Monthly Hydrometeorological Report

Report for February 2025

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): **February 2025** DATE: **March 17th, 2025** SIGNATURE: **Daniel Jablonski, HPM** **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).	

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

Summary

Near to slightly below normal precipitation was observed across much of Upper Michigan in February with Munising observing above normal precipitation due to favorable lake effect snow patterns (Table 1). The dominant lake effect patterns also favored above normal precipitation in the Keweenaw (Figure 6). Winter overall was dominated by lake effect driven precipitation noted in below normal precipitation for most sites outside Munising, which observed its 4th wettest winter on record with 13.04" of liquid precipitation (Table 2). Average temperatures this winter were within a degree of normal across all of Upper Michigan (Table 3). SWE increased from January, but only near normal values were observed over much of the U.P. The south central continued to observe below normal SWE due to a lack of system snow and above normal SWE in an area between Munising and Newberry continued due to favored northwest lake effect snow (Figures 2 and 3).

Location	Precipitation	% of Normal Precip / Snow	Snowfall
WFO Marquette	2.06"	103% / 130%	41.9"
Marquette City	0.89"	55% / 87%	17.2"
Quincy Hill	2.76"	M	49.3"
Ironwood	1.28"	83% / 130%	31.4"
Iron Mountain	0.99"	90% / 111%	12.0"
Manistique	1.15"	98% / M	19.0"
Munising	3.26"	159% / 184%	49.0"
Stambaugh	0.83"	75% / 85%	9.8"

Table 1. Observed liquid equivalent precipitation, percent of normal, and snowfall at long-term climate sites across Upper Michigan for February 2025.

Winter (December – February) Precipitation Summary

Location	Precipitation	% of Normal Precip	Rank	Last Year
WFO Marquette (Records: 1962-2023)	5.74”	81%	45th Wettest	6.46”
Marquette City (Records: 1875-2023)	3.50”	65%	18th Driest	4.11”
Ironwood (Records: 1901-2023)	4.81”	85%	45th Driest	4.35”
Iron Mountain (Records: 1902-2023)	3.53”	89%	59th Wettest	2.43”
Manistique (Records: 1938-2023)	4.09”	85%	38th Wettest	3.27”
Munising (Records: 1912-2023)	13.04”	161%	4th Wettest	7.72”
Stambaugh (Records: 1900-2023)	2.69”	76%	30th Driest	2.01”

Table 2. Total observed precipitation at long-term climate sites across Upper Michigan for December, January, and February of the 2024-25 winter season.

Winter (December – February) Temperature Summary

Location	Avg Temp	Departure	Rank	Last Year
WFO Marquette (Records: 1962-2023)	17.1°F	+1°F	23rd Warmest	25.2°F
Marquette City (Records: 1875-2023)	21.4°F	+0.4°F	54th Warmest	28.8°F
Ironwood (Records: 1901-2023)	14.6°F	-0.1°F	58th Warmest	24.3°F
Iron Mountain (Records: 1902-2023)	17.8°F	+0.7°F	50th Warmest	26.7°F
Manistique (Records: 1938-2023)	20.9°F	+0.9°F	38th Warmest	26.6°F
Munising (Records: 1912-2023)	20.5°F	+0.7°F	39th Warmest	27.3°F
Stambaugh (Records: 1900-2023)	13.8°F	-0.7°F	68th Warmest	23.9°F

Table 3. Average temperature observed at long-term climate sites across Upper Michigan for December, January, and February of the 2024-25 winter season.

Flooding Conditions

There were no flooding concerns during the month of February.

Media Links

None.

River Conditions

Streamflow for most of western Upper Michigan was near normal with the exception of the Sturgeon River Basin which saw above normal streamflow in February. In the east, the Manistique River Basin observed below normal streamflow with much below normal streamflow in the Pine River Basin and low streamflow in the Chocolay and Pictured Rocks/Two-Hearted River Basins.

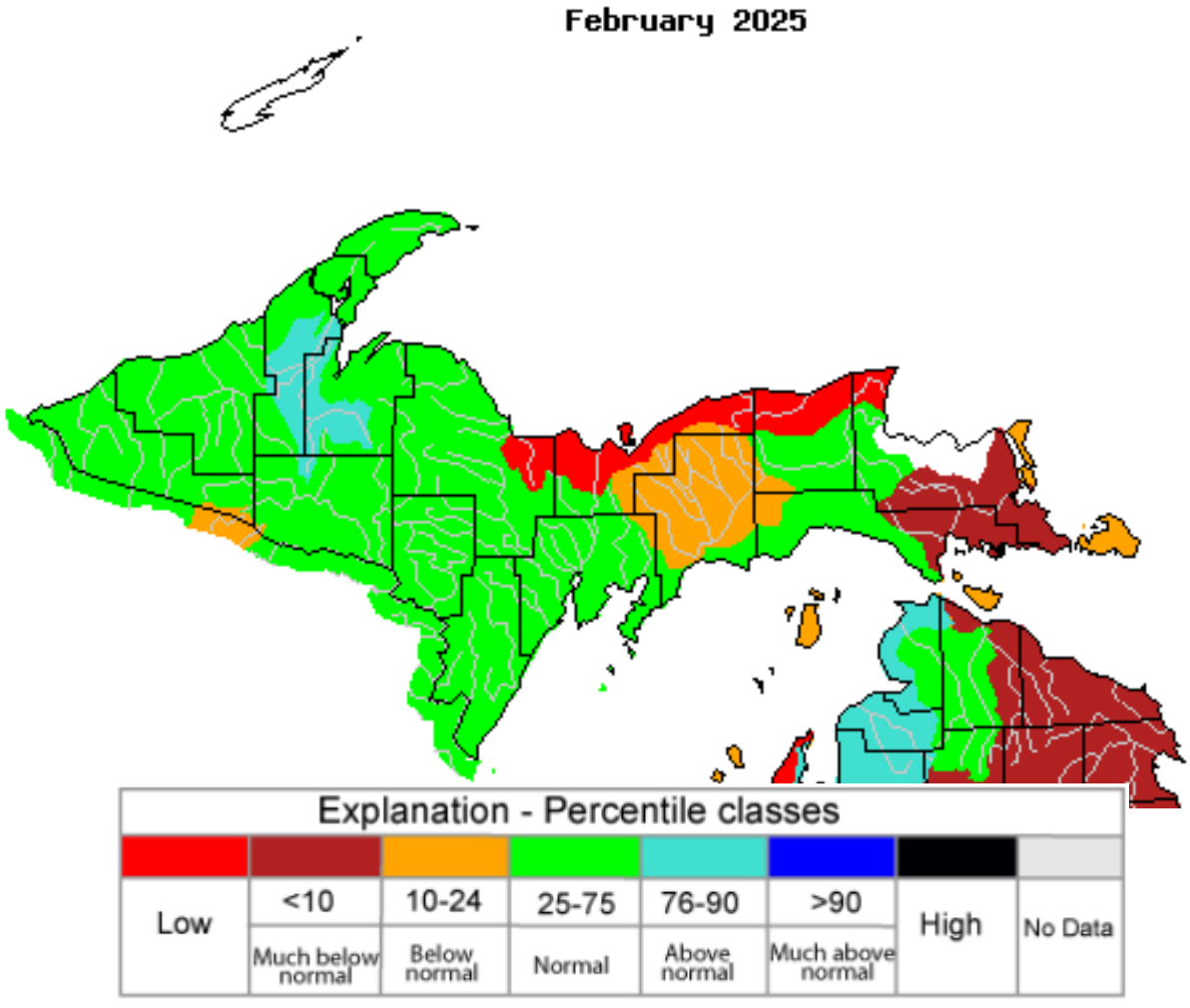

Figure 1: USGS monthly average streamflow in February 2025 across Upper Michigan.

Snowpack SWE (Snow Water Equivalent) Conditions

The highest SWE values were over northeastern Upper Michigan, particularly between Munising and Newberry where it was above normal in the Manistique River basin. Near normal SWE was observed in the Keweenaw and high terrain of western Upper Michigan. The south central Upper Peninsula continued to observe below normal SWE in February.

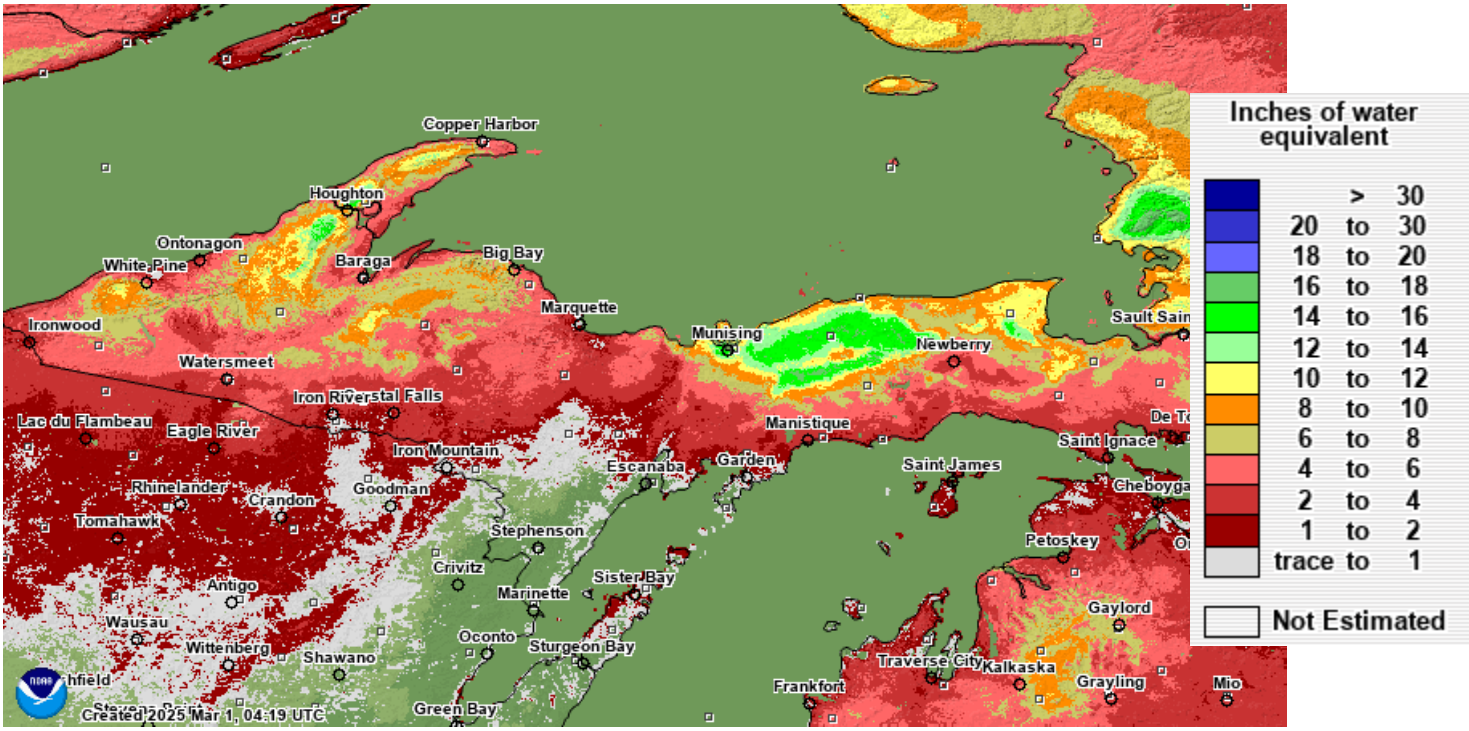

Figure 2: Current modeled snowpack snow water equivalent on March 1st.

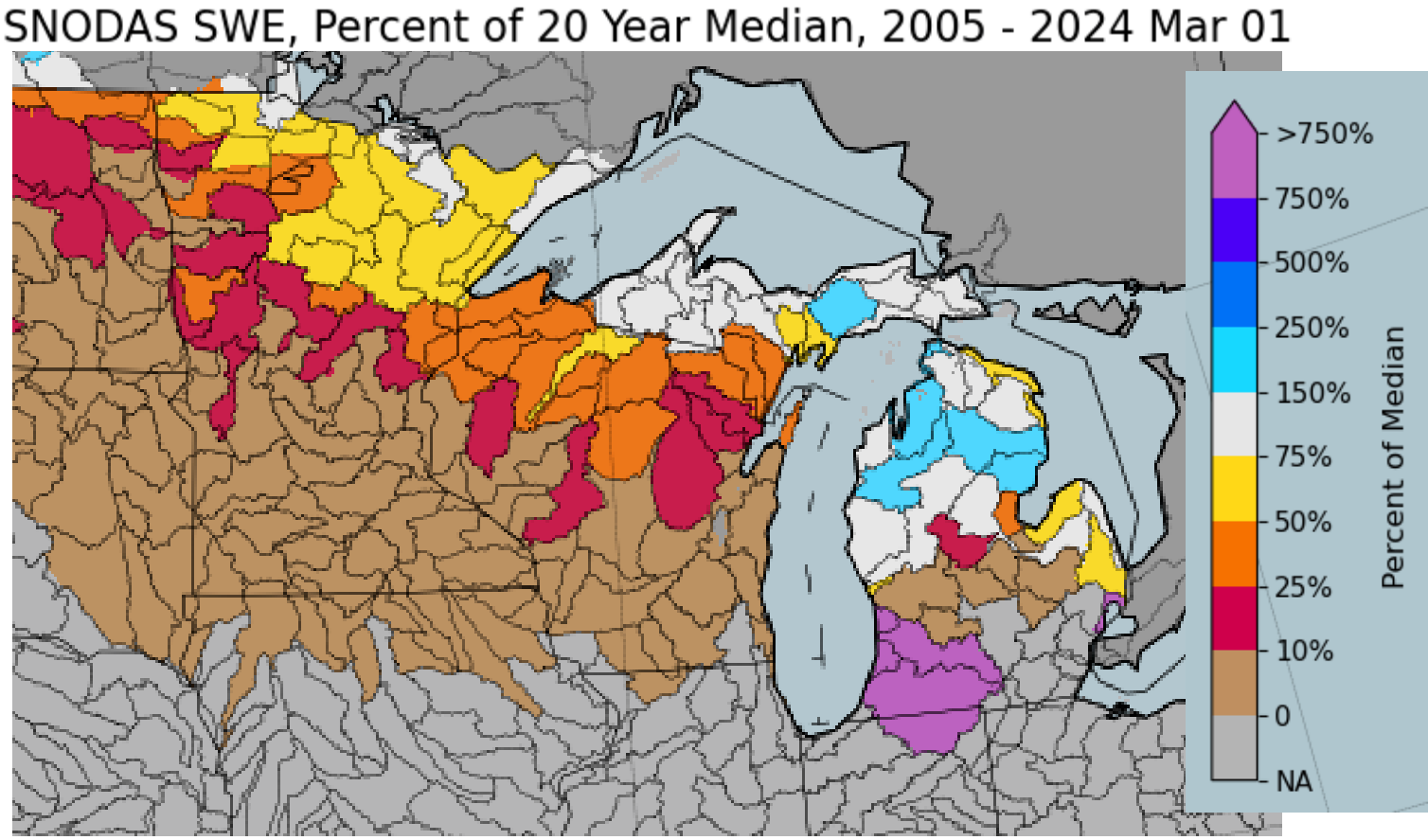

Figure 3: Modeled snow water equivalent for drainage basins on March 1st , 2025 as a percent of 20-year median.

Drought Discussion

Moderate drought conditions continue over interior western Upper Michigan, especially over Gogebic, Iron, and Dickinson counties. Abnormally dry conditions continue over the south central sections of the U.P. and from the Porcupine Mountains southeast through Iron County. For the latest drought status, please visit https://www.drought.gov

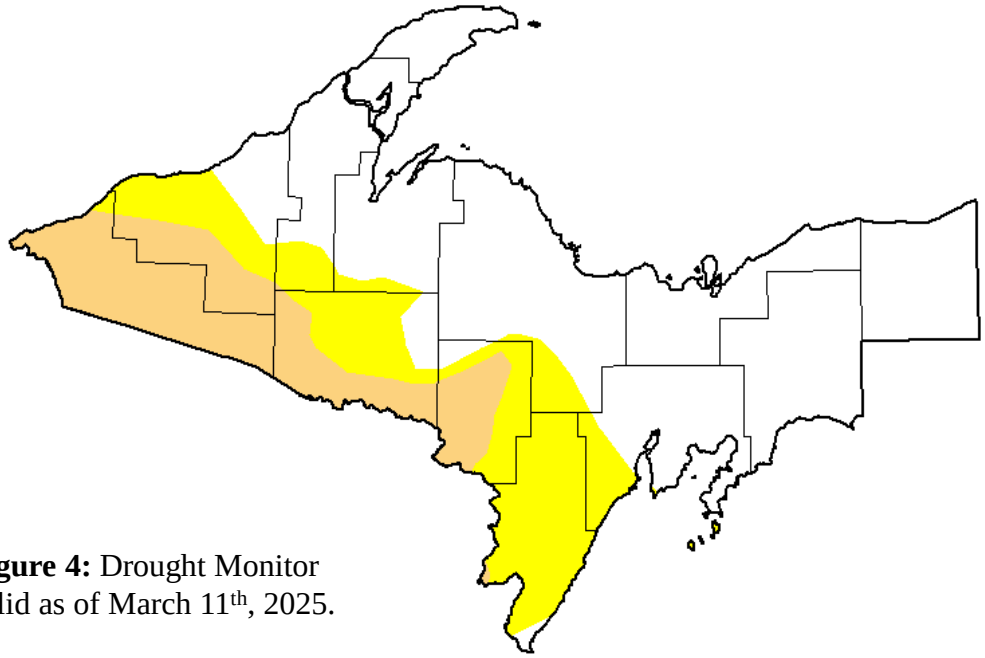

Figure 4: Drought Monitor valid as of March 11th, 2025.

March 11, 2025
(Released Thursday, Mar. 13, 2025)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	58.99	41.01	17.75	0.00	0.00	0.00
Last Week 03-04-2025	56.51	43.49	17.85	0.00	0.00	0.00
3 Months Ago 12-10-2024	22.13	77.87	22.12	0.00	0.00	0.00
Start of Calendar Year 01-07-2025	57.50	42.50	17.85	0.00	0.00	0.00
Start of Water Year 10-01-2024	1.50	98.50	64.78	40.63	0.00	0.00
One Year Ago 03-12-2024	0.00	100.00	87.64	14.60	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:
Richard Tinker
CPC/NOAA/NWS/NCEP

droughtmonitor.unl.edu

Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	3
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)	28

Precipitation Summary

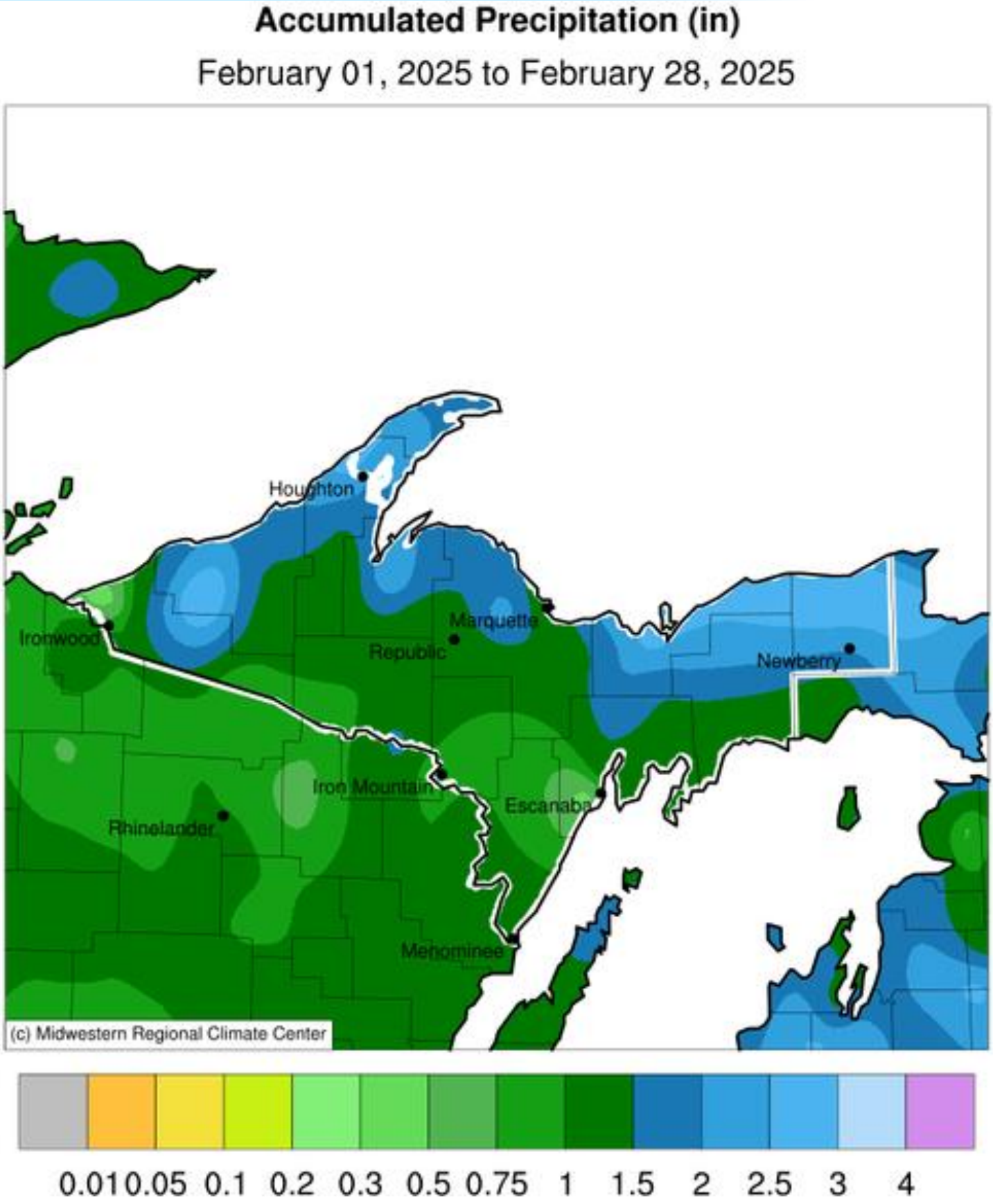

Figure 5: February 2025 Monthly Precipitation Totals. Image generated March 7th, 2025 from the Midwestern Regional Climate Center.

Precipitation Summary Continued

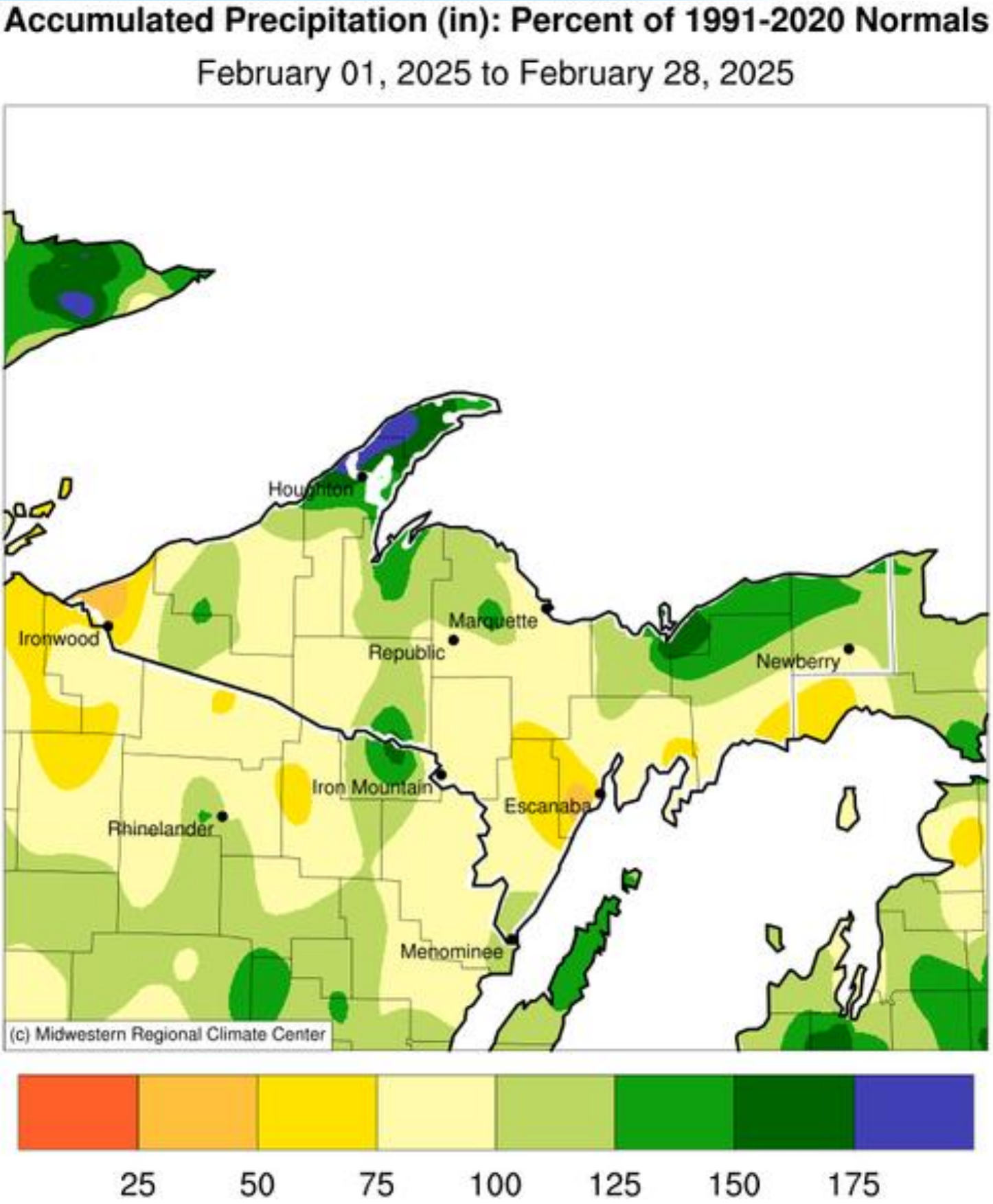

Figure 6: February 2025 Percent of Normal of Accumulated Precipitation. Image generated March 7th, 2025 from the Midwestern Regional Climate Center.

Soil Moisture Anomaly

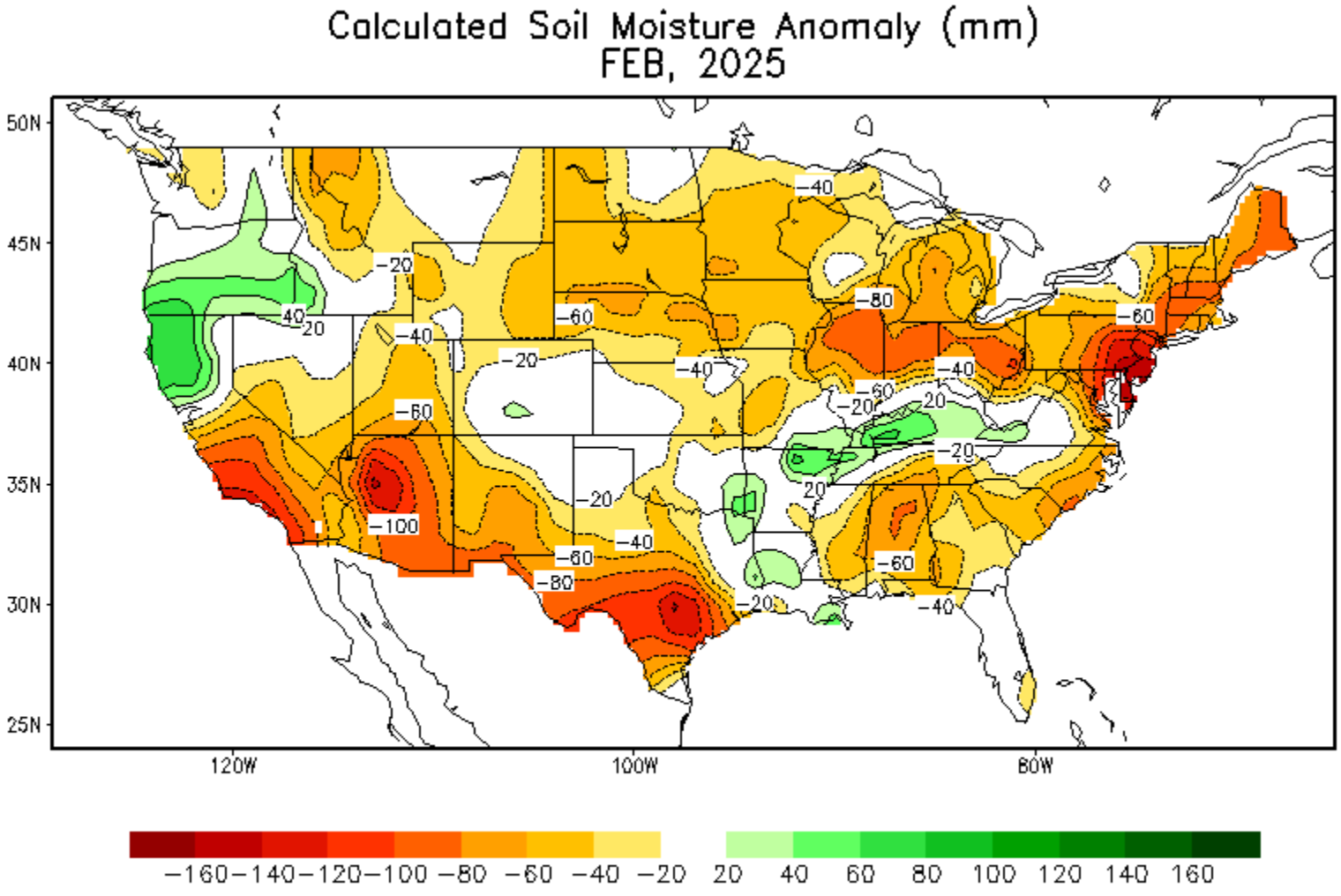

Figure 7: Climate Prediction Center's monthly average soil moisture anomaly for February 2025.

Shallow and Deep Soil Moisture Percentiles

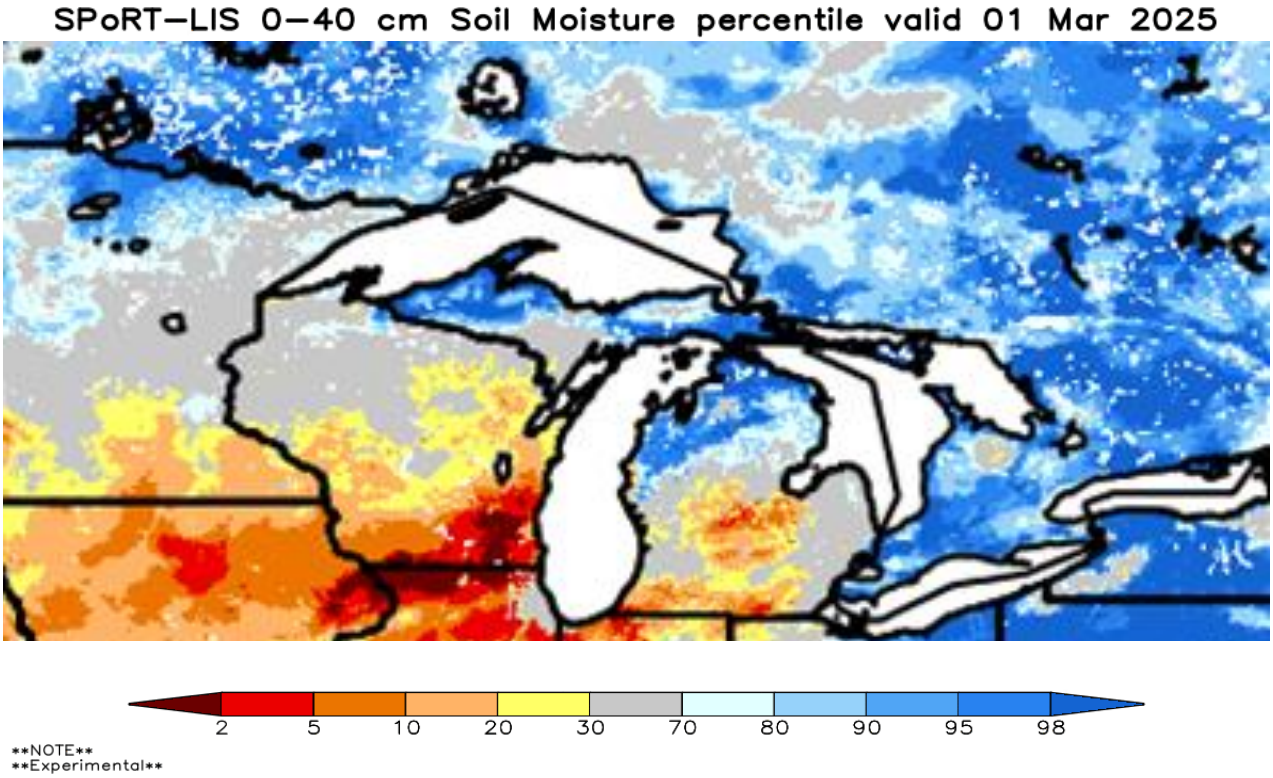

Figure 8: NASA's Short-term Prediction Research and Transition (SPoRT) Center's shallow (0-40 cm) soil moisture percentile valid March 1st, 2025.

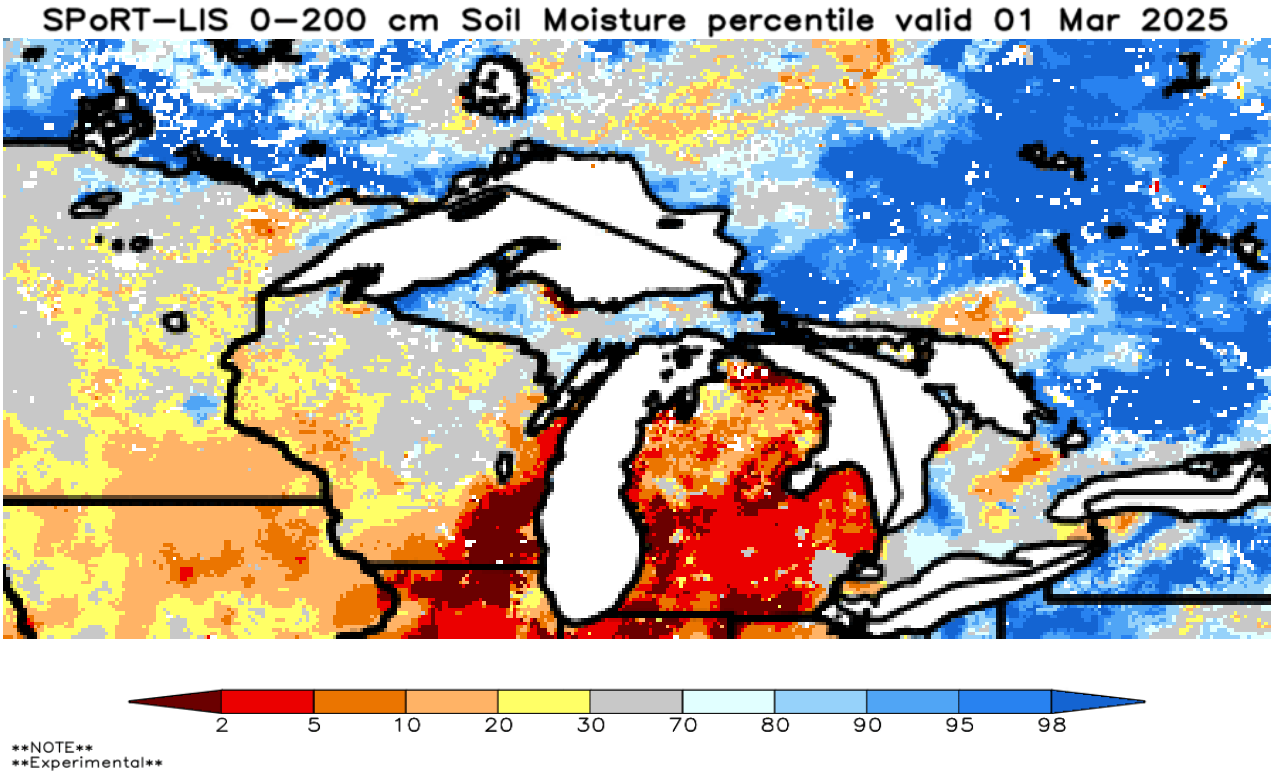

Figure 9: NASA's Short-term Prediction Research and Transition (SPoRT) Center's deep (0-200 cm) soil moisture percentile valid March 1st, 2025.