



Monthly Hydrometeorological Report

Report for May 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): May 2024
	DATE: June 10th, 2024
	SIGNATURE: Evan Kutta 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

After a roughly 9-month dry spell, May was the 3rd month in a row with near to above normal precipitation across Upper Michigan (Table 1). Southern and eastern portions of the U.P. were particularly damp with Iron Mountain, Manistique, and Munising all recording their 5th wettest spring season with more than 160% of normal precipitation (Table 2). Spring temperatures were 1.6°F to 4.0°F warmer than normal (Table 3) with year-to-date temperatures ranking in the top 10 warmest across Upper Michigan (not shown). The persistently damp pattern compensated for the lack of late-season snowmelt resulting in near-normal streamflow across most of the area (Figure 1). Above-normal rainfall allowed for improving drought conditions across Upper Michigan, but moderate drought lingered across far western portions of the area (Figure 4). Calculated soil moisture anomalies for the whole month were near to below-normal (Figure 7), but satellite observations from June 1st noted near to above-normal shallow and deep soil moisture (Figures 8 and 9).

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	2.71"	80%	T
Marquette City	2.85"	98%	0.0"
Quincy Hill	2.78"	M	0.0"
Ironwood	3.96"	106%	0.0"
Iron Mountain	5.11"	147%	0.0"
Manistique	5.11"	171%	0.0"
Munising	4.64"	151%	0.0"
Stambaugh	4.11"	130%	0.0"

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

NOTE: Precipitation after 8 AM EST May 31st was counted in June stats for all but the WFO Marquette site due to the reporting structure of our cooperative observers.



Spring (March - May) Precipitation Summary

Location	Precipitation	% of Normal	Rank	Last Year
WFO Marquette (Records: 1962-2023)	10.59"	115%	18 th wettest	14.49"
Marquette City (Records: 1875-2023)	7.48"	103%	77 th wettest	11.34"
Ironwood (Records: 1901-2023)	9.42"	115%	37 th wettest	13.53"
Iron Mountain (Records: 1902-2023)	11.80"	163%	5 th wettest	8.53"
Manistique (Records: 1938-2023)	11.47"	168%	5 th wettest	8.63"
Munising (Records: 1912-2023)	12.24"	164%	5 th wettest	14.50"
Stambaugh (Records: 1900-2023)	9.49"	133%	24 th wettest	8.44"

Table 2. Total observed precipitation at long-term climate sites across Upper Michigan for March, April, May 2024.

Spring (March - May) Temperature Summary

Location	Avg Temp	Departure	Rank	Last Year
WFO Marquette (Records: 1962-2023)	41.4°F	4.0°F	6 th warmest	38.6°F
Marquette City (Records: 1875-2023)	41.6°F	2.4°F	20 th warmest	39.0°F
Ironwood (Records: 1901-2023)	40.5°F	2.4°F	41 st warmest	38.2°F
Iron Mountain (Records: 1902-2023)	44.4°F	2.9°F	10 th warmest	40.9°F
Manistique (Records: 1938-2023)	40.1°F	1.9°F	22 nd warmest	37.7°F
Munising (Records: 1912-2023)	41.2°F	3.3°F	14 th warmest	38.5°F
Stambaugh (Records: 1900-2023)	40.1°F	1.6°F	39 th warmest	36.8°F

Table 3. Average temperature observed at long-term climate sites across Upper Michigan for March, April, May 2024.



Flooding Conditions

There were no flooding concerns during the month of May.

Media Links

None.

River Conditions

Streamflow was near-normal across most of Upper Michigan during May except for below normal streamflow for the Sturgeon River basin near Chassel and above-normal streamflow for the Cedar River and Ford River basins.

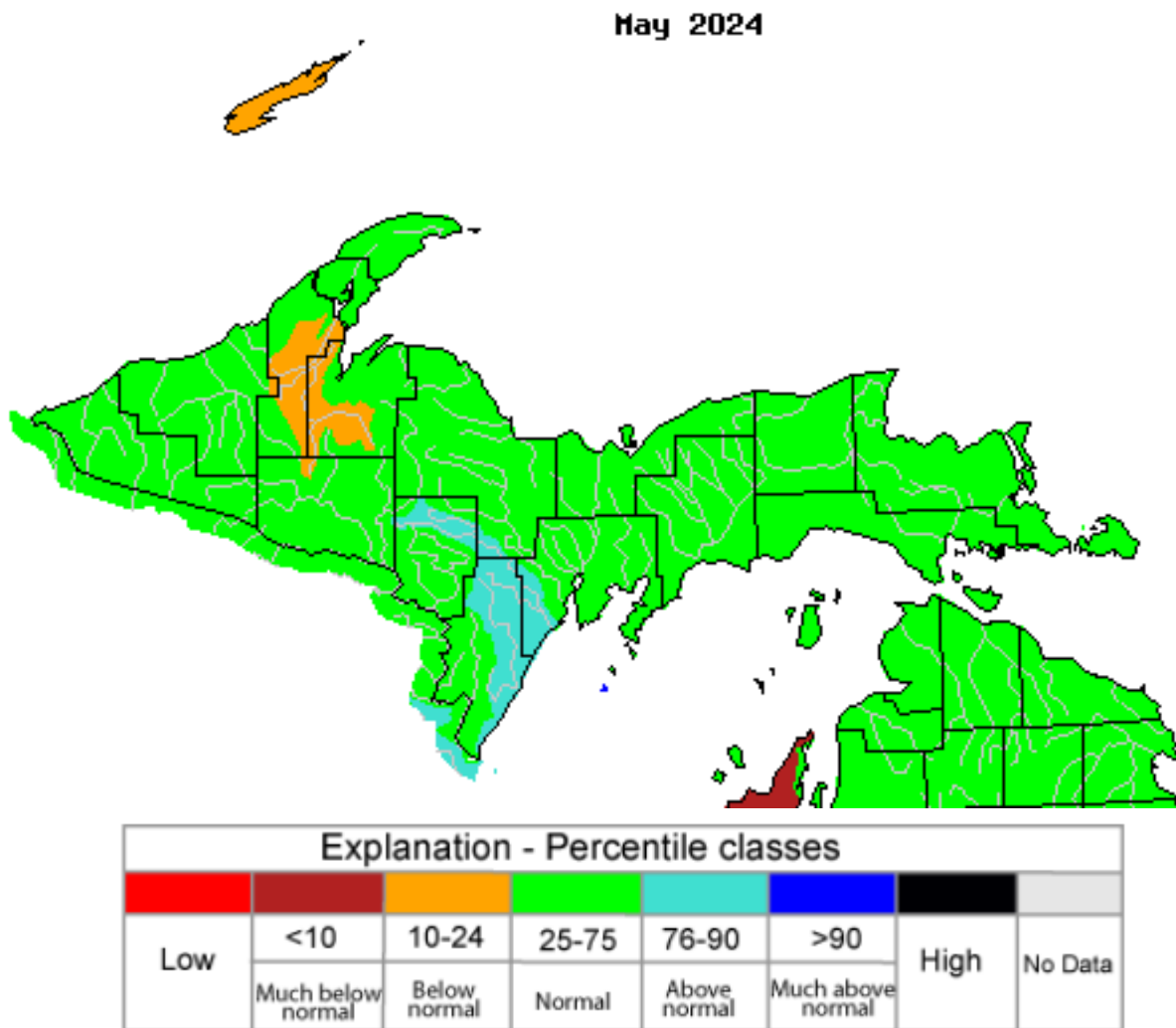


Figure 1: USGS monthly average streamflow in May 2024 across Upper Michigan



Snowpack SWE (Snow Water Equivalent) Conditions

Seasonal snowpack is on summer vacation.

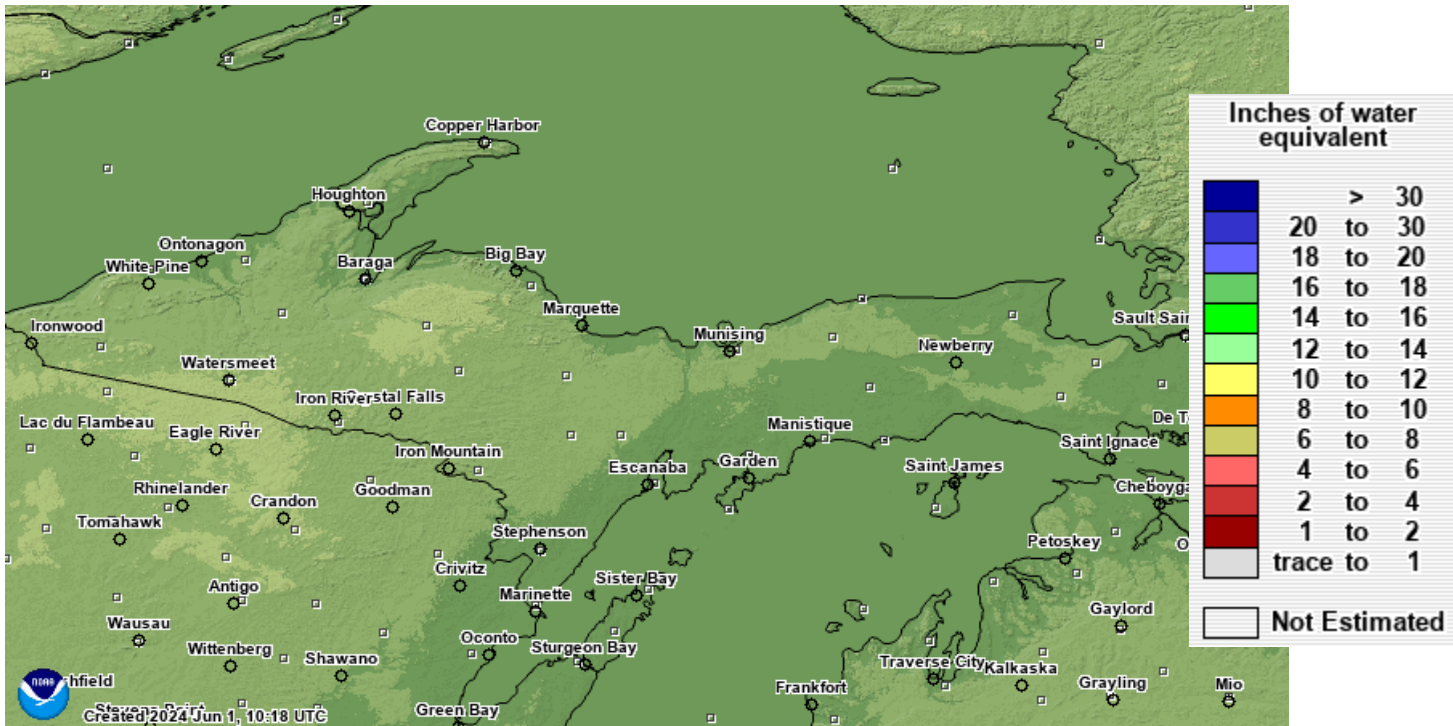


Figure 2: Current modeled snowpack snow water equivalent on June 1st, 2024.

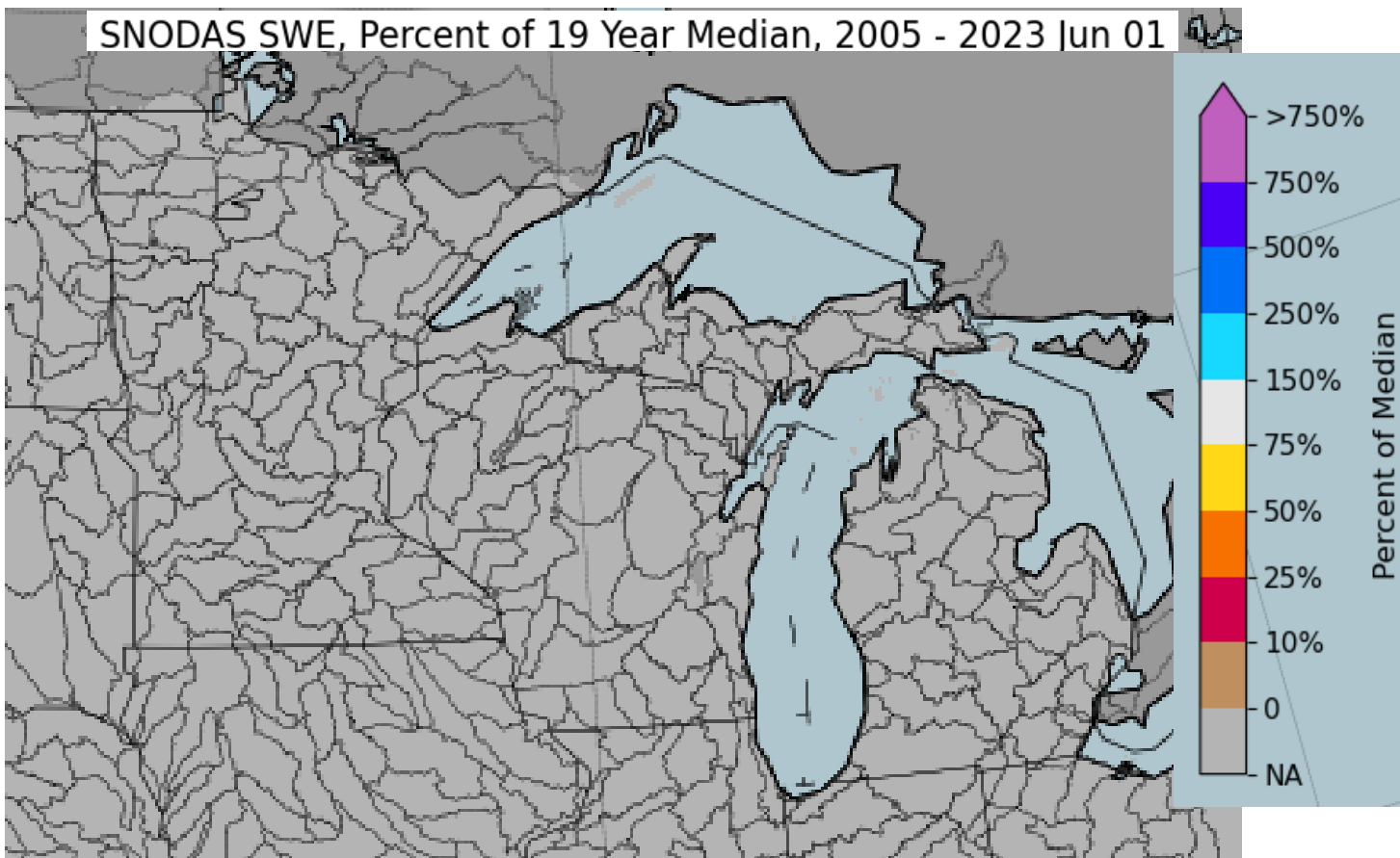


Figure 3: Modeled snow water equivalent for drainage basins on June 1st as a percent of 18-year median.



Drought Discussion

Above normal rainfall allowed for improving drought conditions across Upper Michigan, but moderate drought lingered across far western portions of the U.P. during May. For the latest drought status, please visit <http://www.drought.gov>.

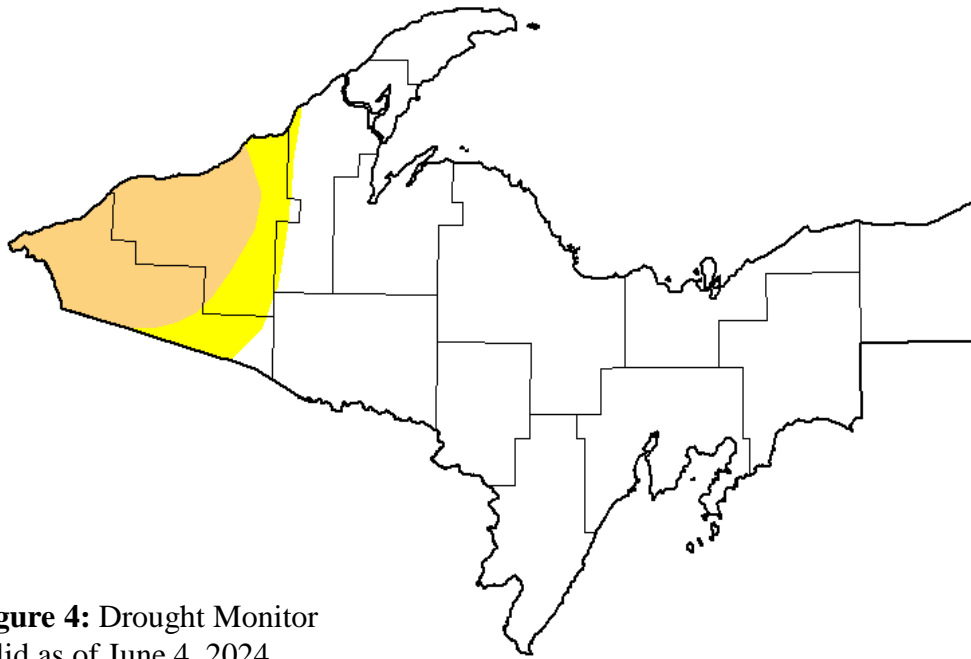


Figure 4: Drought Monitor valid as of June 4, 2024.

June 4, 2024
 (Released Thursday, Jun. 6, 2024)
 Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	81.23	18.77	12.01	0.00	0.00	0.00
Last Week 05-28-2024	81.23	18.77	12.01	0.00	0.00	0.00
3 Months Ago 03-05-2024	0.00	100.00	79.91	14.60	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 06-06-2023	91.79	8.21	0.00	0.00	0.00	0.00

Intensity:
 None (White) D2 Severe Drought (Orange)
 D0 Abnormally Dry (Yellow) D3 Extreme Drought (Red)
 D1 Moderate Drought (Light Orange) D4 Exceptional Drought (Dark Red)

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>

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 CPC/NOAA



droughtmonitor.unl.edu

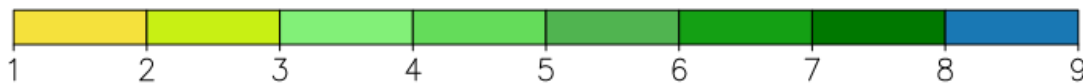
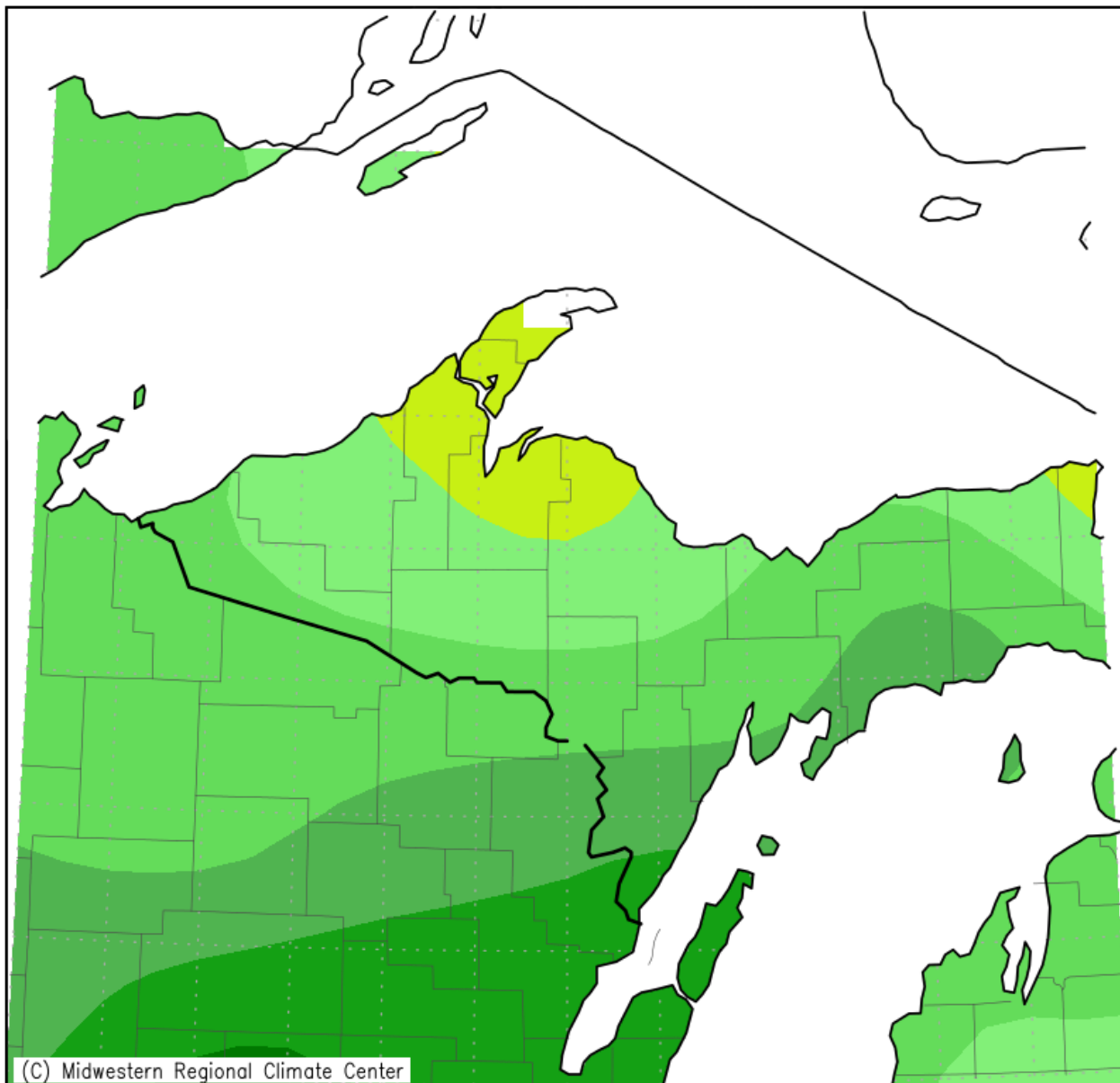
Hydro Products Issued

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)	31



Precipitation Summary

Accumulated Precipitation (in)
May 1, 2024 to May 31, 2024



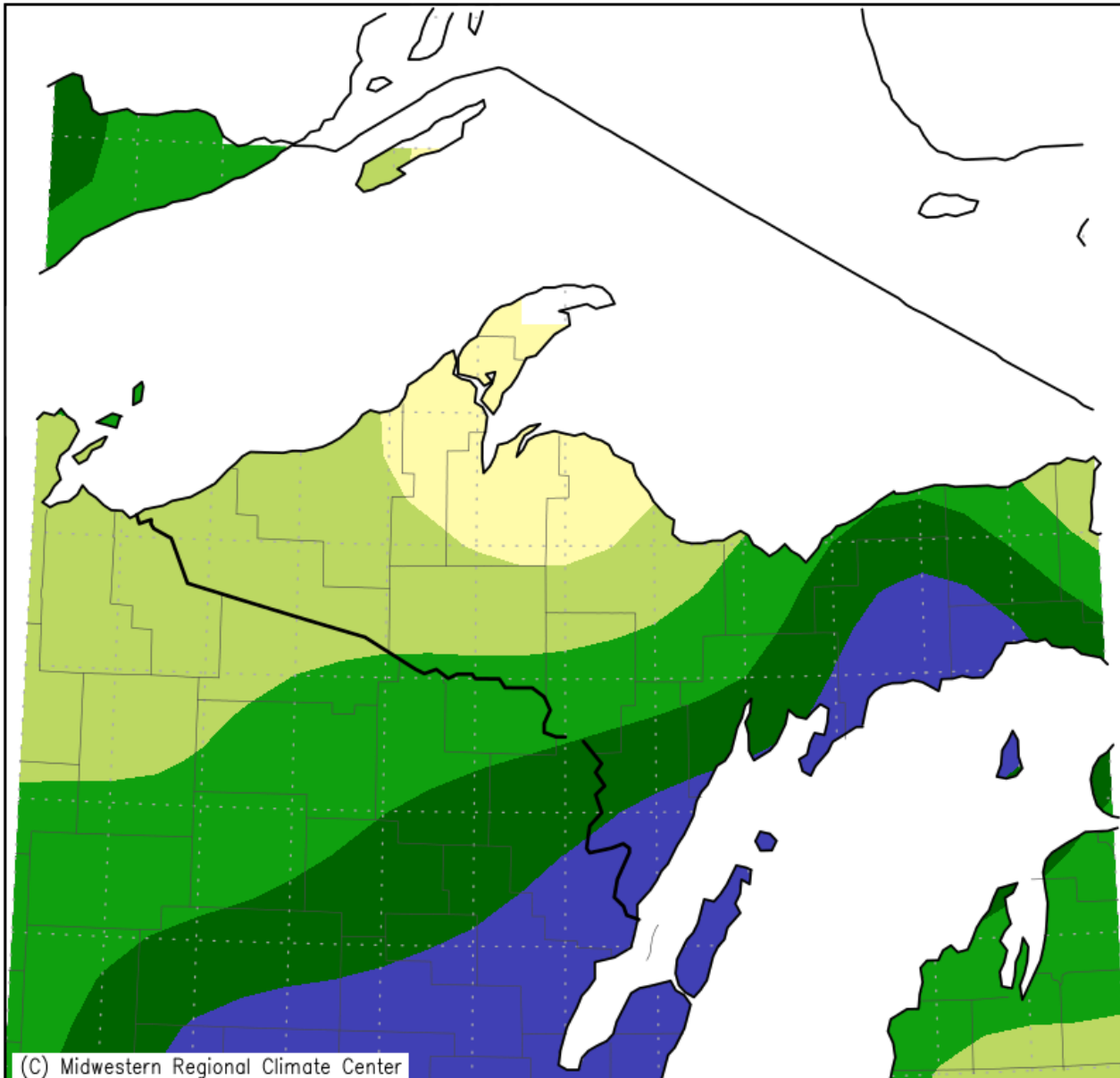
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 6/9/2024 8:29:13 PM EDT

Figure 5: May 2024 Monthly Precipitation Totals.

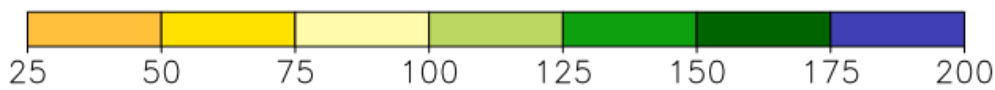


Precipitation Summary Continued

Accumulated Precipitation: Percent of Mean
May 1, 2024 to May 31, 2024



Mean period is 1991–2020.



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
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Figure 6: May 2024 Percent of Normal of Accumulated Precipitation.



Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)
MAY, 2024

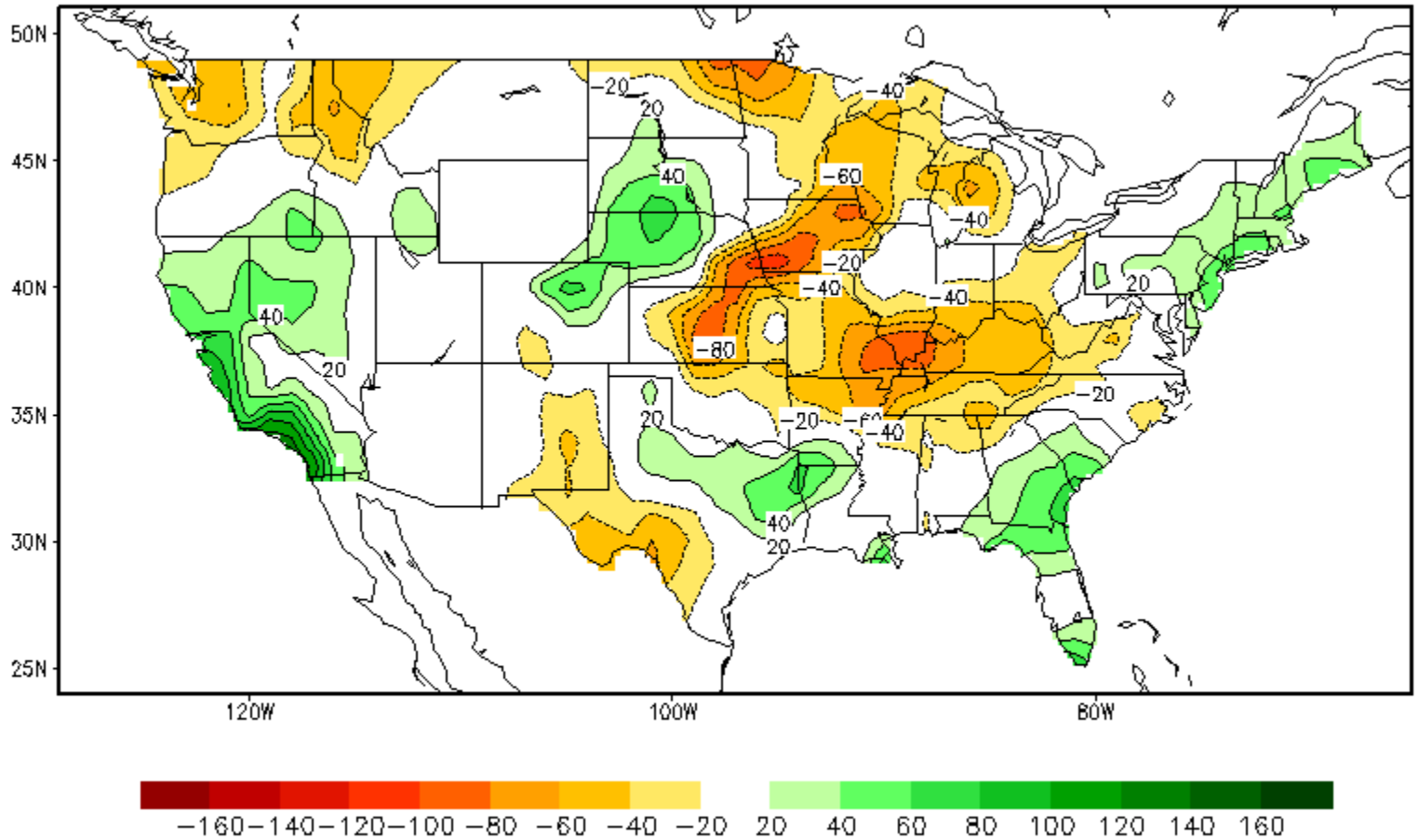
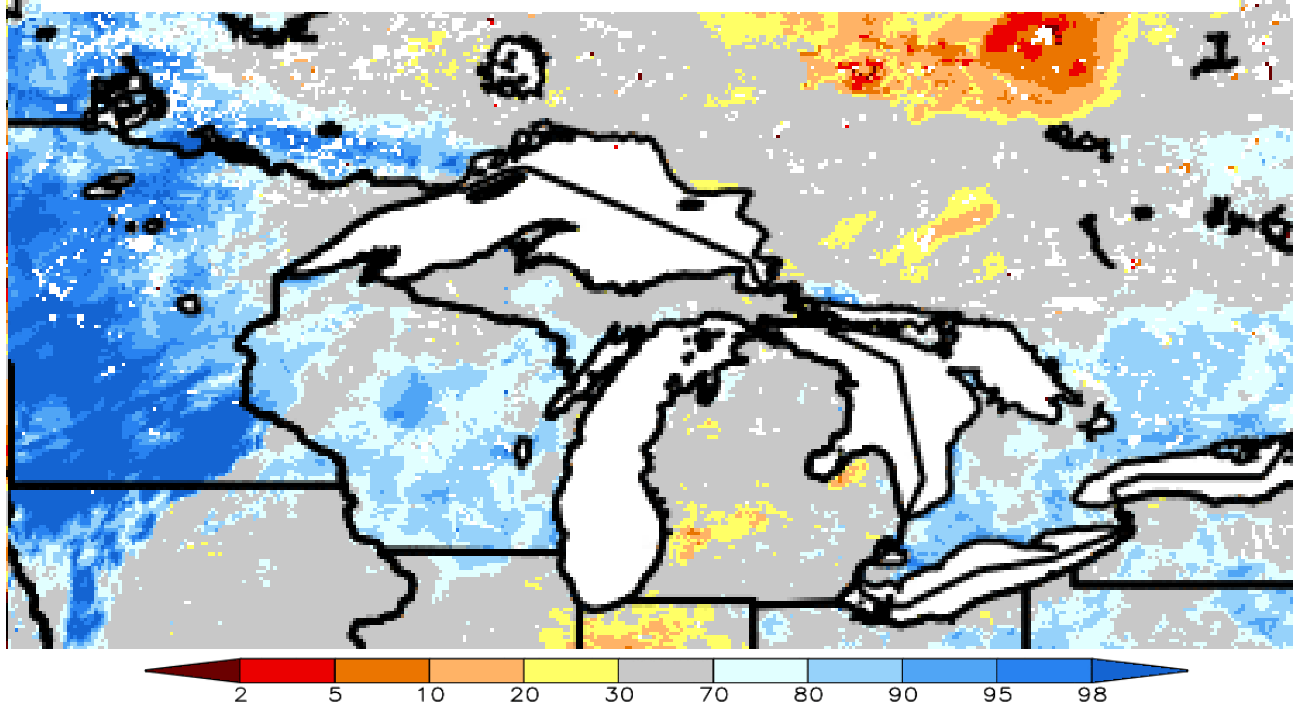


Figure 7: Climate Prediction Center's monthly average soil moisture anomaly for May 2024.



Shallow and Deep Soil Moisture Percentiles

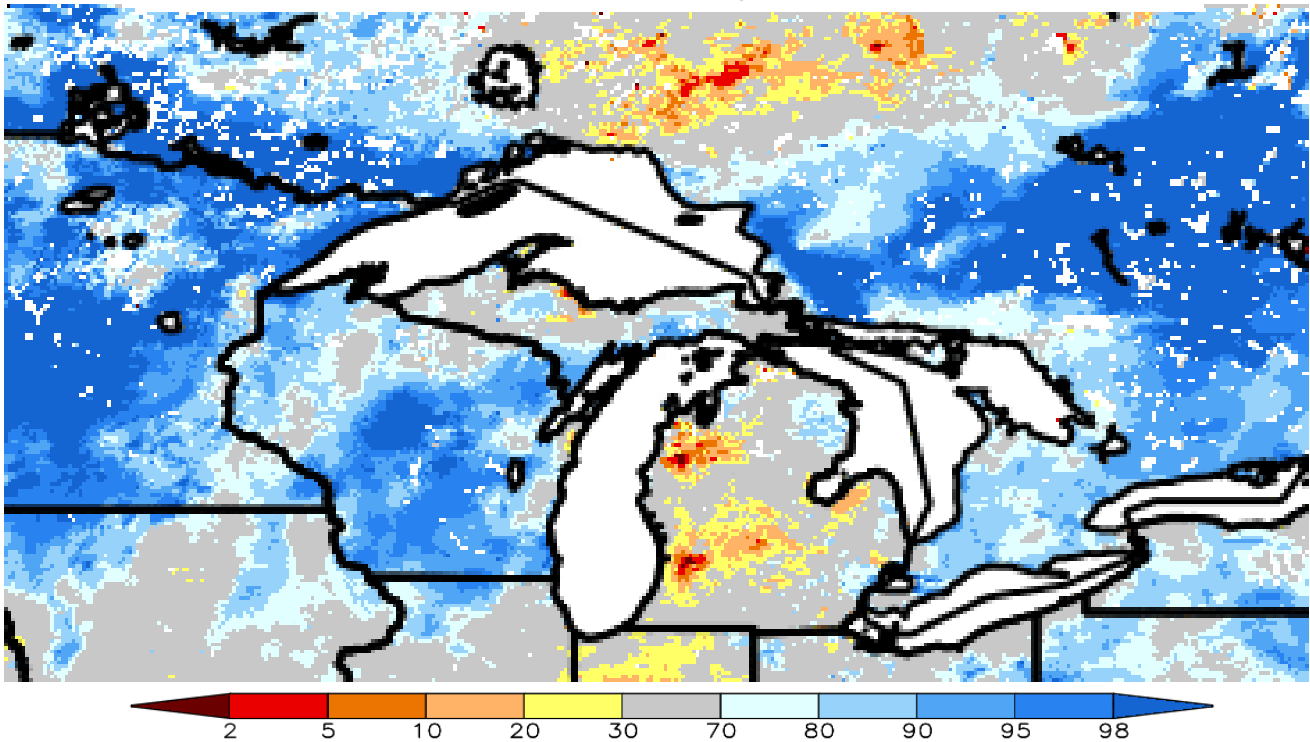
SPoRT-LIS 0-40 cm Soil Moisture percentile valid 01 Jun 2024



****NOTE****
****Experimental****

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

SPoRT-LIS 0-200 cm Soil Moisture percentile valid 01 Jun 2024



****NOTE****
****Experimental****

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