

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 2024		
TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910		DATE: July 9th, 2024		
		SIGNATURE:		
		Matt Zika, WCM		
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

Well above normal precipitation was observed across Upper Michigan this past June. After a roughly 9-month dry spell, June was the 4th month in a row with above normal precipitation across Upper Michigan (Table 1). In fact, most of Upper Michigan experienced well above normal precipitation amounts as indicated across the board and showcased in the graphics. A large portion of the U.P. tallied over 150% of normal precipitation for the month. Portions of the Copper Country and areas of the northern U.P. east of Munising were particularly wet; especially in Ontonagon County where 8.00 to over 9.00 inches of rainfall accumulated. Munising ended up with 202% of their normal precipitation (Table 1). Year to date , Iron Mountain and Munising remain ranked in the top 5 wettest. Despite June temperatures being at or slightly below normal, YTD temperature departures of 2.5°F to 4.8°F are in the top 10 warmest for nearly all of Upper Michigan (Table 3). Above normal stream flow is indicated for the Copper Country and sections of the south-central U.P. that drain into the Bay of Green Bay (Figure 1). Well above-normal rainfall wiped the slate clean of any lingering drought conditions across the far western sections of the U.P. (Figure 4). Calculated soil moisture anomalies for the whole month were well above normal for the east half of the U.P. (Figure 7). Satellite observations from July 1st noted near to above-normal shallow and deep soil moisture over the west half inland from Lake Superior, with the east half showcasing well above normal soil moistures. (Figures 8 and 9).

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	5.30"	162%	0.0"
Marquette City	4.58"	150%	0.0"
Quincy Hill	6.79"	М	0.0"
Ironwood	6.65"	170%	0.0"
Iron Mountain	5.68"	153%	0.0"
Manistique	4.96"	154%	0.0"
Munising	6.54"	202%	0.0"
Stambaugh	5.89"	147%	0.0"

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

<u>NOTE</u>: 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 NWS Cooperative Observers.



Year-to-Date Precipitation Summary

Location	Precipitation	% of Normal	Rank	Last Year
WFO Marquette (Records: 1962-2023)	20.23"	118%	15 th wettest	25.81"
Marquette City (Records: 1875-2023)	14.16"	102%	73 rd wettest	18.08"
Ironwood (Records: 1901-2023)	18.17"	114%	35 th wettest	22.03"
Iron Mountain (Records: 1902-2023)	18.90"	142%	4 th wettest	13.72"
Manistique (Records: 1938-2023)	17.93"	135%	6 th wettest	14.19"
Munising (Records: 1912-2023)	23.54"	146%	5 th wettest	23.35"
Stambaugh (Records: 1900-2023)	16.64"	124%	25 th wettest	13.71"

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

Year-to-Date Temperature Summary

Location.	Avg Temp	Departure	Rank	Last Year
WFO Marquette (Records: 1962-2023)	38.3F	+4.6F	4th warmest	36.5F
Marquette City (Records: 1875-2023)	39.8F	+3.7F	9th warmest	37.4F
Ironwood (Records: 1901-2023)	37.8F	+3.4F	6 th warmest	36.0F
Iron Mountain (Records: 1902-2023)	41.0F	+4.8F	4 th warmest	38.9F
Manistique (Records: 1938-2023)	37.5F	+2.5F	12 th warmest	36.7F
Munising (Records: 1912-2023)	38.8F	+3.9F	4 th warmest	36.8F
Stambaugh (Records: 1900-2023)	37.2F	+3.4F	9 th warmest	35.0F

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



Flooding Conditions

Flood advisories were issued for portions of the north-central U.P. on the 17th prompting manual river observations on the Chocolay River in Marquette County. The Chocolay River remained below action stage after two back to back heavy rain events over the river basin. Areal Flood Advisories and a Flash Flood Warning were issued for portions of Baraga, Houghton, Ontonagon and northwestern Marquette County after midnight and into the early morning hours of June, 19th. The NWS COOP Observer at Greenland 6N remarked that the Firesteel River Bridge in Ontonagon County was overtopped by river water twice during the month of June. The Ontonagon River experienced two rapid rises of 7.5 to nearly 7.8 feet at Rockland on the 19th and 23rd in response to heavy rainfall events over the west half. The Sturgeon River also responded with releases from the Prickett Dam on the 19th and 23rd, and remained below action stage on both dates at Alston. Manual observations were subsequently taken at Chassell, but the river remained below action stage.

Media Links

https://wzmq19.com/news/333788/national-weather-service-warns-possible-ponding-and-washouts-on-up-roads/

River Conditions

[Basin streamflow relative to normal]



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



Snowpack SWE (Snow Water Equivalent) Conditions

Snowpack is on summer vacation!



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



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



Monthly Hydrometeorological Report Report for June 2024

Drought Discussion

For the latest drought status, please visit <u>http://www.drought.gov</u>.



valid as of July 3, 2024.

Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	01
Flood Watch (FFA)	00
Flood Warning (FLW)	00
Flood Advisories and Statements (FLS)	02
Flash Flood Warning (FFW)	03
Flash Flood Statement (FFS)	04
Hydrologic Summary (RVA)	30

July 2, 2024 (Released Wednesday, Jul. 3, 2024) Valid 8 a.m. EDT

Drought Conditions (Percent Area)							
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	
Current	100.00	0.00	0.00	0.00	0.00	0.00	
Last Week 06-25-2024	100.00	0.00	0.00	0.00	0.00	0.00	
3 Month s Ago 04-02-2024	0.00	100.00	65.90	13.00	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 07-04-2023	41.65	58.35	10.77	0.00	0.00	0.00	

ntensity:	
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:
Adam Hartman
NOAA/NWS/NCEP/CPC
```



droughtmonitor.unl.edu



Precipitation Summary





Precipitation Summary Continued





Report for June 2024

Soil Moisture Anomaly



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



Monthly Hydrometeorological Report

Report for June 2024

Shallow and Deep Soil Moisture Percentiles SPoRT-LIS 0-40 cm Soil Moisture percentile valid 01 Jul 2024



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



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



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

