

NWS FORM E-5

U.S. DEPARTMENT OF COMMERCE
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:

Grand Rapids, MI
REPORT FOR (MONTH & YEAR):
August 2020

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

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

DATE: September 15, 2020

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 2020 was warmer and generally a bit drier than normal across Southwest and West-Central Michigan. As is typical this time of year, the primary rainmakers were convective systems moving through the area. This leads to streaks and bullseyes of higher rain, while the representative larger areas often get much less rain. These streaks of heavier rain were handled with short-term areal flood advisories, with only nuisance flooding impacts reported. With the general lack of widespread rainfall, and evapotranspiration values remaining seasonably high, shallow soils began to dry out and affect some crops across the state. By the end of the month, D0 drought had expanded to D1 drought across parts of the area, especially along the immediate lakeshore (Figure 5).

Meanwhile, Lake Michigan dropped just under 2 inches during the month, but remained significantly higher than long-term normal, and set an 8th straight monthly record high water level.

Flood Conditions

The mainstem Grand and Muskegon rivers spent most of the month around the 75th percentile, and popped up closer to the 90th percentile due to more significant convective rains in succession at the end of the month. Meanwhile, the Kalamazoo River missed out on most of those rains, and spent most of the month near to slightly below long-term average values for this time of year. It's important to remember that August is still near the long-term low point on Michigan rivers, and even higher water levels than normal this time of year typically do not result in any flooding issues.

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	135
Whitehall	White	120
Ewart	Muskegon	122
Mt. Pleasant	Chippewa	149
Lansing	Grand	146
Grand Rapids	Grand	181
East Lansing	Red Cedar	186
Hastings	Thornapple	181
Battle Creek	Battle Creek	194
Battle Creek	Kalamazoo	126

General Hydrologic Information

August precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 2.60, 3.45, and 2.22 inches, respectively (Figure 1). Monthly departures were -0.99, +0.22, and -1.17 inches, respectively. Yearly departures were +1.90, +4.06 and +4.92 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for August 2020 is shown in Figure 2.

Temperatures for the month of August were warmer than normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were +1.2, +1.8, and +2.3 degrees Fahrenheit, respectively.

Accumulated Precipitation (in)
August 1, 2020 to August 31, 2020

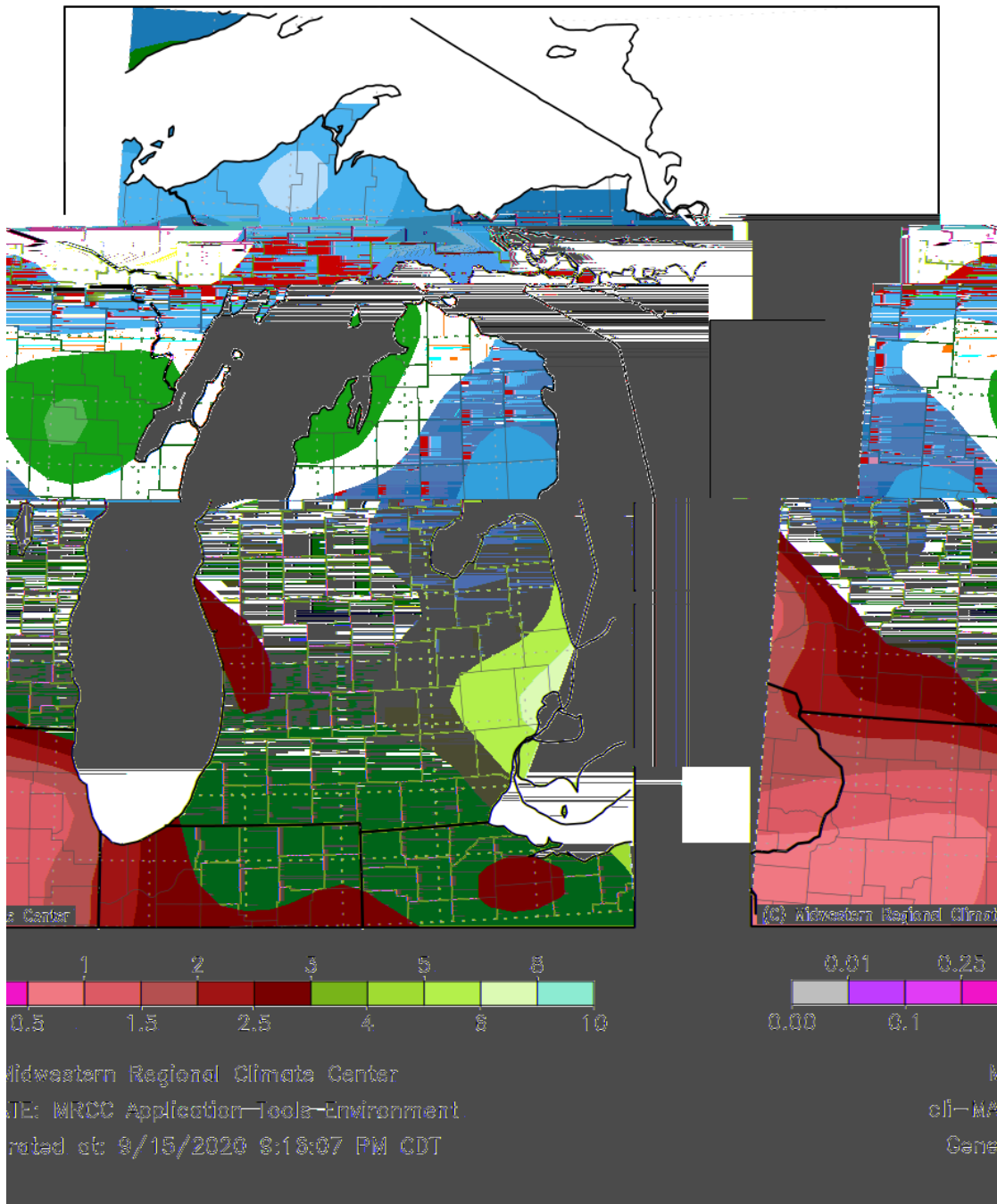


Figure 1. August 2020 Monthly Precipitation Totals

Accumulated Precipitation: Percent of Mean

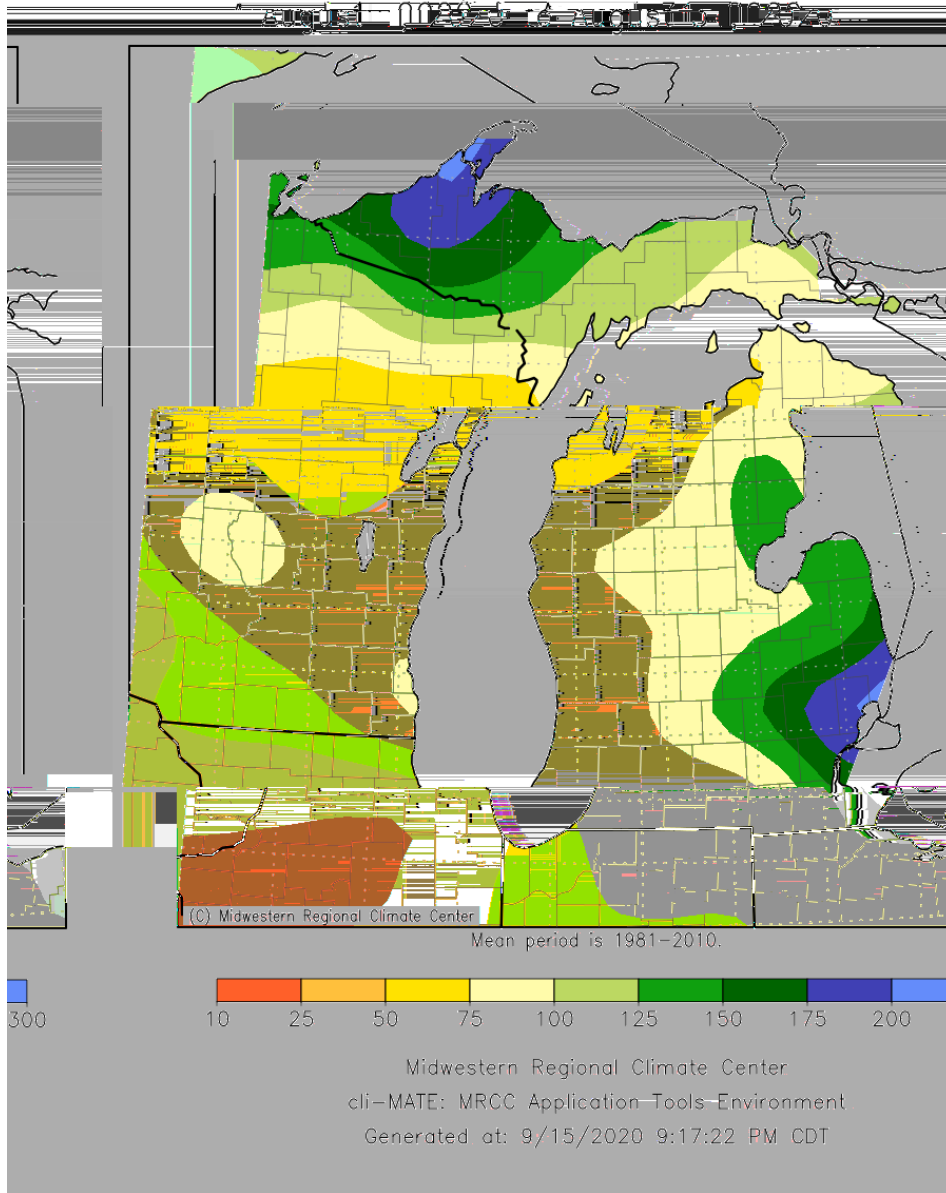
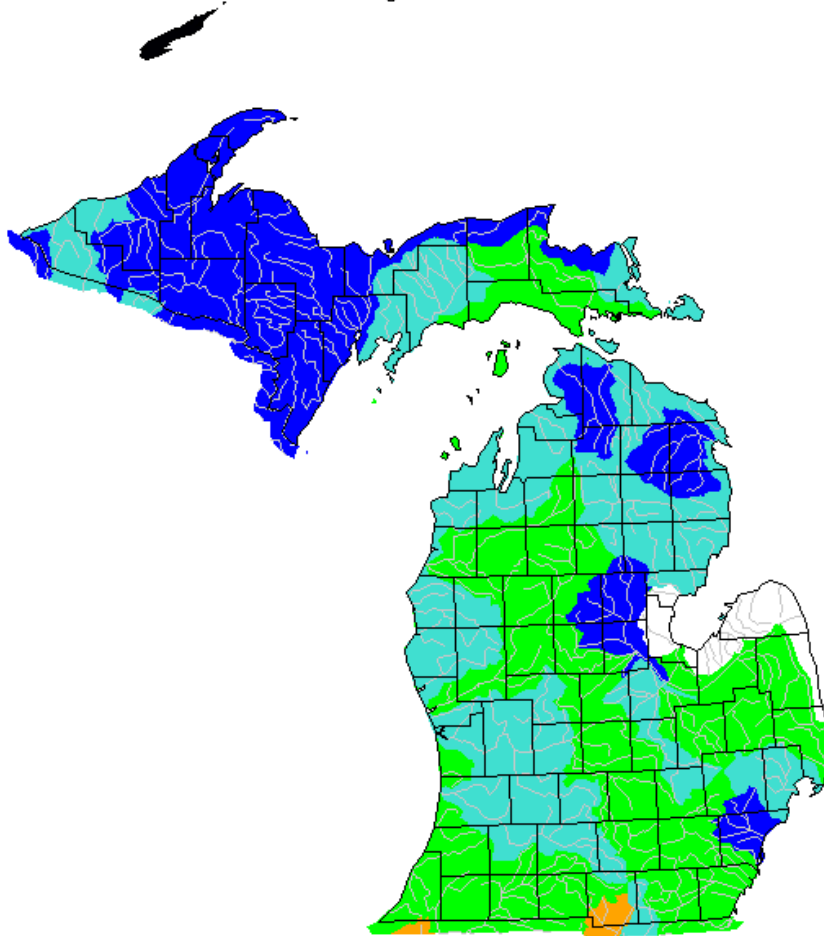


Figure 2. August 2020 Percent of Mean of Accumulated Precipitation.

August 2020



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 for August, grouped by significant hydrologic units. Note streamflows near to slightly above average across most of the Lower Peninsula of Michigan, but well above-average across the Upper Peninsula.

Calculated Soil Moisture Ranking Percentile
AUG, 2020

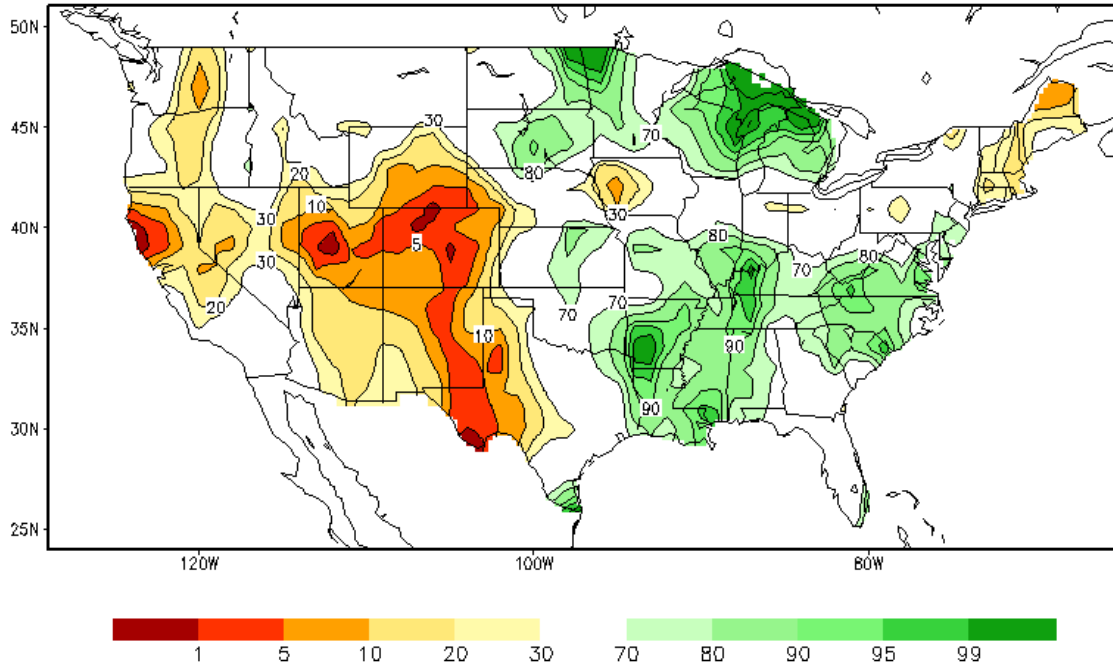
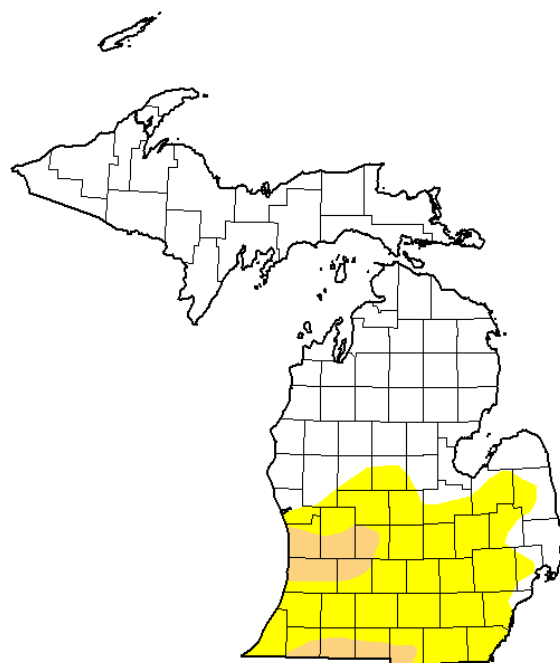


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 23rd consecutive month portions of West Michigan have been at or above the 80th percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

U.S. Drought Monitor
Michigan

August 25, 2020
(Released Thursday, Aug. 27, 2020)
Valid 8 a.m. EDT



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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Western Regional Climate Center



droughtmonitor.unl.edu

Figure 5. U.S. Drought Monitor analysis as of August 25, 2020. Note D1 “Moderate Drought” across portions of Western Lower Michigan.

Hydrologic Products issued this month:

- 31 Hydrologic Summaries (ARBRVAGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 2 Event-driven Hydrologic Outlook (ARBESFGRR)
- 31 Daily River Forecasts (ARBRVDGRR)
- 3 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/2020/09/lake-michigan-sets-record-high-water-level-for->

[eighth-month-in-a-row.html](#)

<https://www.mlive.com/news/jackson/2020/08/storm-downs-trees-floods-roads-around-jackson-county.html>

<https://www.mlive.com/news/grand-rapids/2020/08/beach-erosion-along-lake-michigan-remains-serious-threat-despite-water-levels-peaking.html>