

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

REPORT FOR (MONTH & YEAR):
August 2019

TO: NATIONAL WEATHER SERVICE (W/OS31)
HYDROMETEOROLOGICAL INFO CENTER
1325 EAST-WEST HIGHWAY, RM 13468
SILVER SPRING, MD 20910

DATE:
September 4, 2019

SIGNATURE:
Daniel K. Cobb, MIC
Andrew Dixon, Service Hydrologist

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 that no significant flooding occurred within this Hydrologic Service Area.

Summary

August 2019 was the second month in a row of below-average rainfall across the bulk of Lower Michigan. Multiple rounds of thunderstorms throughout the month produced locally higher rain totals, but did not result in any significant flooding. Meanwhile, seasonally dry weather helped the high water levels on Lake Michigan begin their seasonal drop. By the end of the month, the Lake Michigan levels had fallen more than 3 inches from the summertime high water mark.

Flood Conditions

The larger rivers in the area started the month at higher than normal levels (generally around the 75th percentile discharge for this time of year) owing to the wet spring and early summer period. With a 2nd consecutive month of drier than normal conditions, the rivers were able to continue dropping toward the typical summertime low-water levels. In general, by the end of the month, most of the larger rivers were near or slightly below the long term median (50th percentile) values. Similarly, soil moisture values began the month still significantly higher than normal (90th percentile), but were able to drop to near the 80th percentile by the end of the month. Once again this slow recovery was a function of the wet spring and early summer timeframe. No flooding at river forecast points occurred during the month.

Flood Stage Report

No forecast points exceeded flood stage during the month. Thus, the NWS Form E-3 “Flood Stage Report” was not issued.

River Conditions

The end of August percentage of normal flow for selected rivers is listed below:

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	136
Whitehall	White	124

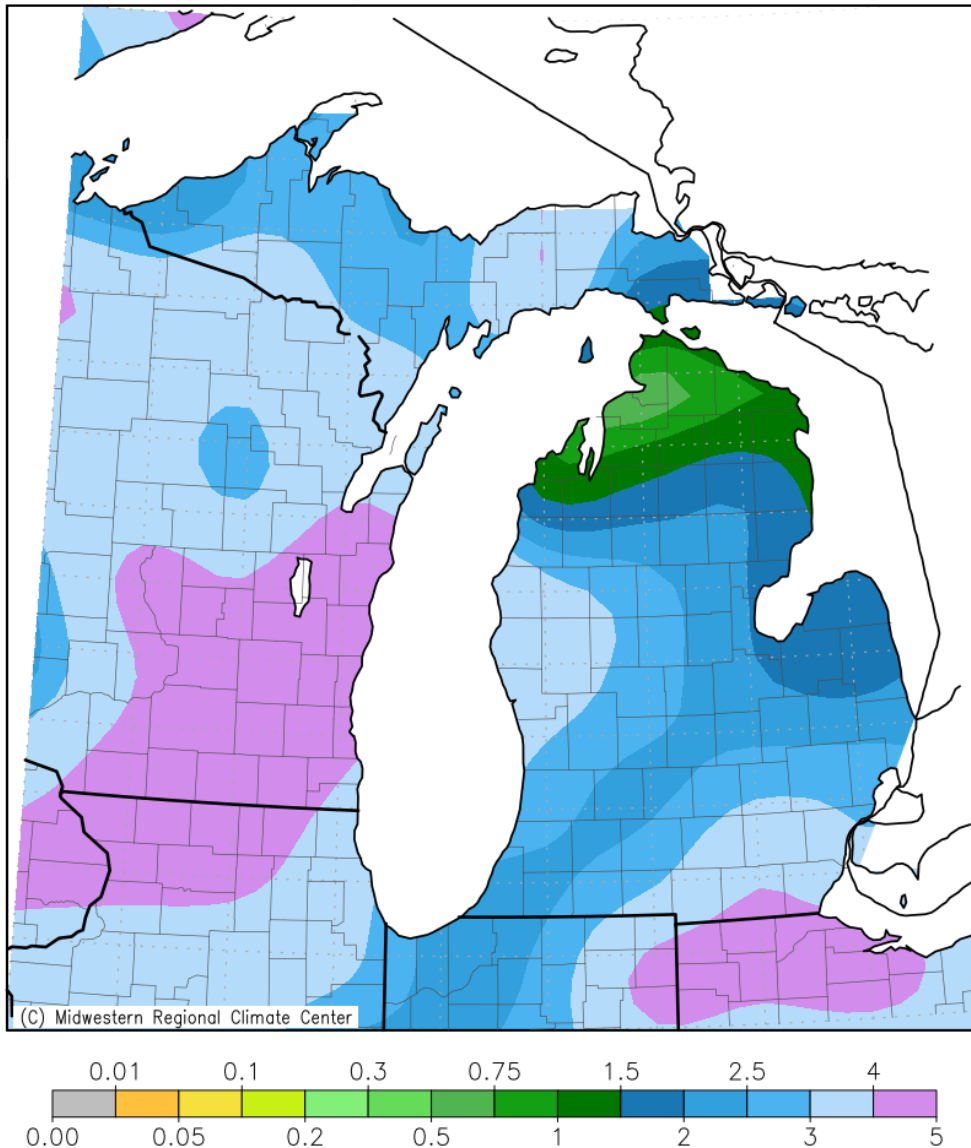
Ewart	Muskegon	97
Mt. Pleasant	Chippewa	95
Lansing	Grand	111
Grand Rapids	Grand	155
East Lansing	Red Cedar	127
Hastings	Thornapple	259
Battle Creek	Battle Creek	125
Battle Creek	Kalamazoo	110

General Hydrologic Information

August precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 3.41, 1.57, and 2.16 inches, respectively (Figure 1). Monthly departures were -0.18, -1.66, and -1.23 inches, respectively. Yearly departures were +5.54, +3.17 and +6.55 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for August 2019 is shown in Figure 2.

Temperatures for the month of August were near-average at Grand Rapids, Lansing and Muskegon. The average monthly temperature departures for these sites were -0.1, +0.3, and +0.4 degrees Fahrenheit, respectively.

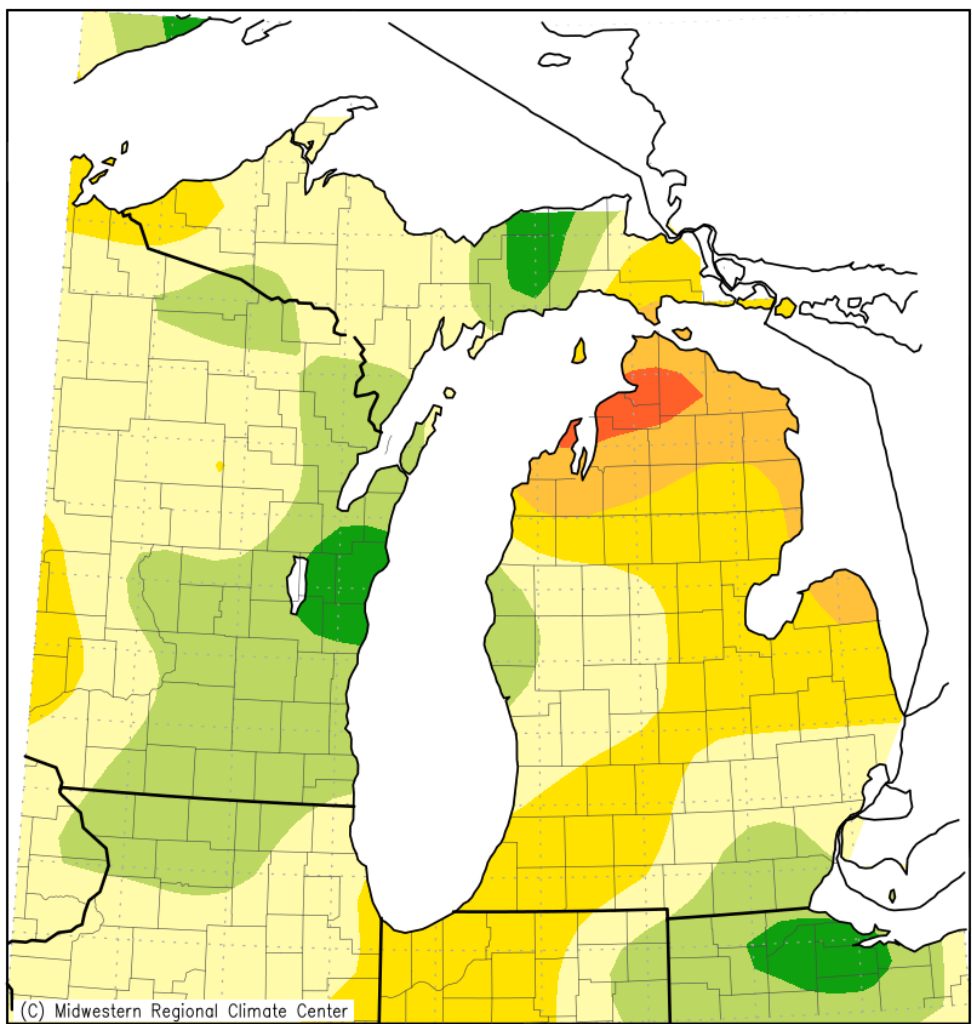
Accumulated Precipitation (in)
August 1, 2019 to August 31, 2019



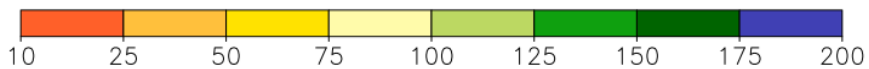
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 9/4/2019 1:09:49 PM CDT

Figure 1. August 2019 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean
August 1, 2019 to August 31, 2019



Mean period is 1981–2010.



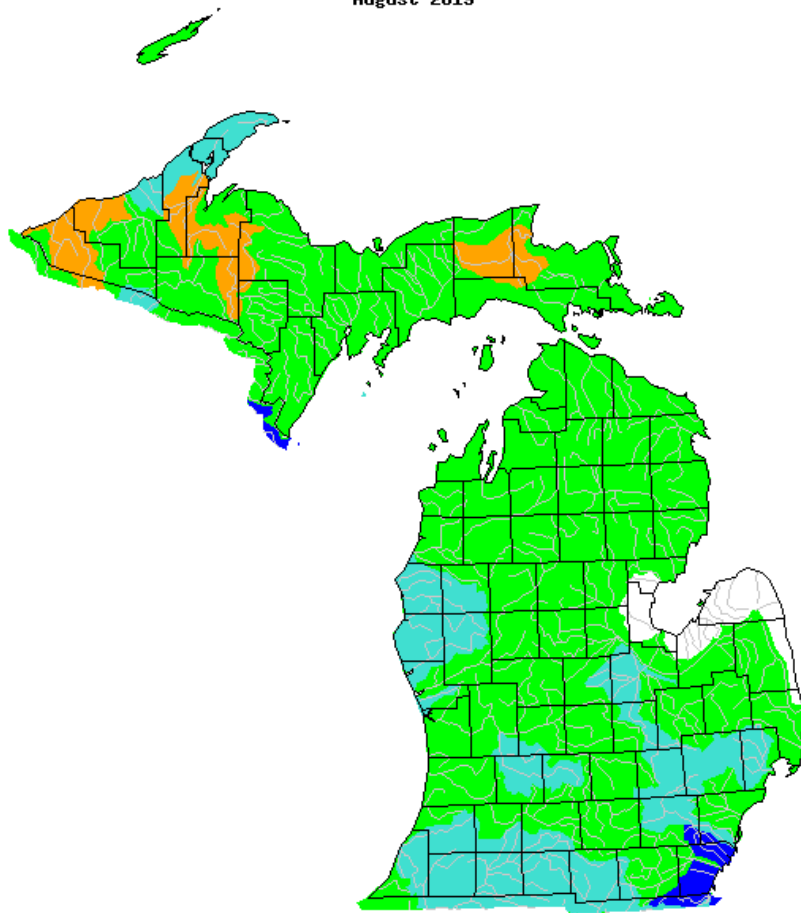
Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

Generated at: 9/4/2019 1:11:28 PM CDT

Figure 2. August 2019 Percent of Mean of Accumulated Precipitation. August represents the second month in a row with generally below-average precipitation across West Michigan.

August 2019



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 3. USGS monthly average streamflow, grouped by significant hydrologic units. Note streamflows across Lower Michigan have trended toward near-normal values at most locations.

Calculated Soil Moisture Ranking Percentile AUG, 2019

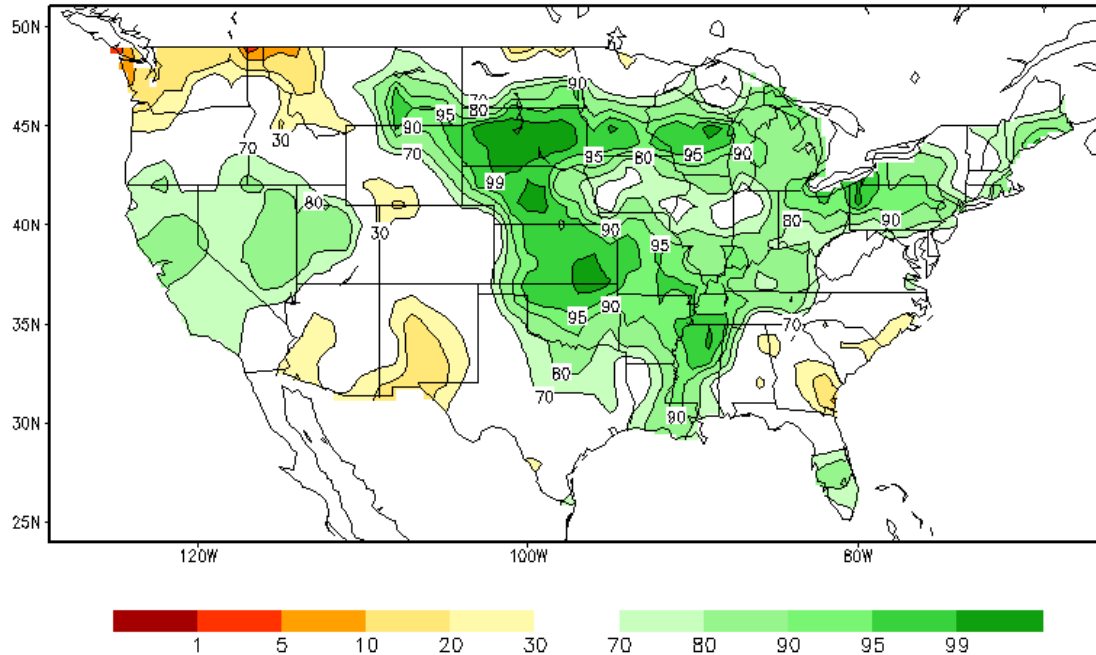


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 11th consecutive month West Michigan has been at or above the 80th percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

Hydrologic Products issued this month:

- 31 Hydrologic Summaries (ARBRVAGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 3 Event-driven Hydrologic Outlook (ARBESFGRR)
- 30 Daily River Forecasts (ARBRVDGRR)
- 0 Areal Flood Advisory Statements (ARBFLSGRR)
- 0 Flood Warning Statements (ARBFLWGRR)
- 0 Flood Watch Statements (ARBFFAGRR)
- 0 River Statements (ARBRVSGRR)

News Articles and Related Documentation

<https://www.mlive.com/weather/2019/08/drought-forecast-has-nailed-augusts-dryness-in-michigan.html>

<https://www.mlive.com/weather/2019/08/parts-of-michigan-on-doorstep-of-drought.html>

<https://wwmt.com/news/local/much-needed-rain-could-help-west-michigans-drought-conditions>