

NWS FORM E-5		U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE	HSA OFFICE: Marquette, MI	
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS		RIVER AND FLOOD CONDITIONS	REPORT FOR (MONTH / YEAR): October 2024	
TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910		R SERVICE (W/OH12x1) OGICAL INFO CENTER GHWAY, RM 7116 9 20910	DATE: November 8th, 2024 SIGNATURE: James S. Salzwedel, OPL Ryan Metzger, MIC	
Whe	n no flooding occurs i	nclude miscellaneous river conditions, such a	significant rises record low stages ice	

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

Rainfall was well below-normal again for most of Upper Michigan during October with the outlier over the far western end of the U.P. at Ironwood. Monthly rainfall values at the climate stations ranged from just over an inch at Manistique to nearly four and a half inches at Ironwood (Table 1) in the far western U.P.

The NWS Cooperative station at Rapid River 4SSE south of Garth Point on the Stonington Peninsula did not even record an inch of precipitation for the month of October at 0.95" inches. Downtown Newberry did not do much better with only an inch of precipitation. Tinder dry conditions were overall experienced for most of the U.P. (Figure 6). Manistique and Munising only received about a third of their normal precipitation for the month (Table 1). Multiple wildfires broke out in October. A prolonged wildfire even broke out in the remote McCormick Wilderness Tract of the Ottawa National Forest in northwestern Marquette County during the month of October.

October temperatures also continued the trend of extreme warmth. The monthly average temperatures at WFO Marquette in Negaunee Township and down at the lakeshore in the City of Marquette topped out at 5.4°F and 6.2°F degrees above normal for the month (Table 1). Each of the climate stations were warmer than normal for the second month in a row. WFO Marquette recorded their 6th warmest October on record while the lakeshore in Marquette observed their 7th warmest October on record (Table 1).

The U.S. Drought Monitor graphic depicts moderate to severe drought conditions across much of Upper Michigan. Even with above normal precipitation over the far western sections of the U.P. in October; severe drought prevails from the Porcupine Mountains and Ironwood east along the Wisconsin line across most of Iron County. Abnormally dry conditions persist over much of the northwest quarter of the U.P. from Keweenaw Bay to northern Houghton County (Figure 4). Streamflow was below normal or much below normal during October across much of Upper Michigan, with low flows from the Stonington Peninsula eastward to St. Ignace (Figure 1). Normal flows were observed from just inland from Lake Superior along the Chocolay Basin eastward to Whitefish point.

For the year-to-date, climate observation sites all managed to range in excess of 90% percent of normal precipitation with Munising and the City of Marquette ranking as the 24th wettest January through October time frame on record (Table 4). Even with above normal rainfall in October, Ironwood has received the lowest percent of normal precipitation (91%) since the new year as compared to the other climate stations.

For the year-to-date, temperatures were significantly warmer than last year and were between 1.5°F and 4.1°F above normal across Upper Michigan with WFO Marquette ranking as the warmest January through October time period on record (Table 5). For the second month in a row both Iron Mountain and Munising both placed in the top five as they recorded their 2nd warmest January to October time period (Table 5).



(October) Precipitation Summary

Location	Precipitation	% of Normal	Average Temperature	Departure from Normal
WFO Marquette	3.39"	86%	49.0°F / 6th Warmest on Record	+5.4°F
Marquette City	1.38"	46%	53.9°F / 7th Warmest on Record	+6.2°F
Quincy Hill	2.41"	М	М	М
Ironwood	4.44"	135%	49.2°F	+4.0°F
Iron Mountain	1.95"	75%	50.0°F	+3.9°F
Manistique	1.09"	36%	50.4°F / 11th Warmest on Record	+3.9°F
Munising	1.29"	33%	50.8°F / 11 th Warmest on Record	+4.5°F
Stambaugh	2.22"	83%	45.7°F	+1.8°F

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

<u>NOTE</u>: Precipitation after 8 AM EST September 30th was counted in October 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)	30.91"	99%	30 th wettest	40.93"
Marquette City (Records: 1875-2023)	24.98"	96%	24 th wettest	30.07"
Ironwood (Records: 1901-2023)	28.01"	91%	81 st wettest	34.84"
Iron Mountain (Records: 1902-2023)	24.54"	94%	64 th wettest	27.10"
Manistique (Records: 1938-2023)	25.24"	97%	29 th wettest	26.12"
Munising (Records: 1912-2023)	33.77"	113%	24 th wettest	35.37"
Stambaugh (Records: 1900-2023)	25.60"	95%	68 th wettest	25.55"

Table 4. Total observed precipitation at long-term climate sites across Upper Michigan for January throughOctober 2024.

Year-to-Date Temperature Summary

Location.	Avg Temp	Departure	Rank	Last Year
WFO Marquette (Records: 1962-2023)	47.1F	+4.0F	1 st place warmest (Tied with 2012)	45.3F
Marquette City (Records: 1875-2023)	49.2F	+3.6F	6 th warmest	46.5F
Ironwood (Records: 1901-2023)	46.9F	+2.9F	8 th warmest	45.0F
Iron Mountain (Records: 1902-2023)	49.7F	+4.1F	2 nd warmest	47.5F
Manistique (Records: 1938-2023)	46.0F	+1.5F	19 th warmest	45.0F
Munising (Records: 1912-2023)	47.5F	+3.2F	2 nd warmest	45.5F
Stambaugh (Records: 1900-2023)	45.2F	+2.2F	12 th warmest	43.5F

Table 5. Average temperature observed at long-term climate sites across Upper Michigan for January throughOctober 2024.



Report for October 2024

Flooding Conditions

No river flooding concerns during the month of October 2024.

Media Links

River Conditions



	Explanation - Percentile classes							
ſ	Low	<10	10-24	25-75	76-90	>90	High	No Data
	Low	Much below normal	Below normal	Normal	Above normal	Much above normal		

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



Report for October 2024

Snowpack SWE (Snow Water Equivalent) Conditions

Snowpack was very short lived at the onset of November.



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

SNODAS SWE, Percent of 20 Year Median, 2004-2024 Oct 03



Figure 3: Modeled snow water equivalent for drainage basins on October 3rd, 2024 as a percent of 20-year median.



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Drought Conditions (Percent Area)

U.S. Drought Monitor Marquette, MI WFO

November 5, 2024

(Released Thursday, Nov. 7, 2024) Valid 7 a.m. EST



	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	89.00	18.81	0.00	0.00
Last Week 10-29-2024	0.00	100.00	89.01	72.30	0.00	0.00
3 Month s Ago 08-06-2024	77.76	22.24	0.00	0.00	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 10-01-2024	1.50	98.50	64.78	40.63	0.00	0.00
One Year Ago 11-07-2023	46.35	53.65	13.74	4.92	0.00	0.00

Intensity:







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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droughtmonitor.unl.edu

Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	00
Flood Watch (FFA)	00
Flood Warning (FLW)	00
Flood Advisories and Statements (FLS)	00
Flash Flood Warning (FFW)	00
Flash Flood Statement (FFS)	00
Hydrologic Summary (RVA)	31



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Precipitation Summary



Figure 5: October 2024 Monthly Precipitation Totals.



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Precipitation Summary Continued

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







Report for October 2024

Soil Moisture Anomaly



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



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Shallow and Deep Soil Moisture Percentiles

SPoRT-LIS 0-40 cm Soil Moisture percentile valid 07 Nov 2024



Figure 8: NASA's Short-term Prediction Research and Transition (SPoRT) Center's shallow (0-40 cm) soil moisture percentile valid November 7, 2024.



SPoRT-LIS 0-200 cm Soil Moisture percentile valid 07 Nov 2024



Figure 9: NASA's Short-term Prediction Research and Transition (SPoRT) Center's deep (0-200 cm) soil moisture percentile valid November 7, 2024.

