



# Monthly Report of River and Flood Conditions

Report for July 2021

<b>NWS FORM E-5</b> U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE  <b>MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS</b>  TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910	HSA OFFICE: <b>Marquette, MI</b>
	REPORT FOR (MONTH / YEAR): <b>July 2021</b>
	DATE: <b>Aug 13th, 2021</b>
	SIGNATURE: <b>Joe Phillips, Asst. Hydro Program Manager</b> <b>Robin J. Turner, MIC</b>
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

Anomalously dry conditions continued across much of central and western Upper Michigan during the month of July. As a result, D0 drought conditions persisted across portions of Upper Michigan. Many observation sites received nearly half of normal precipitation. In the southern and eastern parts of Upper Michigan, above normal precipitation occurred during the month of July.

Location	Precipitation	% of Normal	Snowfall
WFO Marquette	1.80	58%	T
Marquette City	1.43	46%	0
Quincy Hill	1.19	M	0
Ironwood	2.19	52%	0
Iron Mountain	2.93	86%	0
Manistique	4.06	1.18%	0
Munising	1.83	53%	0
Stambaugh	2.67	64%	0

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



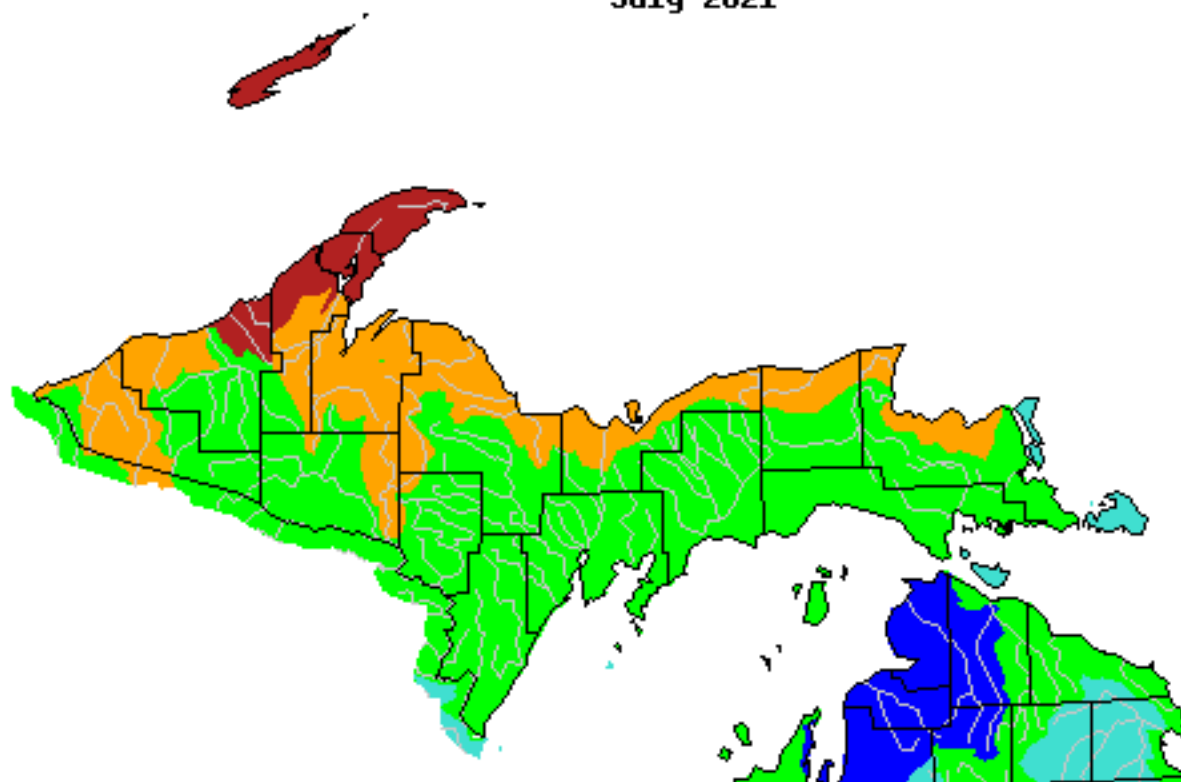
### Flooding Conditions

There were no flooding concerns during the month of July.

### River Conditions

Monthly average streamflows across Upper Michigan were below normal for the Lake Superior watershed but near to below normal for the Lake Michigan watershed for the month of July. This is primarily due to anomalously dry conditions for the month and overall lack of widespread precipitation.

July 2021



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

Figure 1: USGS monthly average streamflow in March 2021 across Upper Michigan



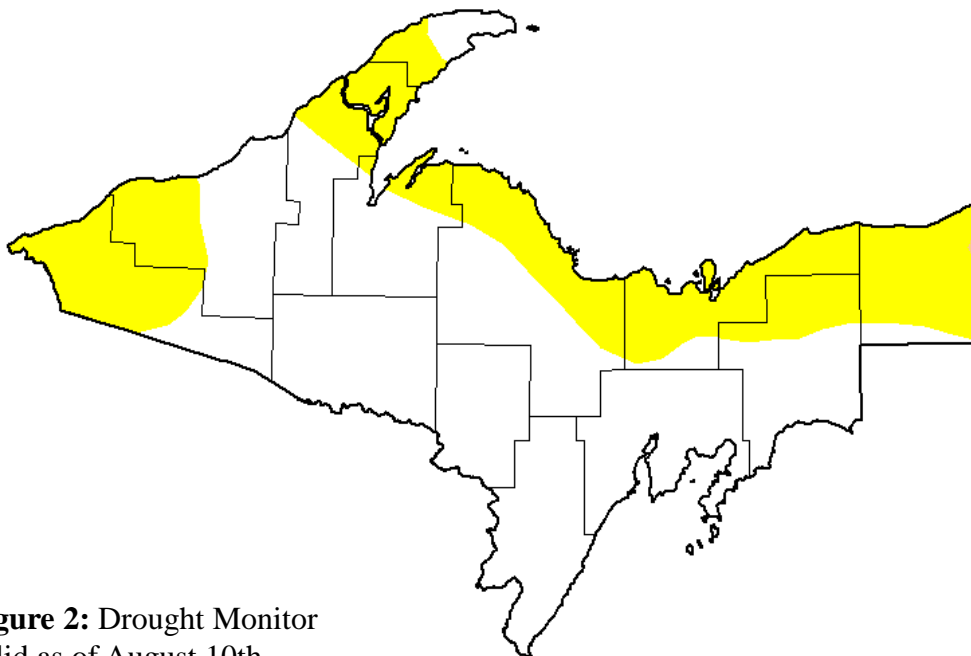
### Snowpack Conditions

The next snowpack discussion will start at the beginning of the 2021-2022 winter season.

### Drought Discussion

Below normal precipitation during the month of July has allowed abnormally dry conditions to persist across parts of Upper Michigan. These areas, specifically those in the east, north-central, Keweenaw Peninsula, and far west remain in a D0 status on the U.S. Drought Monitor.

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



**Figure 2:** Drought Monitor valid as of August 10th.

**August 10, 2021**  
(Released Thursday, Aug. 12, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	64.12	35.88	1.56	0.00	0.00	0.00
<b>Last Week</b> 08-03-2021	64.18	35.82	1.56	0.00	0.00	0.00
<b>3 Months Ago</b> 05-11-2021	87.01	12.99	8.41	0.00	0.00	0.00
<b>Start of Calendar Year</b> 12-29-2020	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> 09-29-2020	100.00	0.00	0.00	0.00	0.00	0.00
<b>One Year Ago</b> 08-11-2020	95.72	4.28	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>

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## Media Links

None.

## Hydro Products Issued

Product	Number
Hydrologic Outlook (ESF)	0
Flood Watch (FFA)	0
Flood Warning (FLW)	0
Flood Advisories and Statements (FLS)	1
Flash Flood Warning (FFW)	1
Flash Flood Statement (FFS)	1
Hydrologic Summary (RVA)	31
Daily River Forecasts (RVD)	29



## Precipitation Summary

Accumulated Precipitation (in)  
July 1, 2021 to July 31, 2021

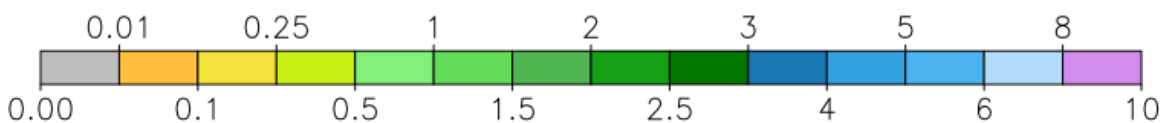
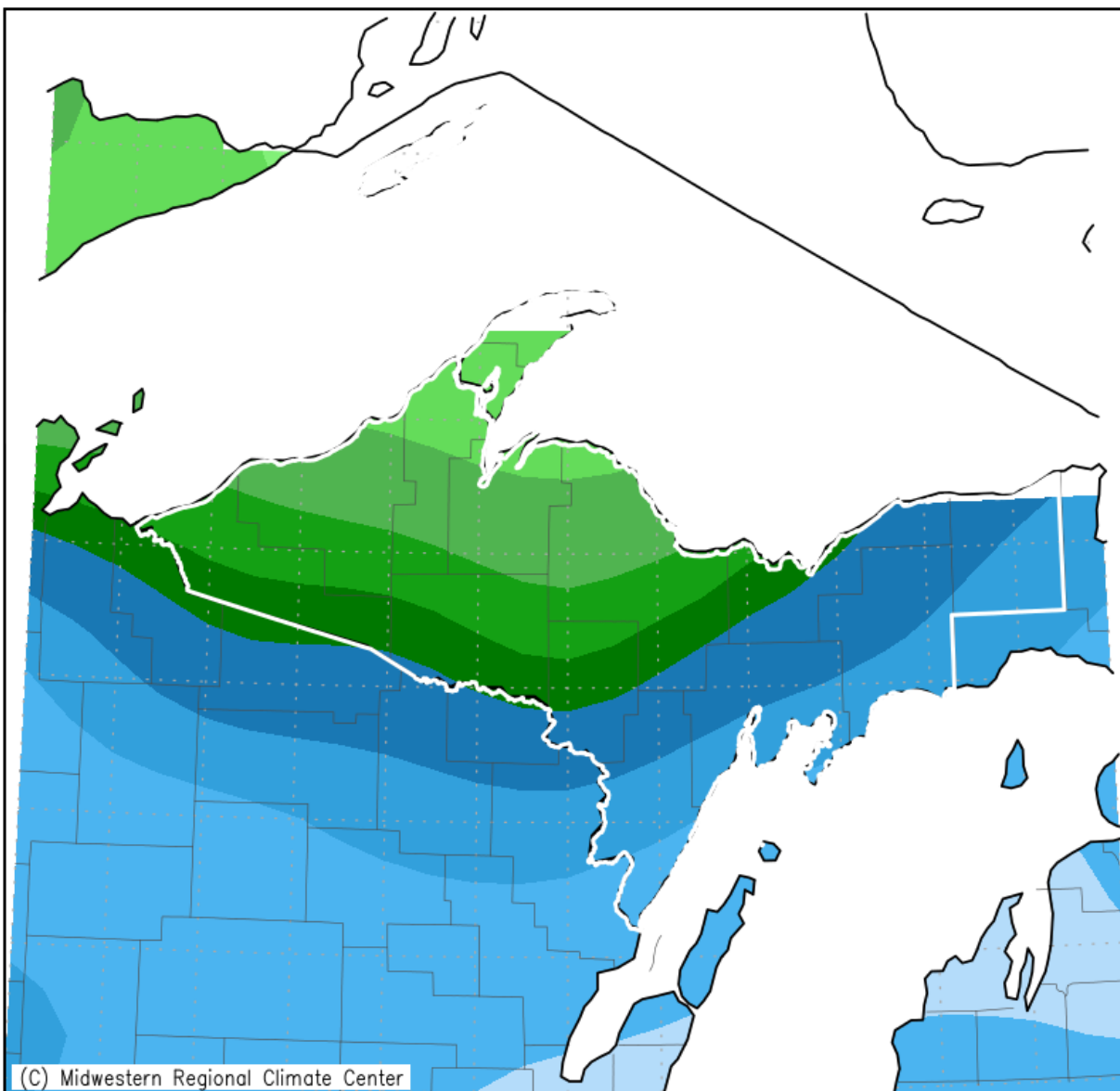
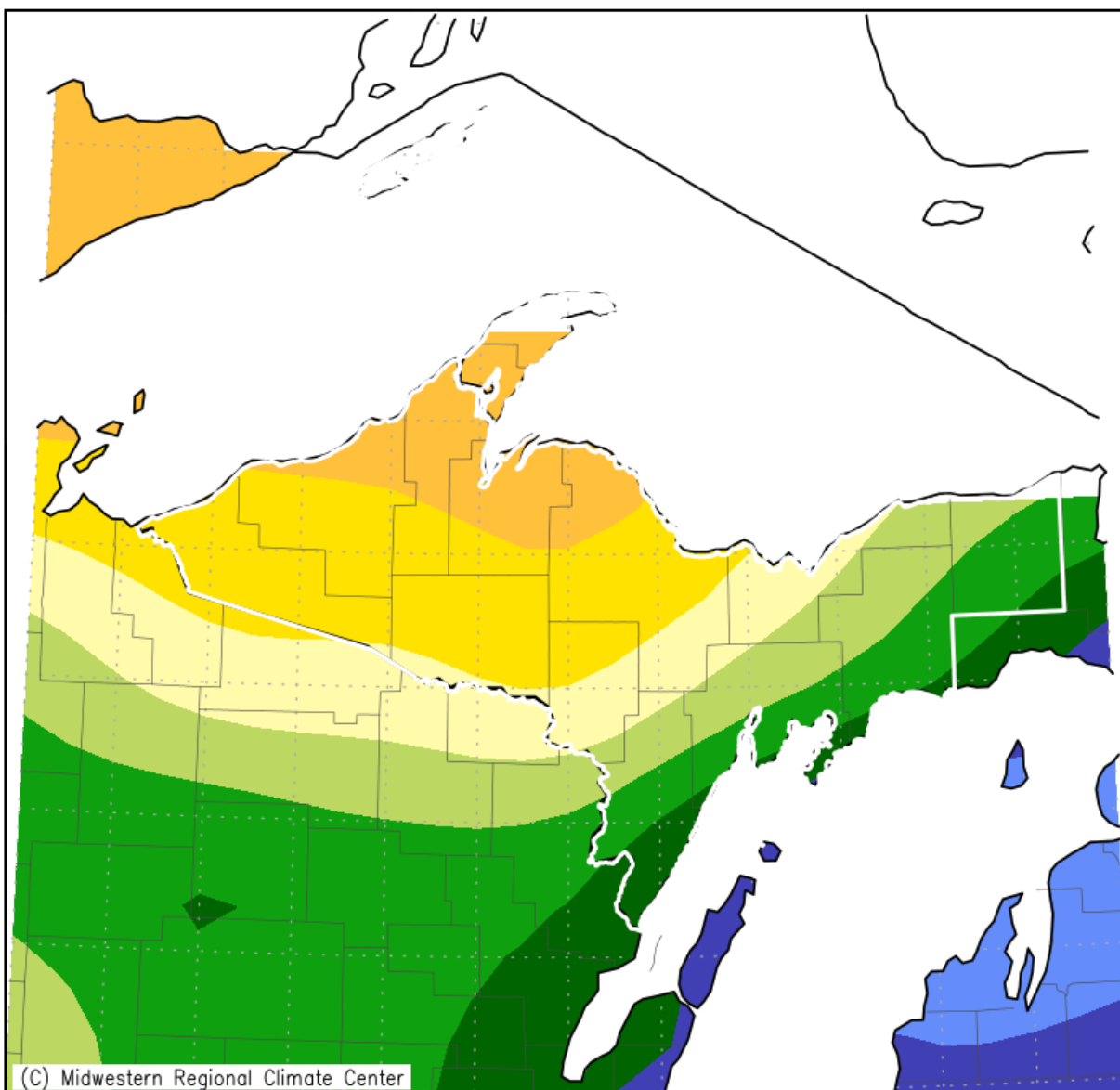


Figure 3: July 2021 Monthly Precipitation Totals.

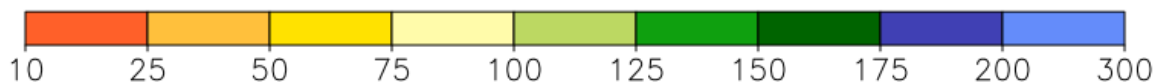


## Precipitation Summary Continued

Accumulated Precipitation: Percent of Mean  
July 1, 2021 to July 31, 2021



Mean period is 1991–2020.

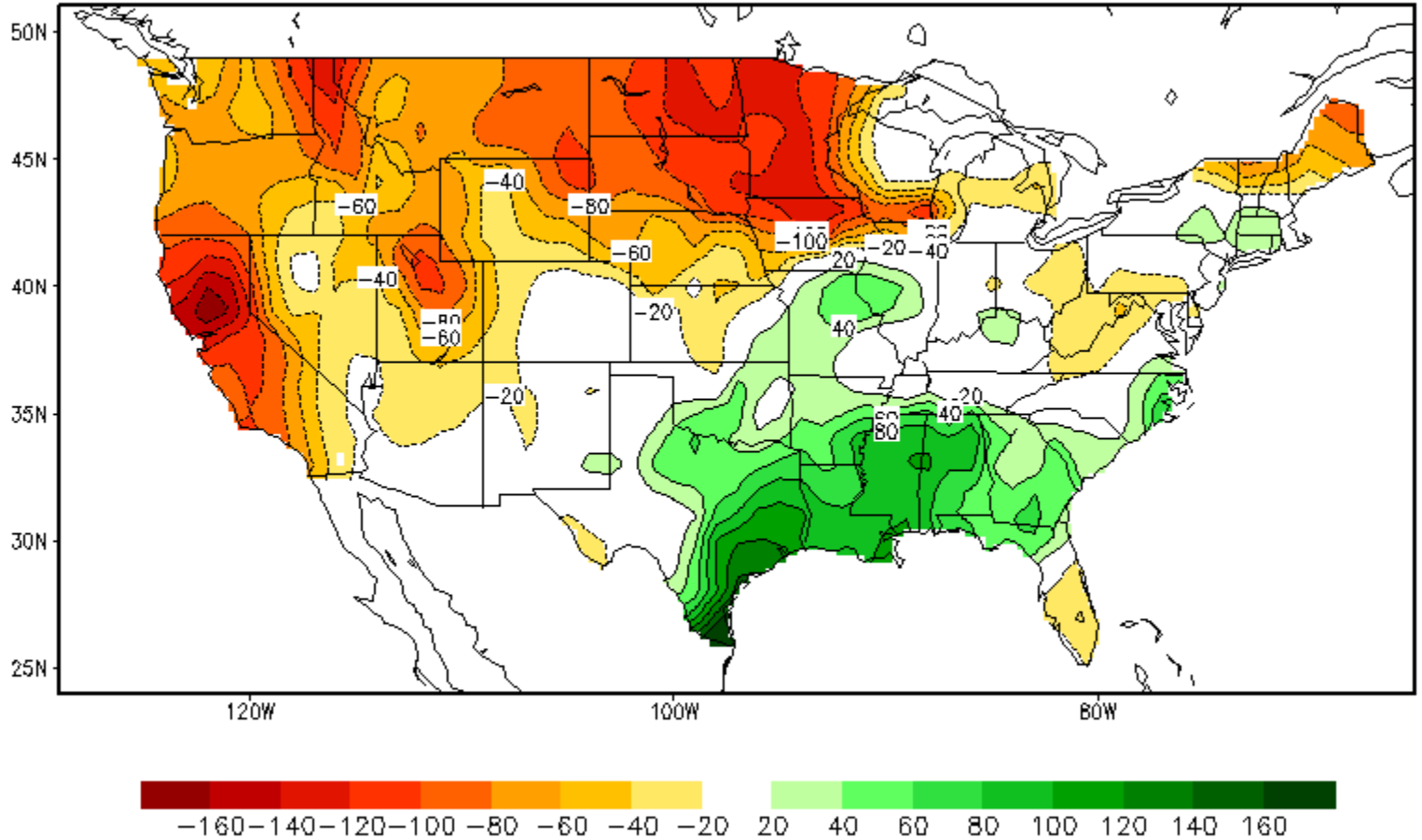


**Figure 4:** July 2021 Percent of Normal of Accumulated Precipitation.



## Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)  
JUL, 2021



**Figure 5:** Climate Prediction Center's monthly average soil moisture anomaly for July 2021.