



Monthly Report of River and Flood Conditions

Report for July 2022

NWS FORM E-5	U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE	HSA OFFICE: Marquette, MI
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS		REPORT FOR (MONTH / YEAR): July 2022
TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910		DATE: August 15th, 2022
		SIGNATURE: Jordan Wendt, Hydro Program Manager Evan Kutta, Asst. Hydro Program Manager Robin J. Turner, 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

Precipitation was below normal during July except across far western Upper MI where Ironwood observed 123% of normal rainfall. Abnormally cool Lake Superior water temperatures forced strong lake breezes that kept our lakeshore observation sites relatively dry (60-70% of normal) with around 2 inches of rain. Munising was the exception where 2.86" of rain (89% of normal) fell during July, which was comparable to our interior observation site at Iron Mountain (3.14"; 88%).

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	1.99	67%	0
Marquette City	1.81	61%	0
Quincy Hill	2.19	M	0
Ironwood	4.85	123%	0
Iron Mountain	3.14	88%	0
Manistique	2.02	64%	0
Munising	2.86	89%	0
Stambaugh	2.71	71%	0

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



Flooding Conditions

There were no flooding events during the month of July.

River Conditions

Near normal streamflow prevailed across most of Upper Michigan during July. Isle Royale and the Escanaba and Sturgeon Rivers observed below normal streamflow during July.

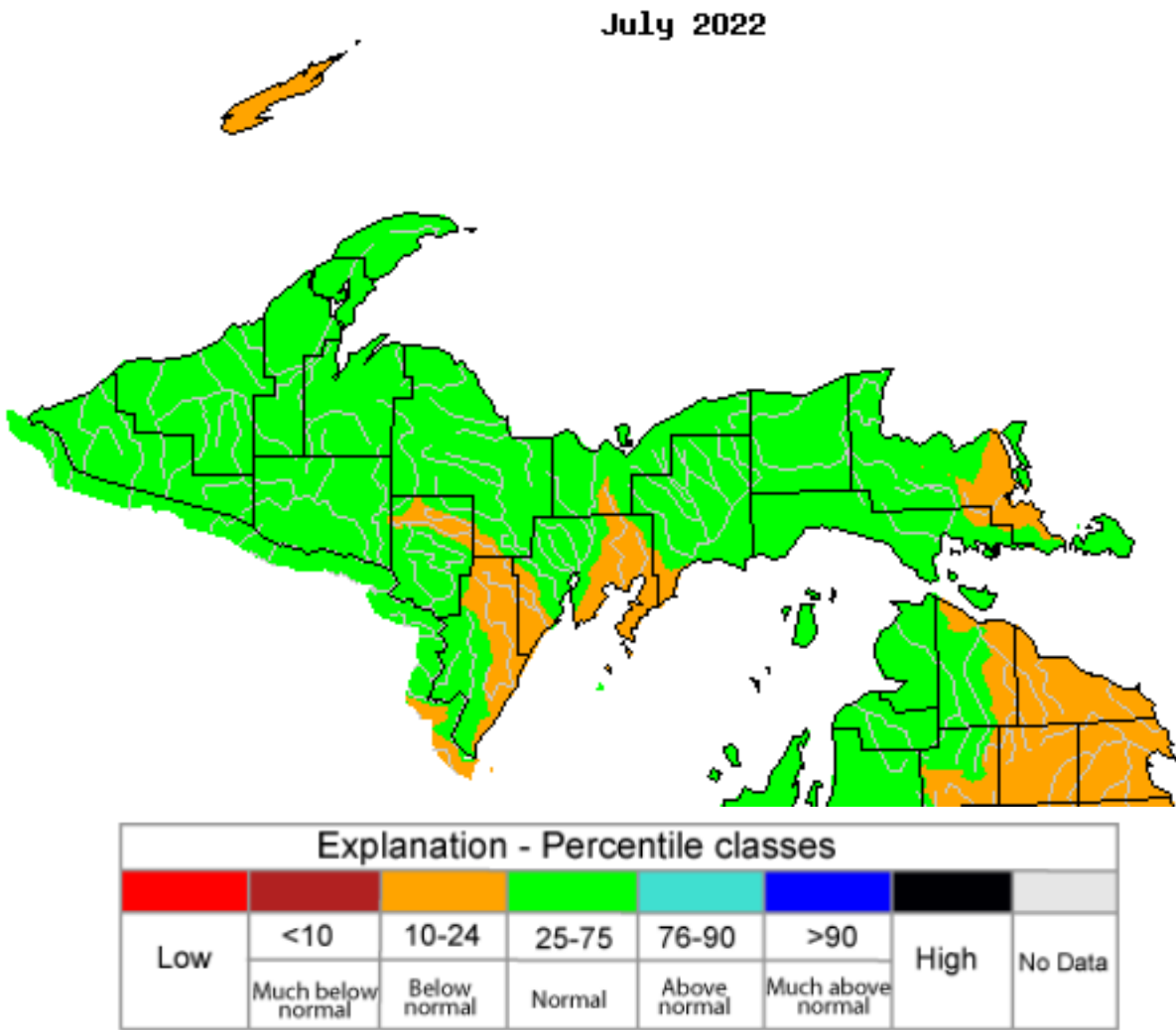


Figure 1: USGS monthly average streamflow in July 2022 across Upper Michigan.



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Report for July 2022

Snowpack SWE (Snow Water Equivalent) Conditions

Snowpack remains on summer vacation.

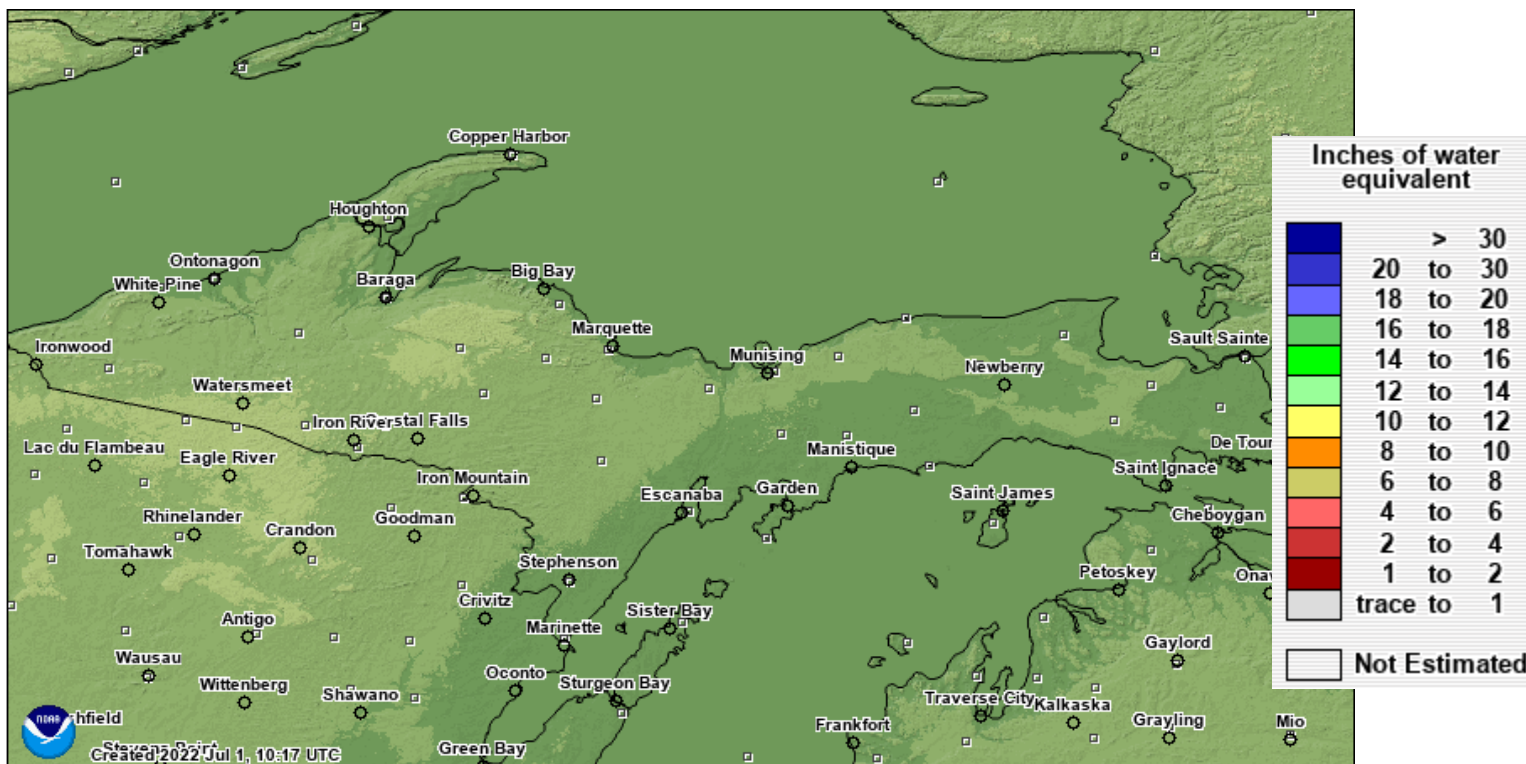


Figure 2: Current modeled snowpack snow water equivalent on August 1st, 2022.

Drought Discussion

Below normal precipitation and slightly warmer than normal temperatures allowed abnormally dry conditions to develop across south-central Upper Michigan and northern portions of our Keweenaw Peninsula. For the latest drought status, please visit <http://www.drought.gov>.

August 9, 2022

(Released Thursday, Aug. 11, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	86.80	13.20	0.00	0.00	0.00	0.00
Last Week 08-02-2022	76.46	23.54	0.01	0.00	0.00	0.00
3 Months Ago 05-10-2022	94.90	5.10	0.00	0.00	0.00	0.00
Start of Calendar Year 01-04-2022	26.00	74.00	35.44	0.51	0.00	0.00
Start of Water Year 09-28-2021	51.73	48.27	6.70	0.49	0.00	0.00
One Year Ago 08-10-2021	64.12	35.88	1.56	0.00	0.00	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate 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

Figure 3: Drought Monitor valid as of August 9th, 2022.



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Report for July 2022

Media Links

None.

Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	2
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
Daily River Forecasts (RVD)	31



Precipitation Summary

Accumulated Precipitation (in)
July 1, 2022 to July 31, 2022

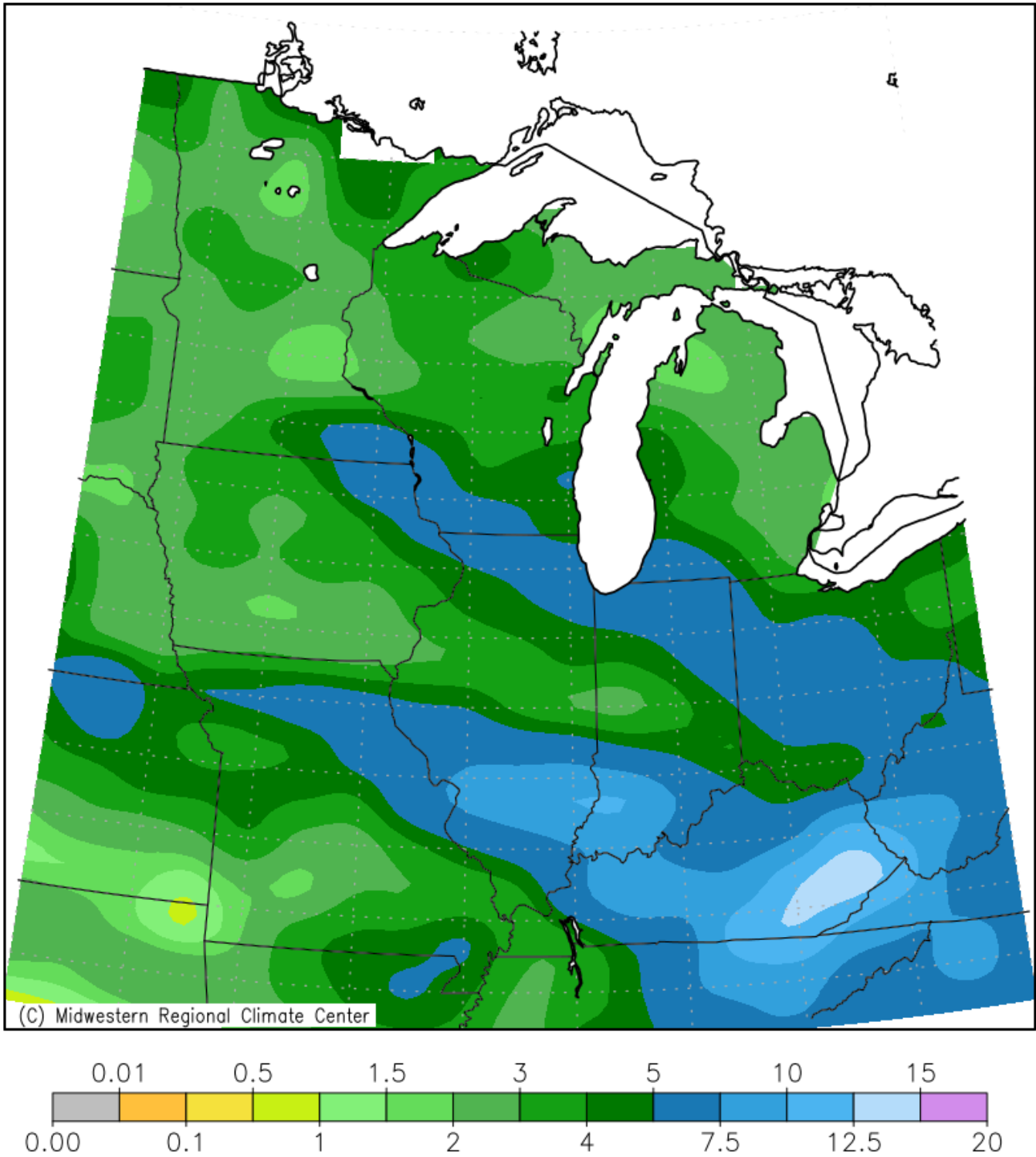
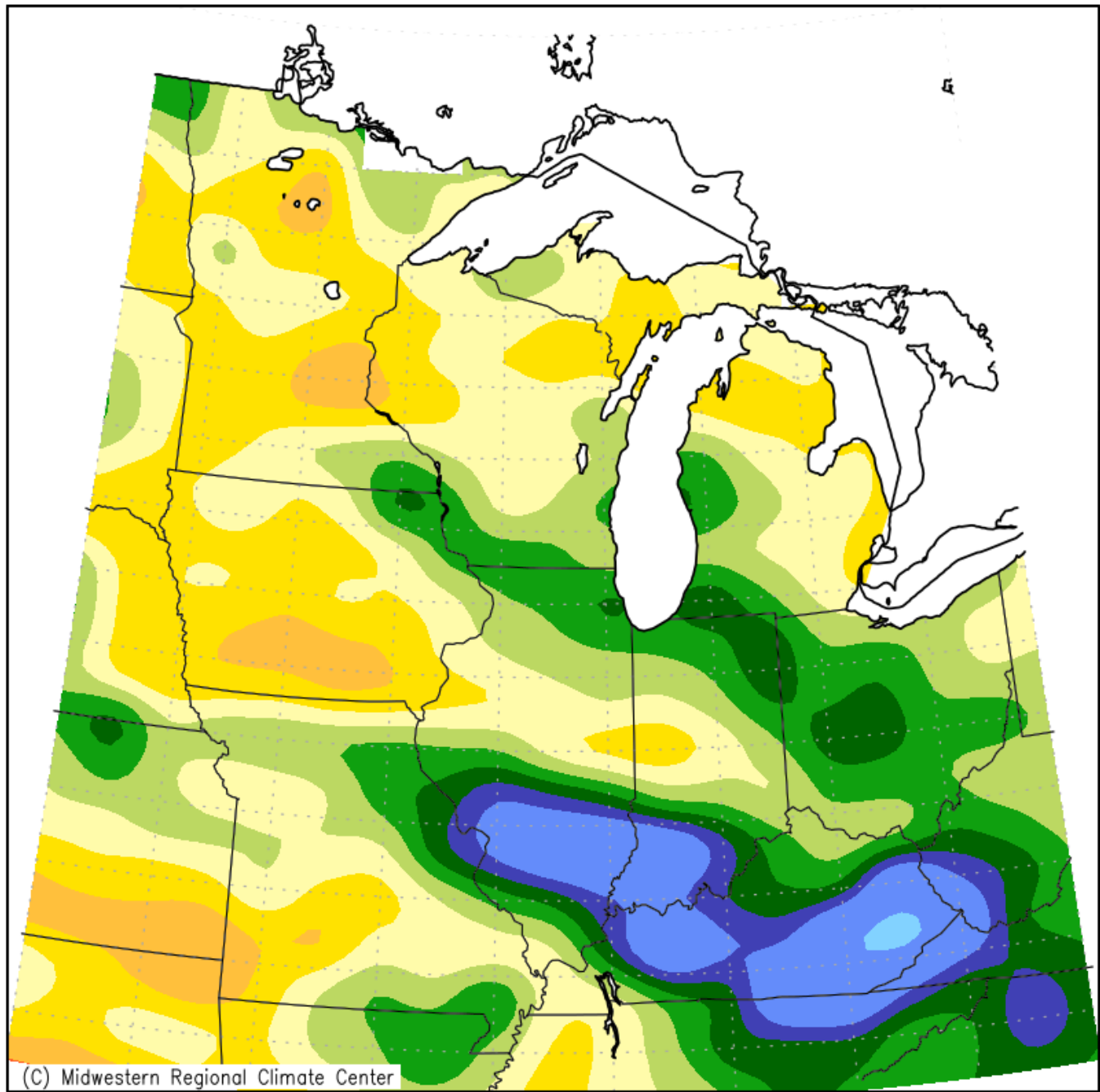


Figure 4: July 2022 Monthly Precipitation Totals.



Precipitation Summary Continued

Accumulated Precipitation: Percent of Mean
July 1, 2022 to July 31, 2022



Mean period is 1991–2020.

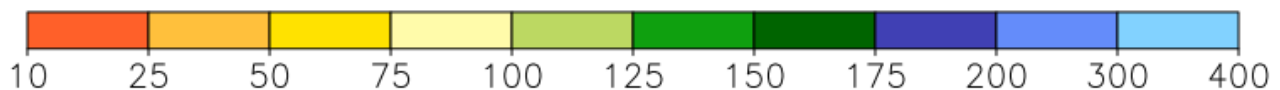


Figure 5: July 2022 Percent of Normal of Accumulated Precipitation.



Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)
JUL, 2022

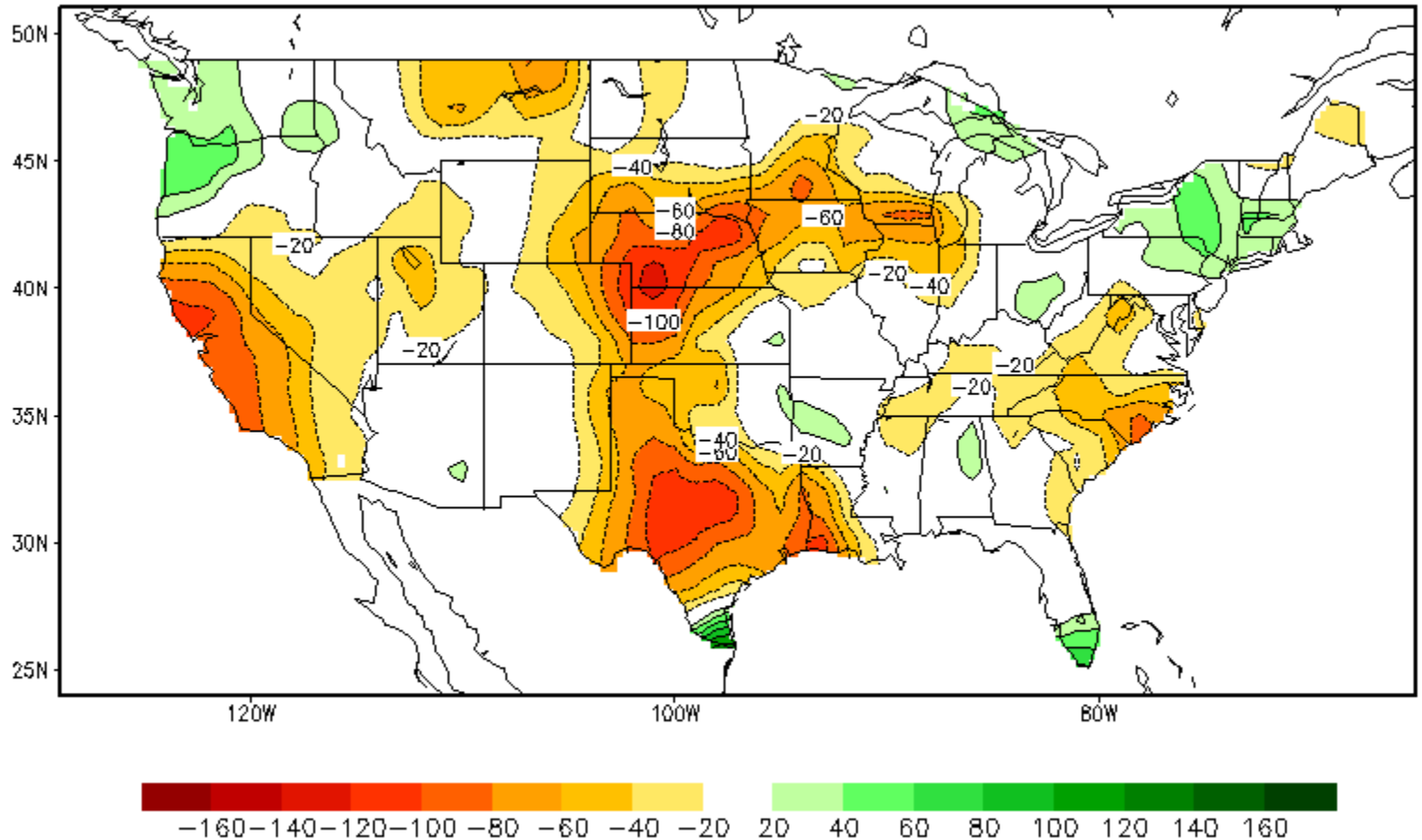
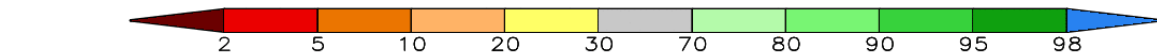
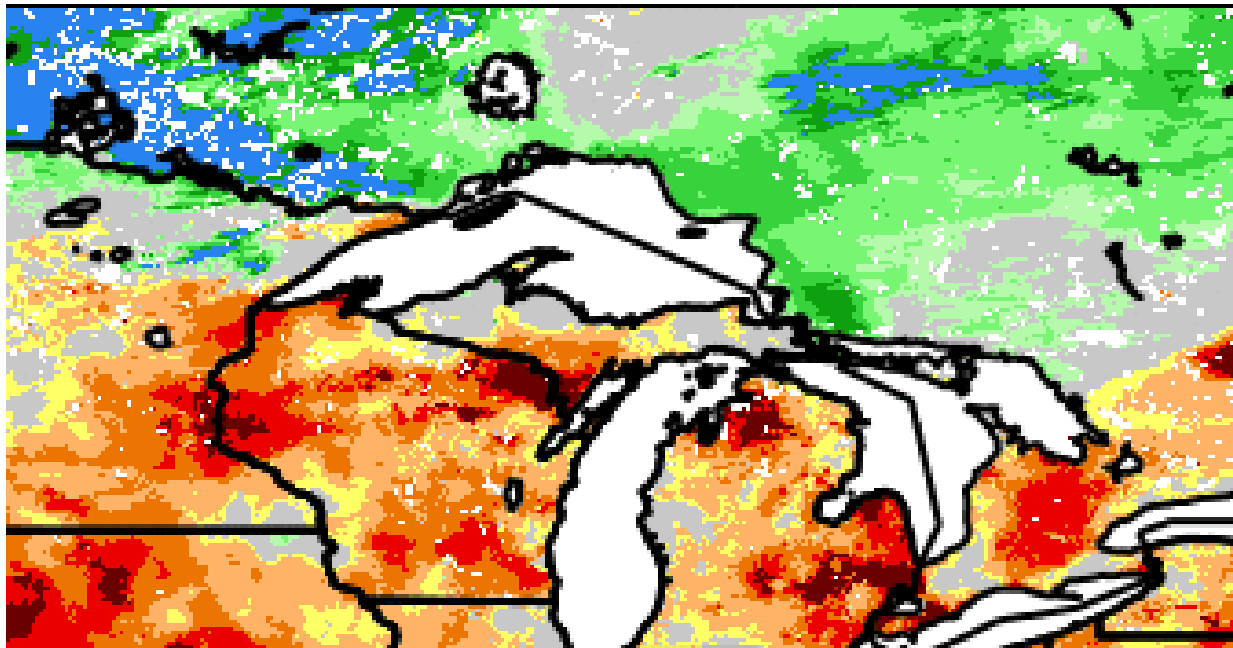


Figure 6: Climate Prediction Center's monthly average soil moisture anomaly for July 2022.



Deep and Shallow Soil Moisture Anomalies

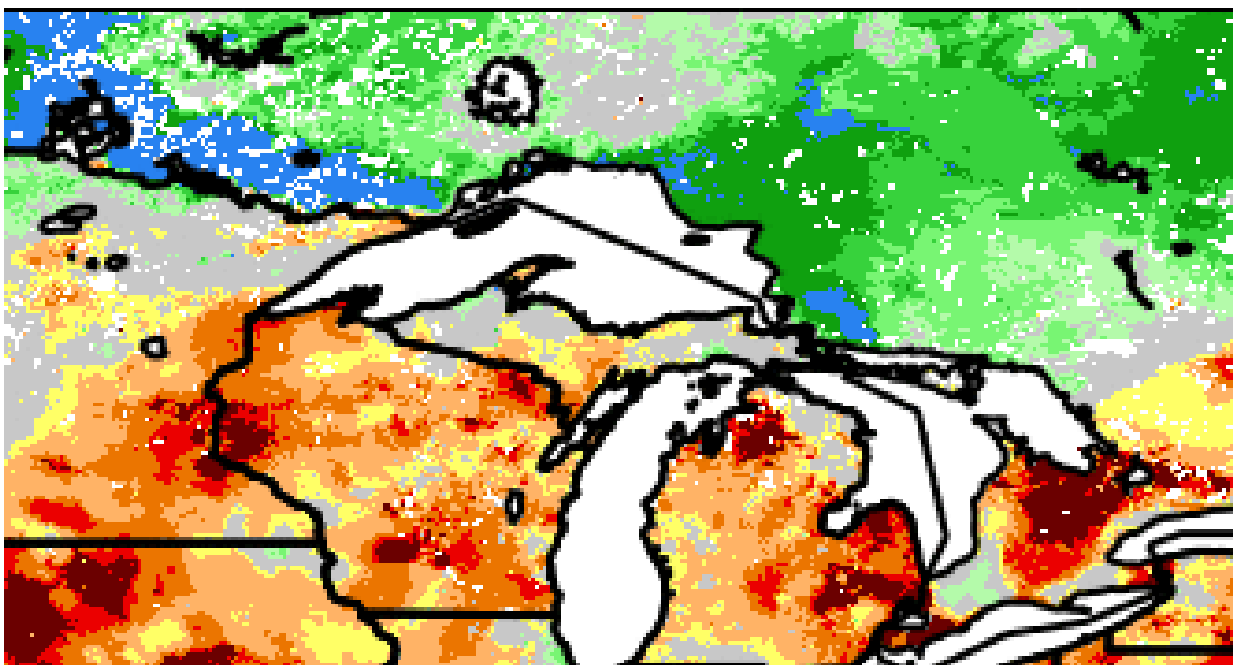
SPoRT-LIS 0-40 cm Soil Moisture percentile valid 01 Aug 2022



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

Figure 7: NASA Short-term Prediction Research and Transition (SPoRT) Center's shallow (0-40 cm) soil moisture percentile valid August 1, 2022.

SPoRT-LIS 0-200 cm Soil Moisture percentile valid 01 Aug 2022



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

Figure 8: NASA Short-term Prediction Research and Transition (SPoRT) Center's deep (0-200 cm) soil moisture percentile valid August 1, 2022.