



Monthly Report of River and Flood Conditions

Report for June 2023

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): June 2023
TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910		DATE: July 13th, 2023
		SIGNATURE: Evan Kutta, 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).		



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

Summary

Rainfall was near- to much below-normal across Upper Michigan during June. The first three weeks of June were unusually hot and dry and locations that missed out on rainfall from a storm system on June 13-14 ended up with rainfall less than 80% of long term averages for the month. After a dry end to May, many of the aforementioned locations experienced below to much below-normal streamflow (Figure 1) earning many of them a D0 or D1 classification on the United States Drought Monitor product (Figure 4). Fortunately, a cooler and wetter pattern returned for the final week of June, but it was too little too late to recover from earlier precipitation deficits except at WFO Marquette. At our weather forecast office, June was the ninth consecutive month with above normal precipitation and this year’s January-June period was the wettest on record (1959 – present) with 25.81 inches observed. The top four wettest Jan-Jun periods have all occurred this century with three of those periods (1st, 3rd, and 4th) occurring over the past five years (2019-2023).

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	3.86"	118%	0.0"
Marquette City	2.65"	87%	0.0"
Quincy Hill	2.44"	M	0.0"
Ironwood	2.82"	72%	0.0"
Iron Mountain	0.91"	25%	0.0"
Manistique	1.10"	34%	0.0"
Munising	2.60"	80%	0.0"
Stambaugh	2.02"	51%	0.0"

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



Flooding Conditions

There were no flooding concerns during the month of June.

Media Links

None.

River Conditions

Near to much below normal streamflow was observed during June 2023. The Montreal, Paint, Escanaba, Manistique, Carp, and Pine River basins had near-normal streamflow during June. On the other hand, the Ontonagon, Presque Isle, Black, Chocolay, Au Train, Ford, Cedar, Tahquamenon, and Two Hearted River basins were among those that had much below normal streamflow during June.

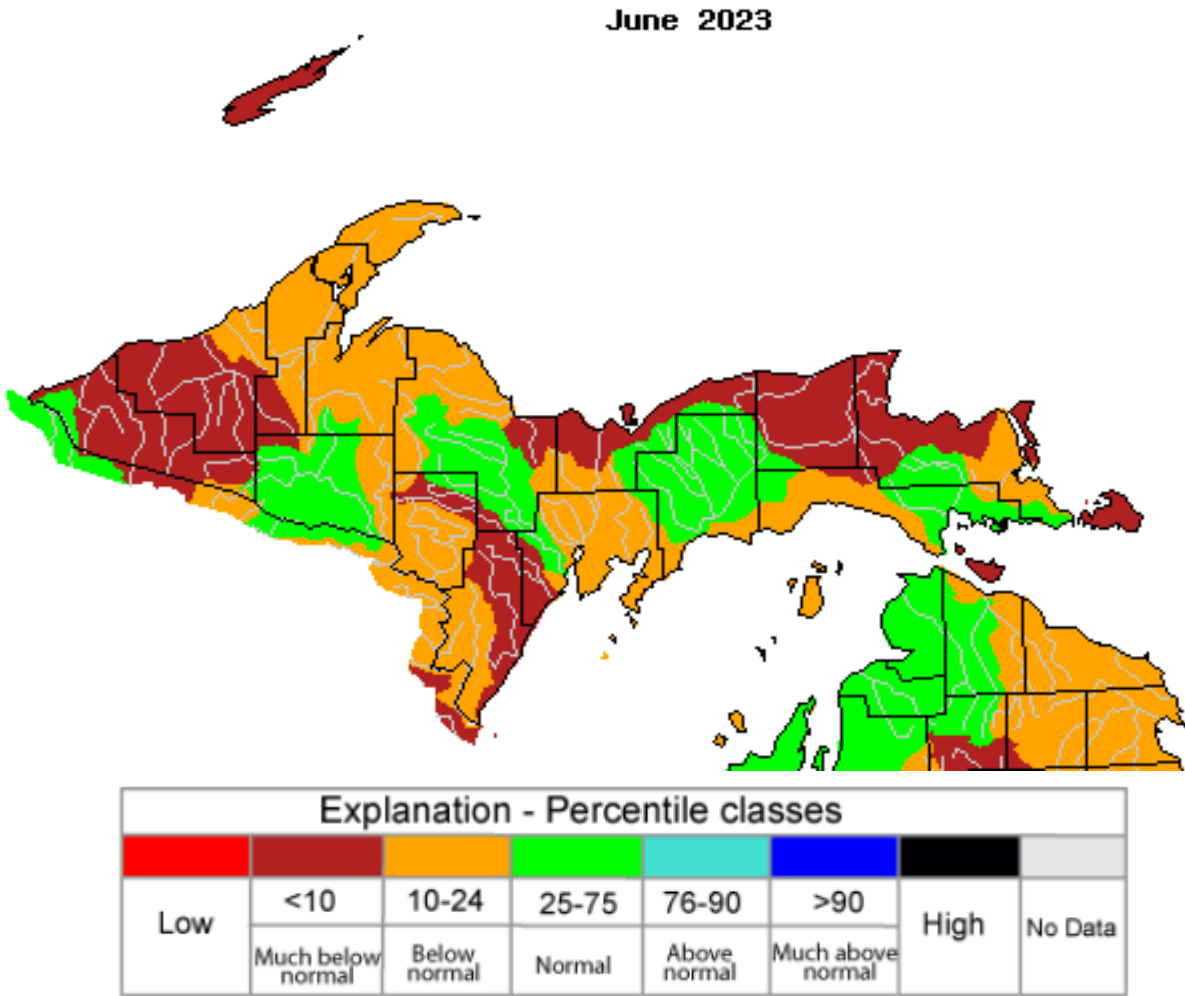


Figure 1: USGS monthly average streamflow in June 2023 across Upper Michigan



Snowpack SWE (Snow Water Equivalent) Conditions

On summer vacation!

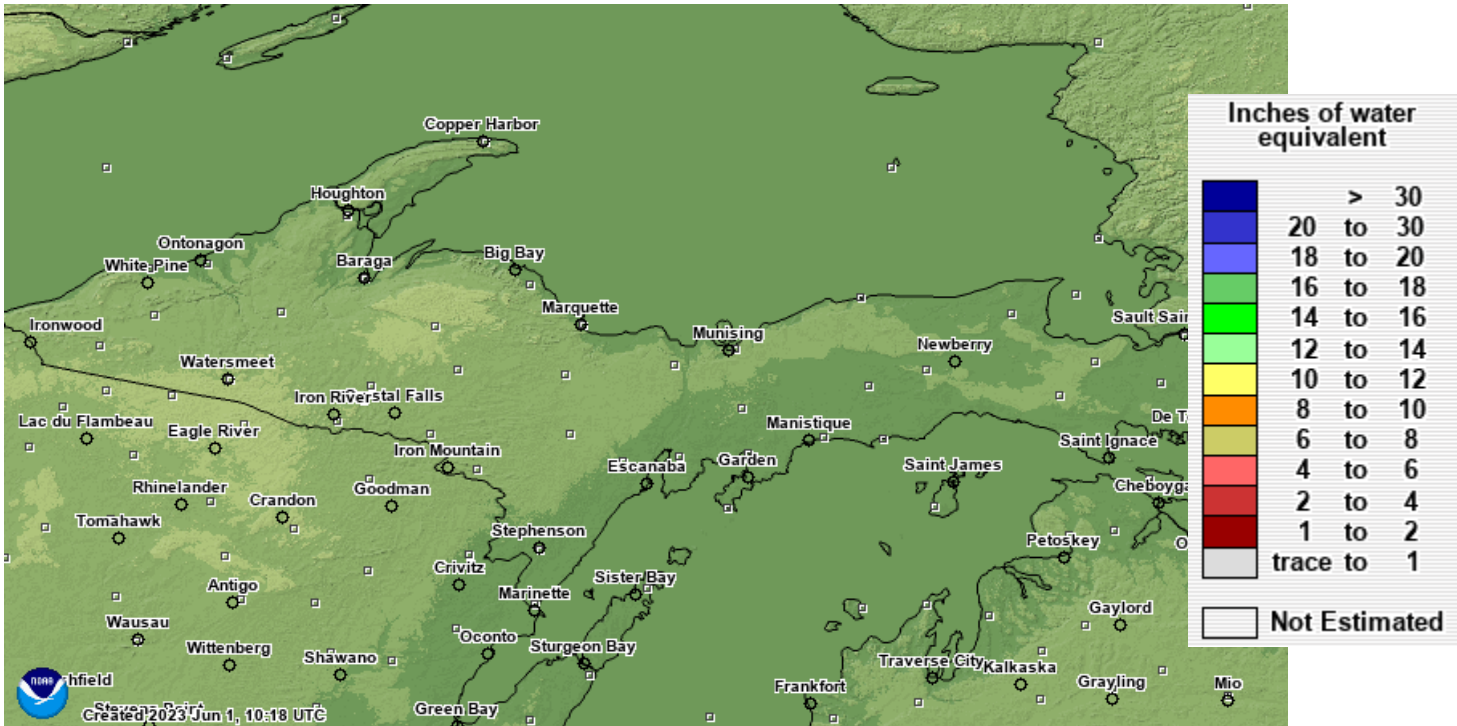


Figure 2: Current modeled snowpack snow water equivalent on June 1st.

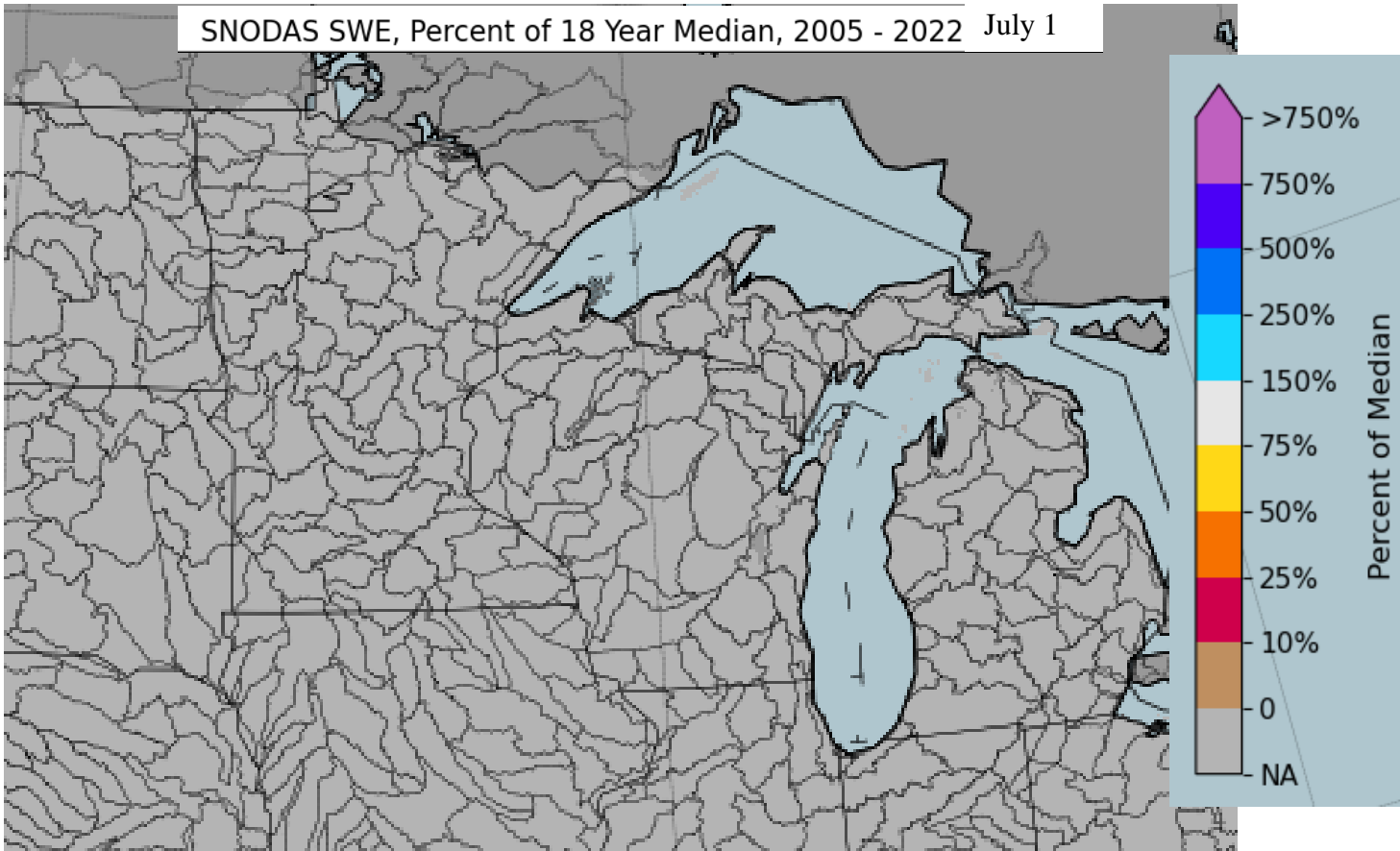


Figure 3: Modeled snow water equivalent for drainage basins on May 26th as a percent of 18-year median.



Drought Discussion

Moderate drought was present across southern portions of Upper Michigan and abnormally dry conditions were present across roughly the western third of Upper Michigan during June. For the latest drought status, please visit <http://www.drought.gov>.

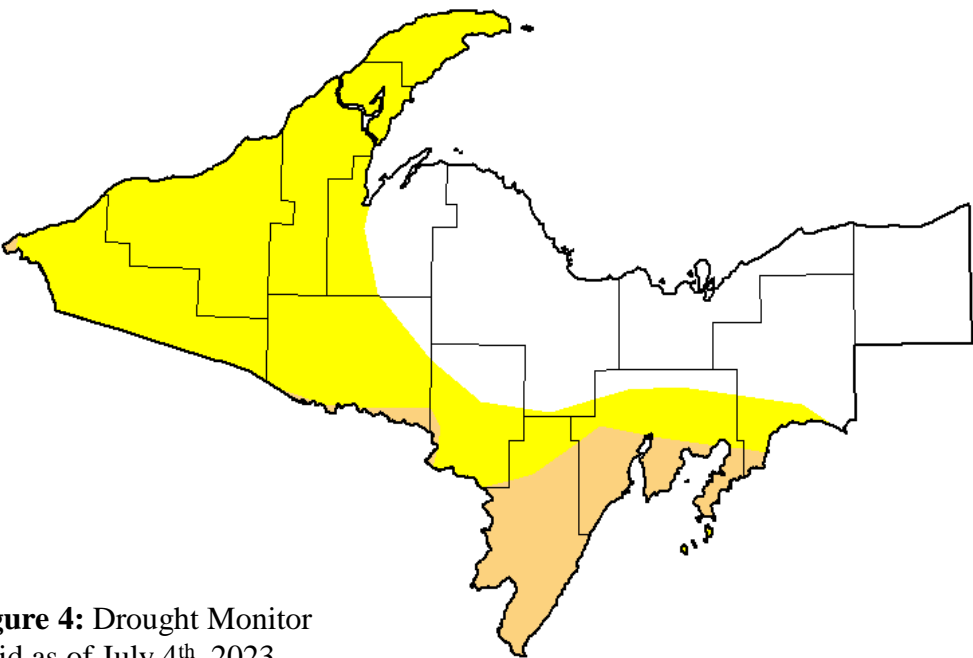


Figure 4: Drought Monitor valid as of July 4th, 2023.

July 4, 2023
(Released Thursday, Jul. 6, 2023)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.65	58.35	10.77	0.00	0.00	0.00
Last Week 06-27-2023	46.59	53.41	0.72	0.00	0.00	0.00
3 Months Ago 04-04-2023	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-03-2023	93.80	6.20	0.00	0.00	0.00	0.00
Start of Water Year 09-27-2022	88.48	11.52	1.94	0.00	0.00	0.00
One Year Ago 07-05-2022	95.60	4.40	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>

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 Continued

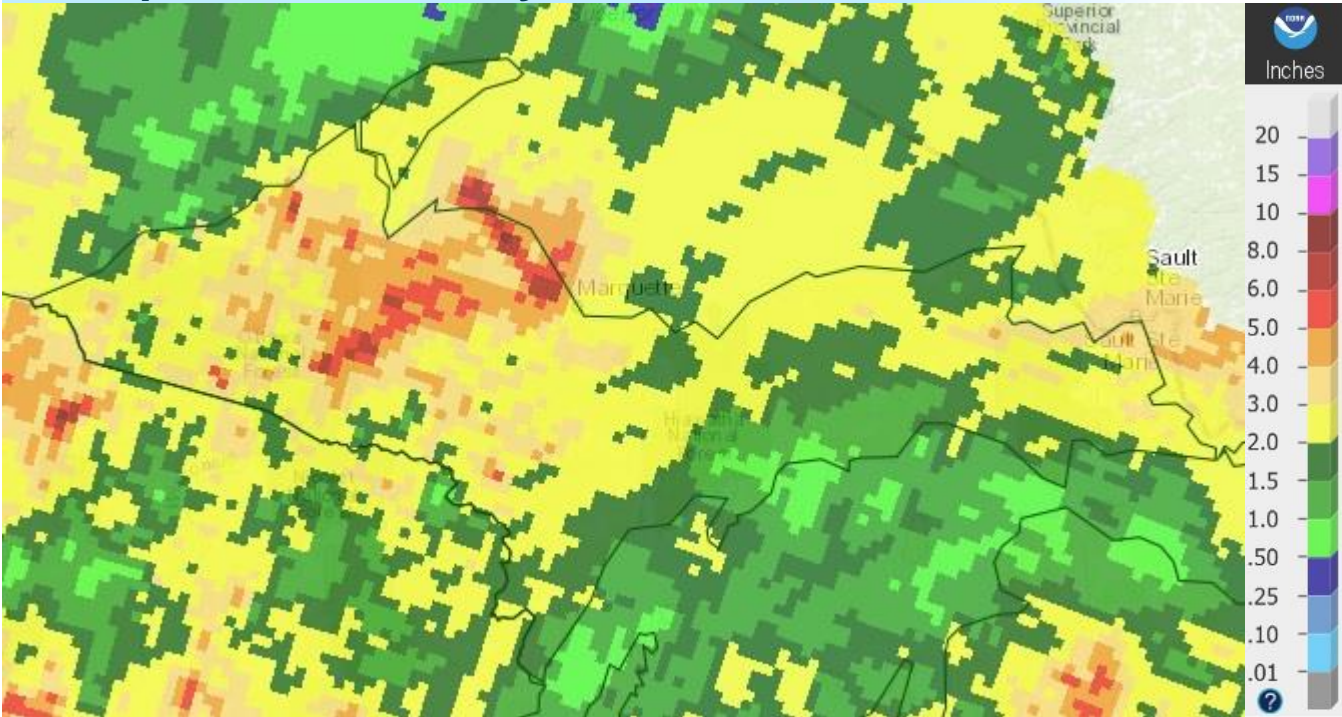


Figure 5: June 2023 Monthly Precipitation Totals.

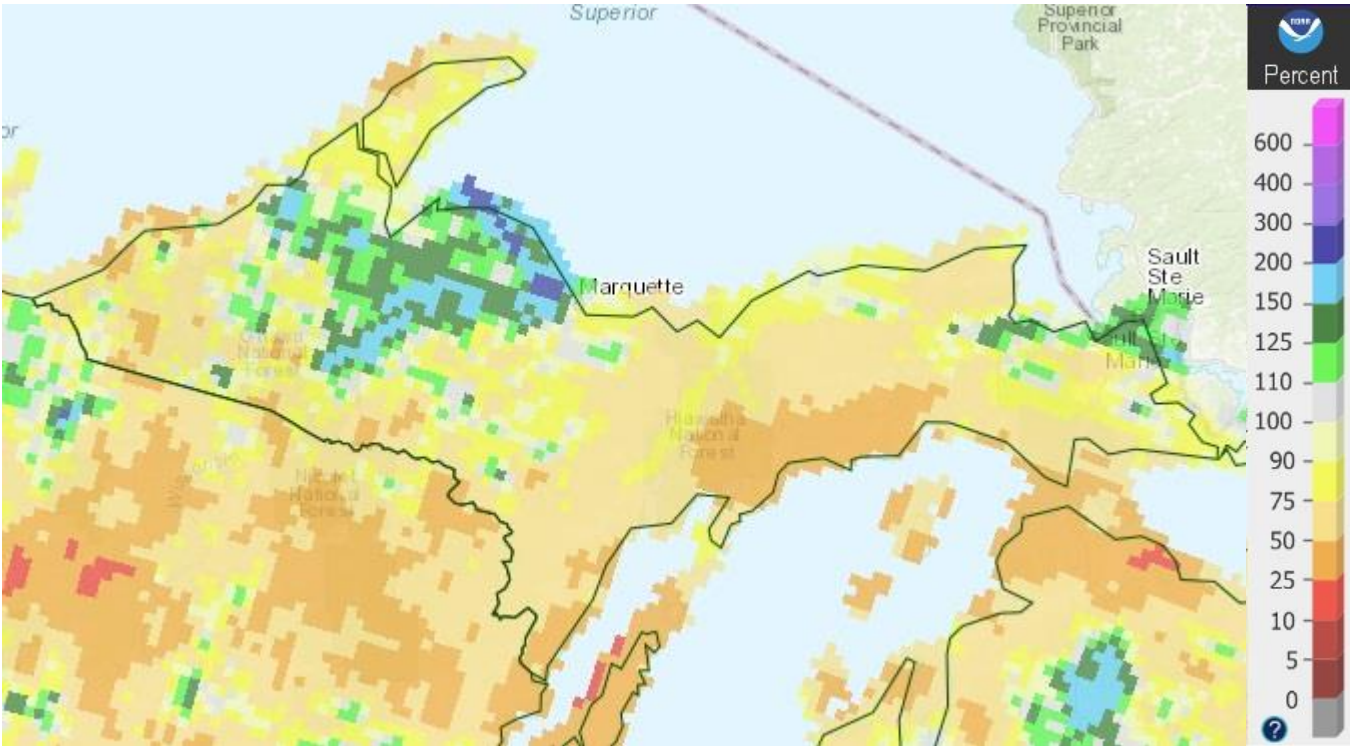


Figure 6: June 2023 Percent of Normal of Accumulated Precipitation.



Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)
JUN, 2023

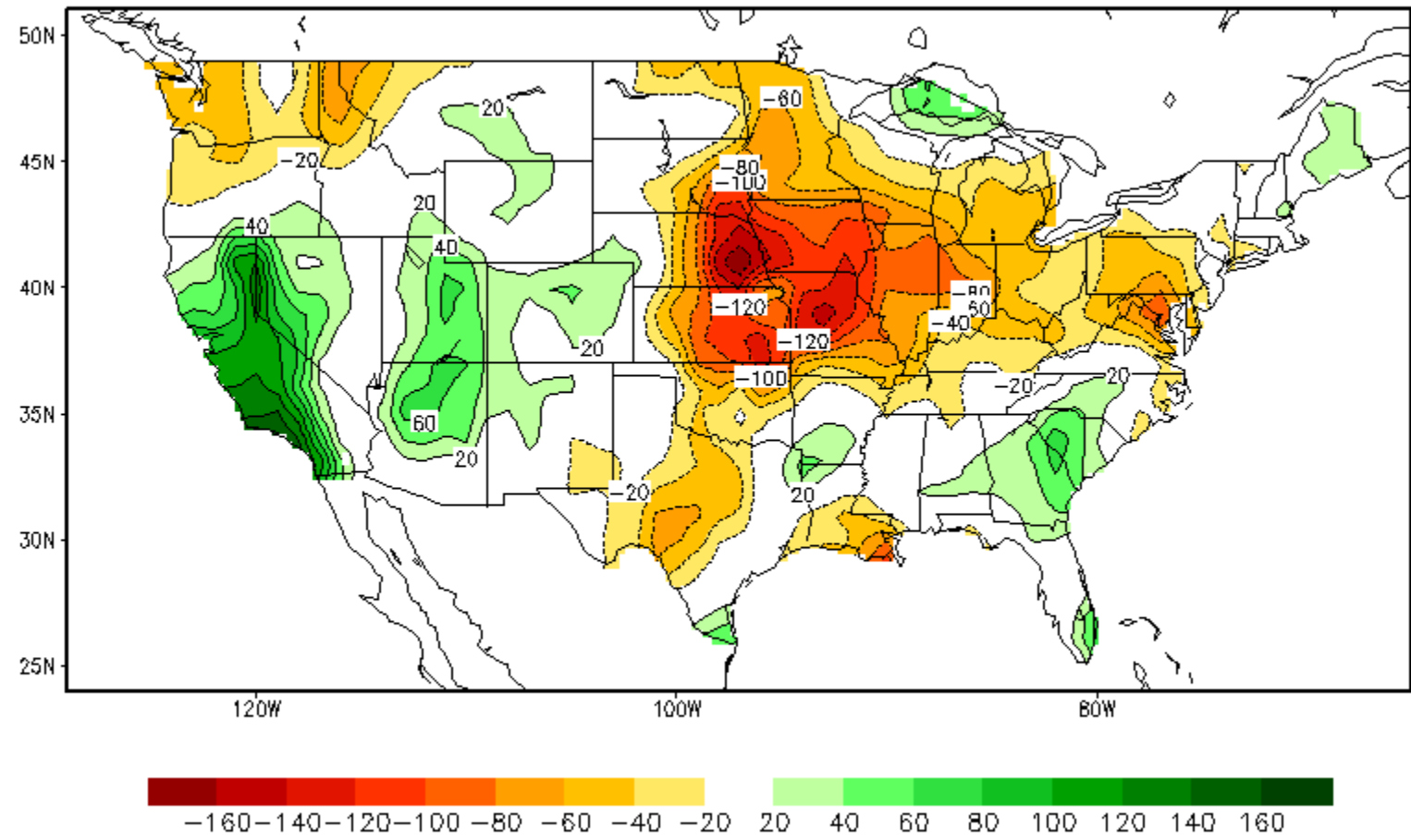


Figure 7: Climate Prediction Center’s monthly average soil moisture anomaly for June 2023.