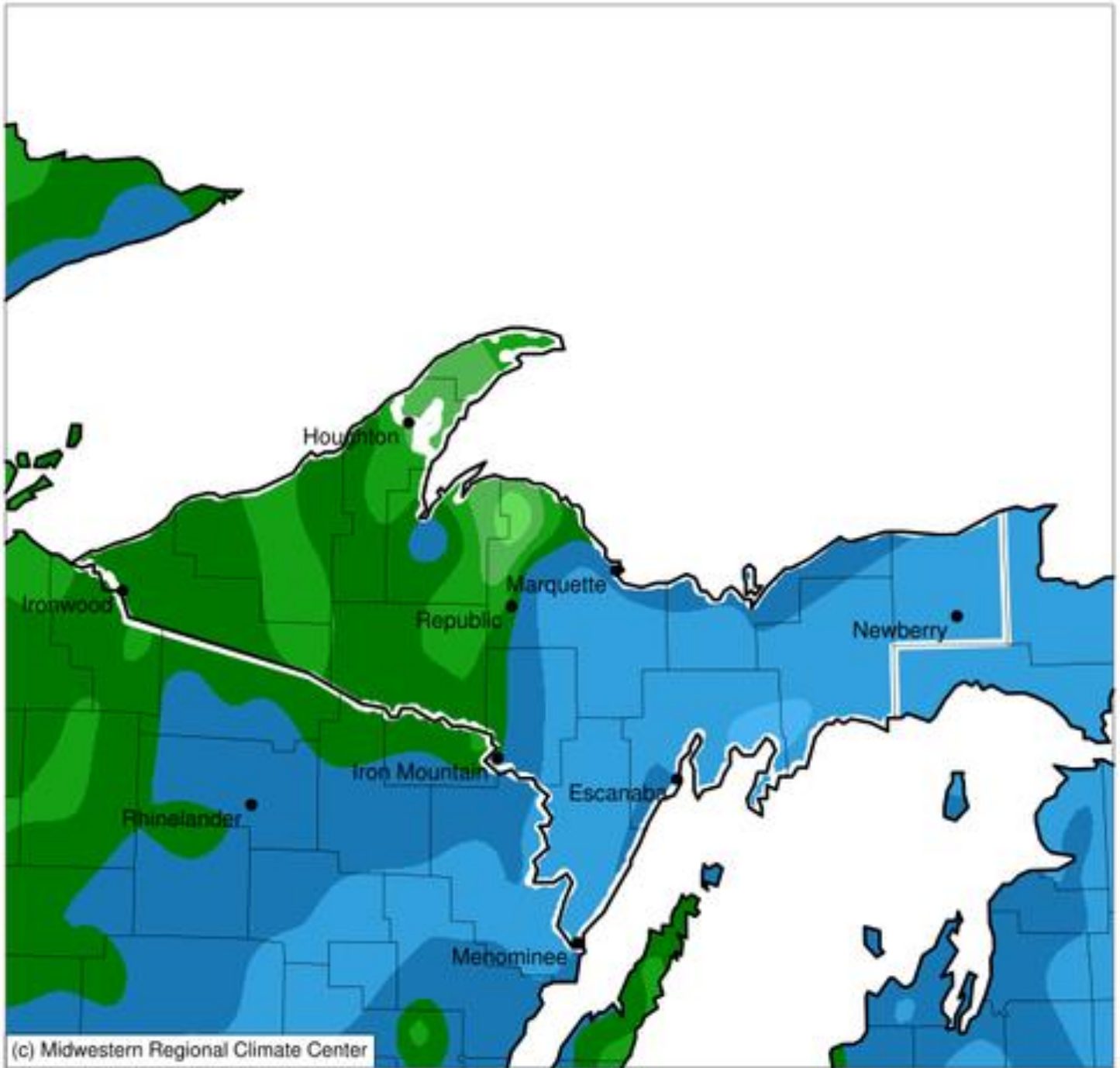


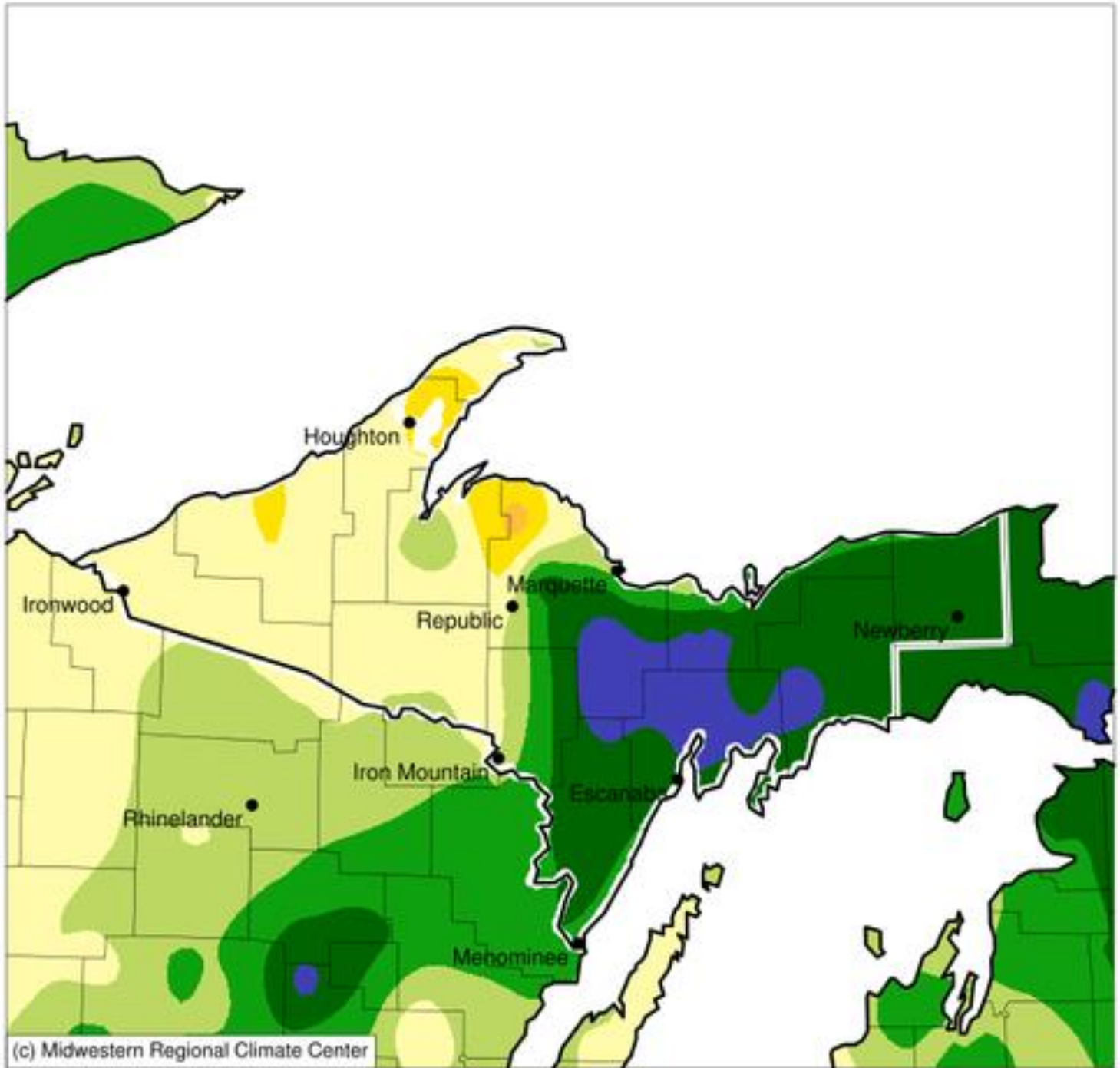
Figure 5: April 2024 Monthly Precipitation Totals.



Precipitation Summary Continued

Accumulated Precipitation (in): Percent of 1991-2020 Normals

April 01, 2024 to April 30, 2024



50 75 100 125 150 175

Figure 6: April 2024 Percent of Normal of Accumulated Precipitation.



Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)
APR, 2024

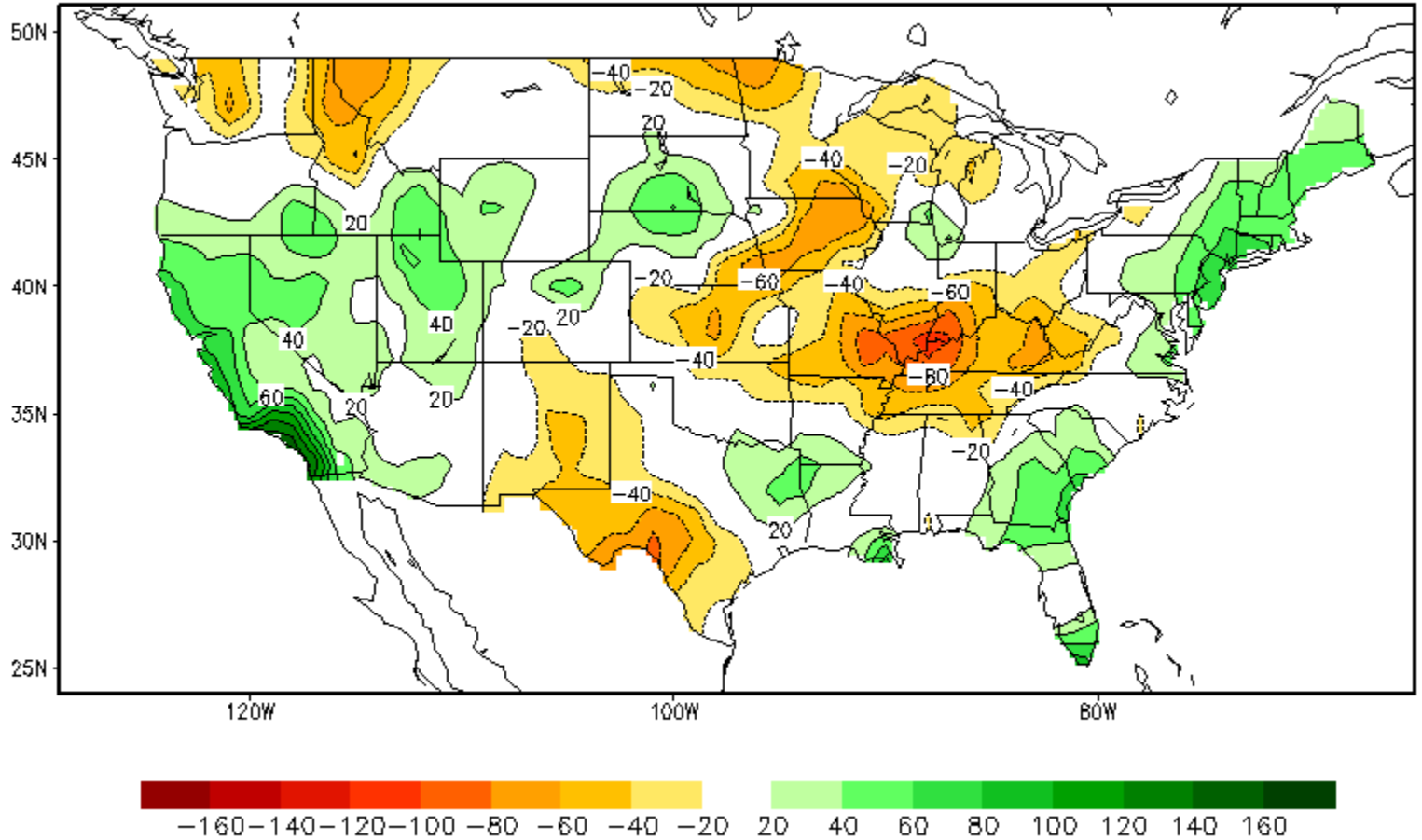
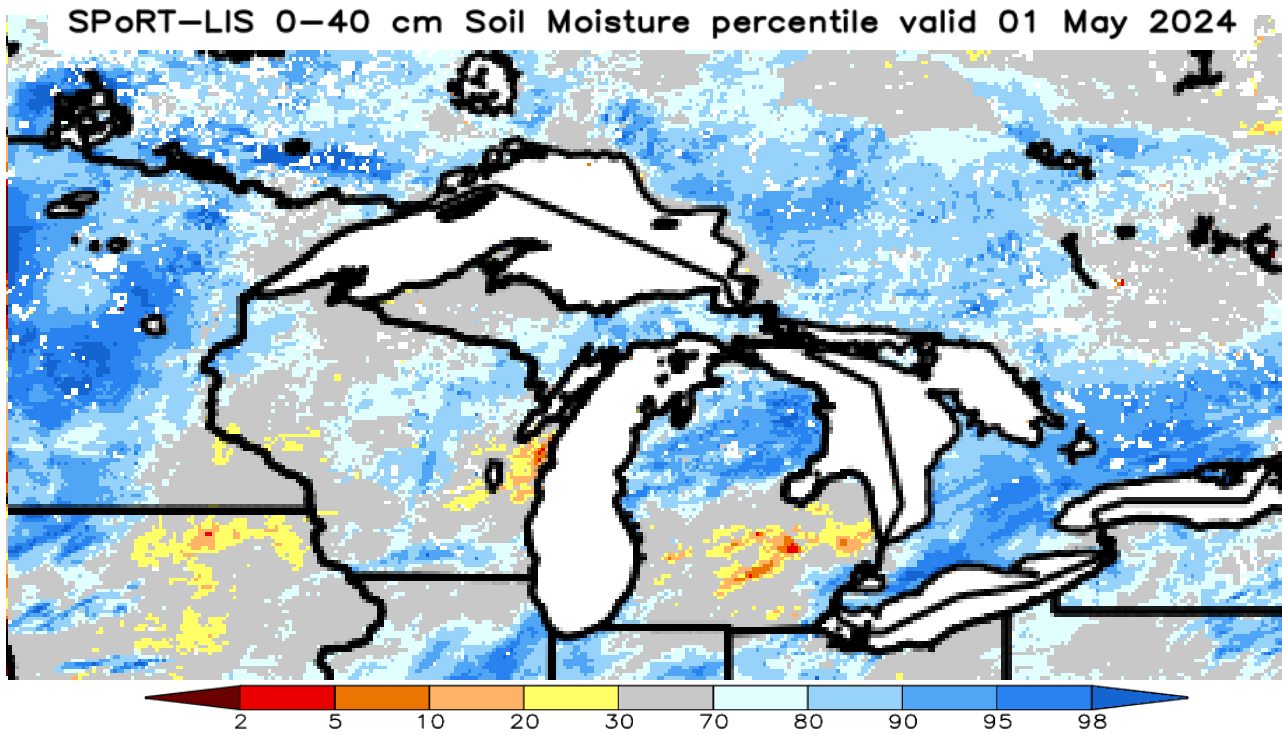


Figure 7: Climate Prediction Center's monthly average soil moisture anomaly for April 2024.

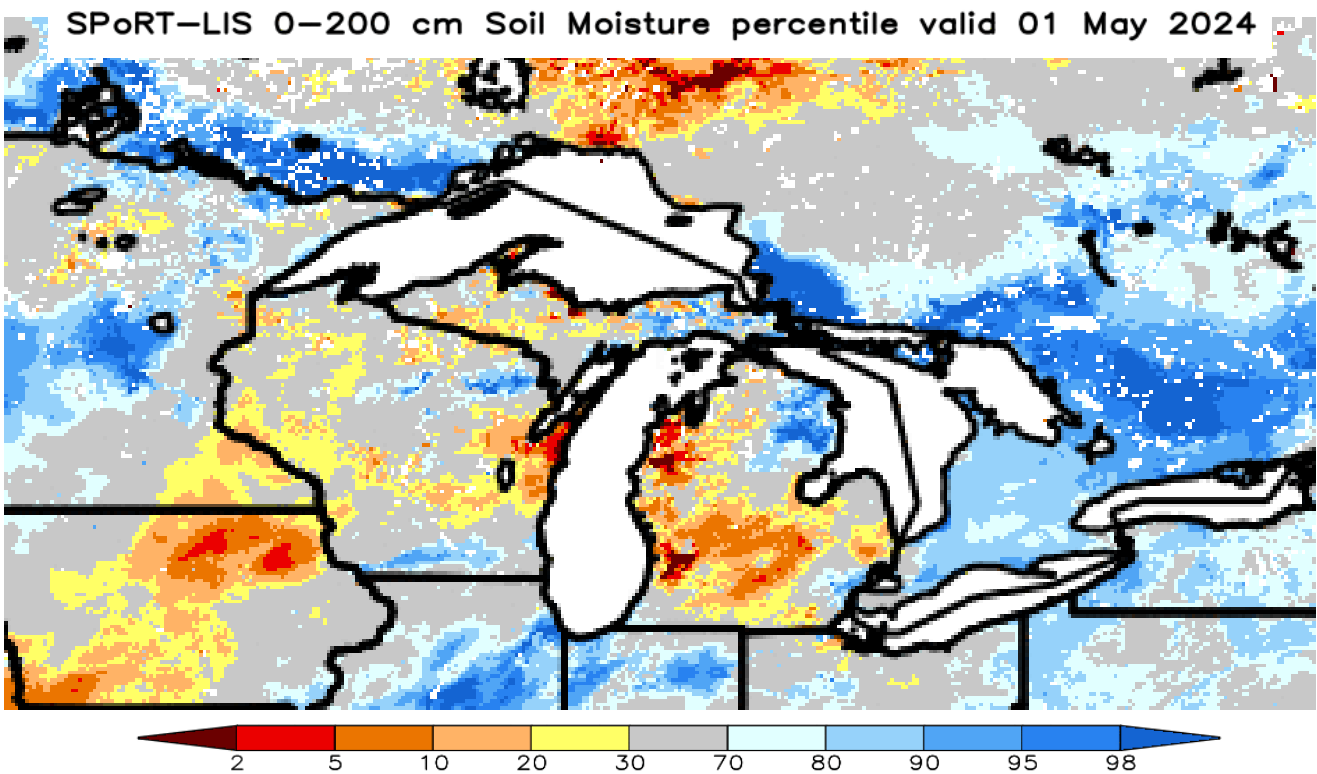


Shallow and Deep Soil Moisture Percentiles



NOTE
Experimental

Figure 8: NASA's Short-term Prediction Research and Transition (SPoRT) Center's shallow (0-40 cm) soil moisture percentile valid May 1, 2024.



NOTE
Experimental

Figure 9: NASA's Short-term Prediction Research and Transition (SPoRT) Center's deep (0-200 cm) soil moisture percentile valid May 1, 2024.