

NWS FORM E-5 U.S. Department of Commerce
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

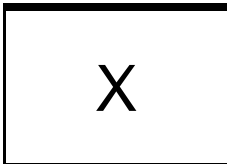
REPORT FOR (MONTH & YEAR):
October 2020

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

DATE:
November 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

October 2020 was cooler than normal and generally a bit wetter than normal, especially along the lakeshore. No widespread heavy rain events occurred during the month. No river flooding occurred during the month, and no short-term areal flooding events occurred either.

The fairly typical rainfall amounts allowed Lake Michigan to continue its seasonal decline, and by the end of the month was down nearly 12 inches from the summertime high. October was the 2nd month in a row that a new water level record was NOT set on Lake Michigan-Huron by the Army Corps of Engineers. Nevertheless, water levels remain much higher than the long term normal levels. As we continue through the fall storm season, erosion and lakeshore flooding will be a continued concern.

Flood Conditions

The larger rivers started and spent the first half of the month significantly near the long-term normal values for this time of year. The most widespread rain event of the month happened during the 3rd week, and brought most of the larger rivers up to near the 80th percentile, before falling back closer to normal again by the end of 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 October percentage of normal flow for selected rivers is listed below:

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	114
Whitehall	White	98
Ewart	Muskegon	106
Mt. Pleasant	Chippewa	128
Lansing	Grand	146
Grand Rapids	Grand	136
East Lansing	Red Cedar	108
Hastings	Thornapple	166
Battle Creek	Battle Creek	170
Battle Creek	Kalamazoo	111

General Hydrologic Information

October precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 2.67, 2.82, and 4.12 inches, respectively (Figure 1). Monthly departures were -0.59, +0.29, and +1.01 inches, respectively. Yearly departures were +0.10, +5.18 and +4.38 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for October 2020 is shown in Figure 2.

Temperatures for the month of October at Grand Rapids, Lansing and Muskegon were generally below normal. The monthly average temperature departures for these sites were -3.2, -2.8, and -0.8 degrees Fahrenheit, respectively.

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

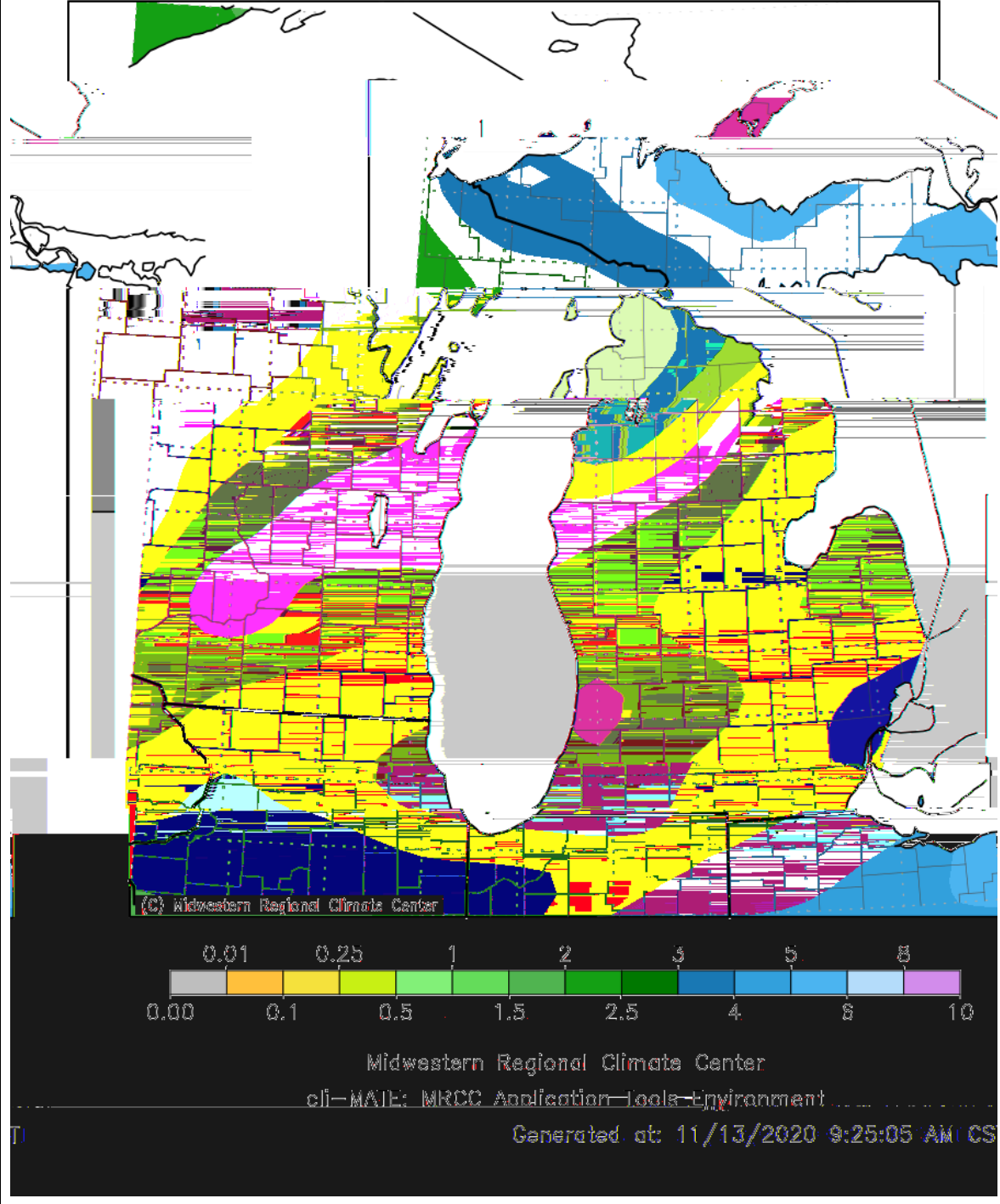


Figure 1. October 2020 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean
October 1, 2020 to October 31, 2020

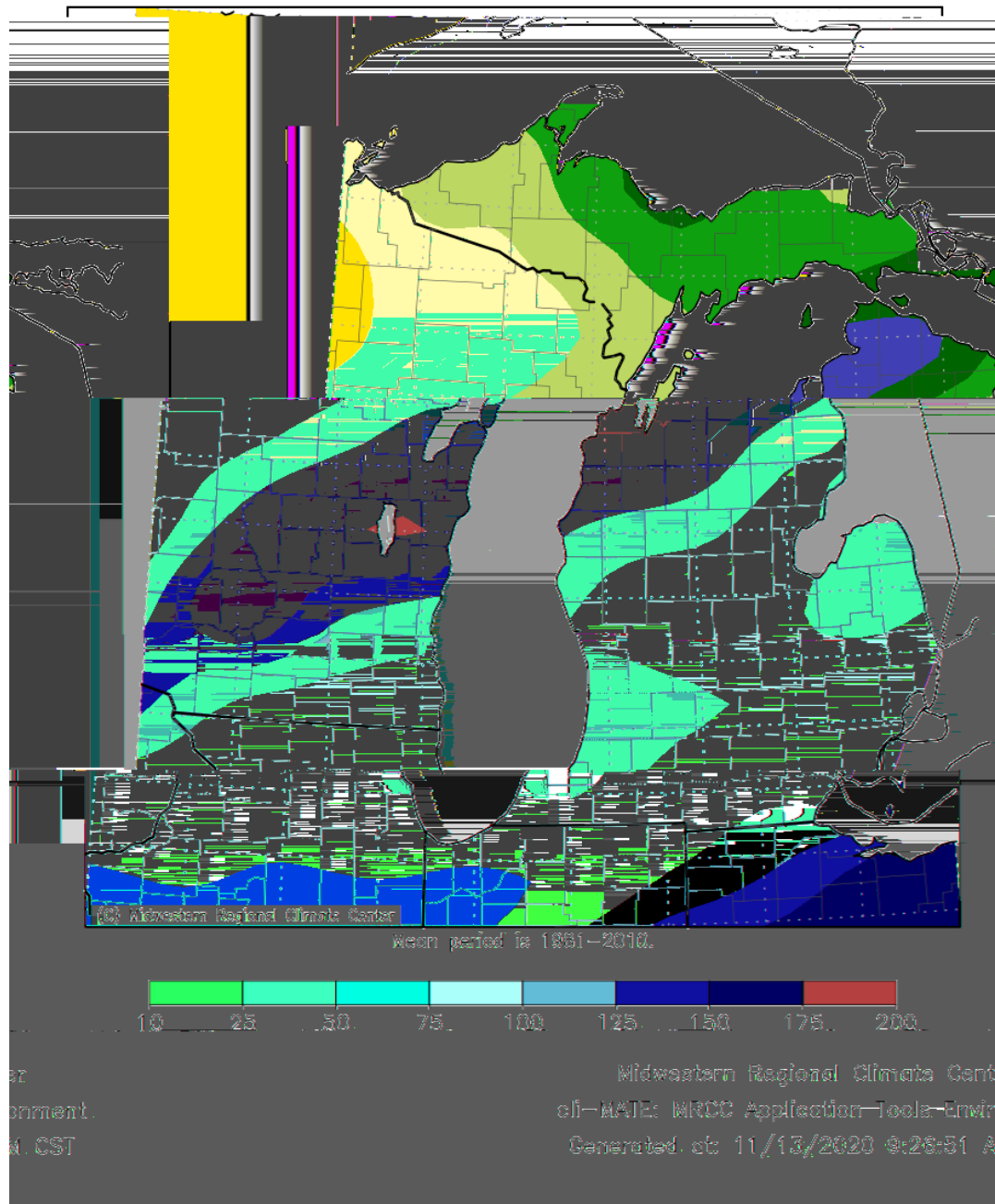


Figure 2. October 2020 Percent of Mean of Accumulated Precipitation. October was a continuation of below-average monthly precipitation across most of Lower Michigan.

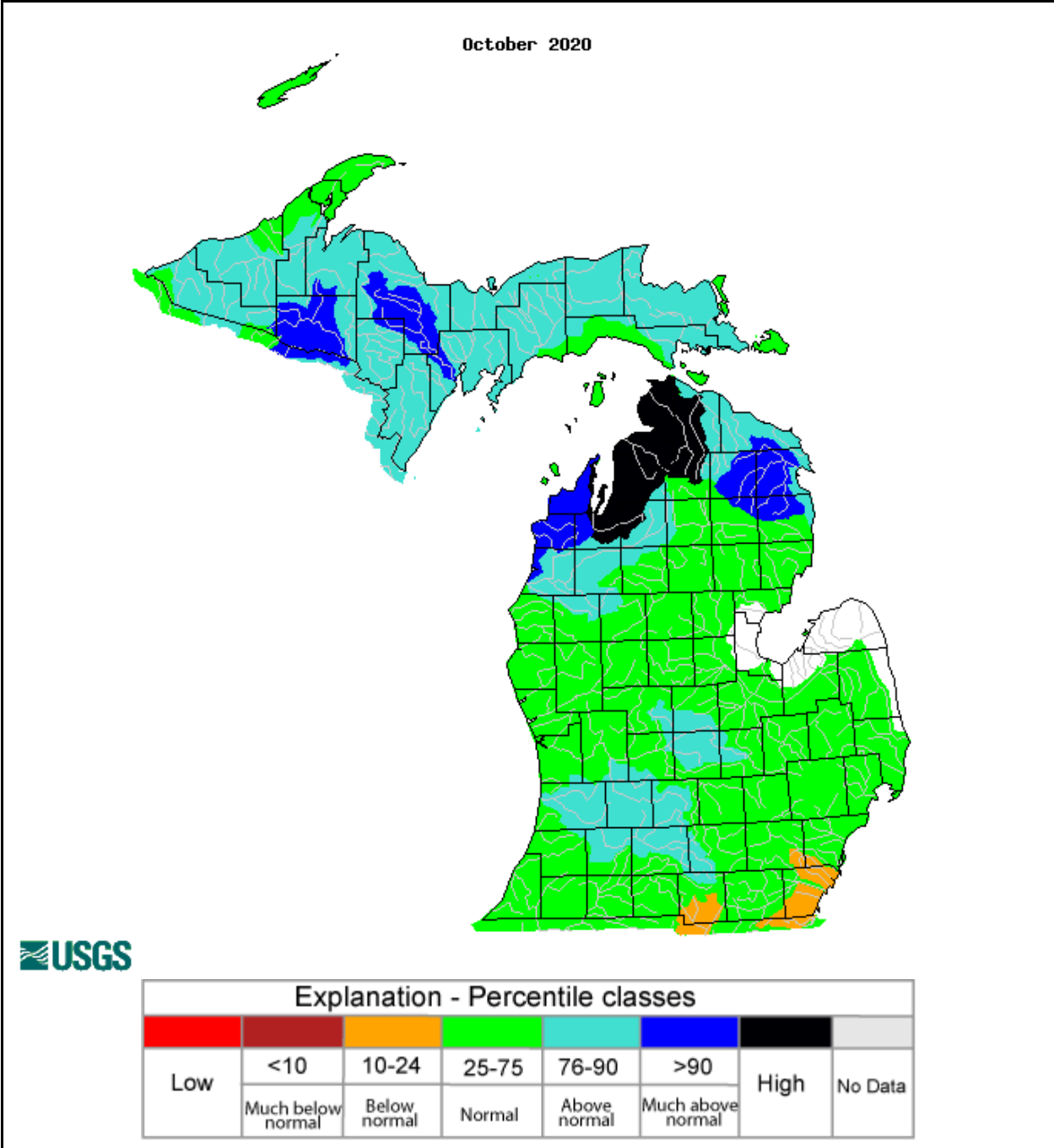


Figure 3. USGS monthly average streamflow for October, grouped by significant hydrologic units. Note streamflows across Lower Michigan widespread near to slightly above normal for the month, despite less rainfall than normal. This is due to elevated water tables resulting in elevated base flow in the rivers.

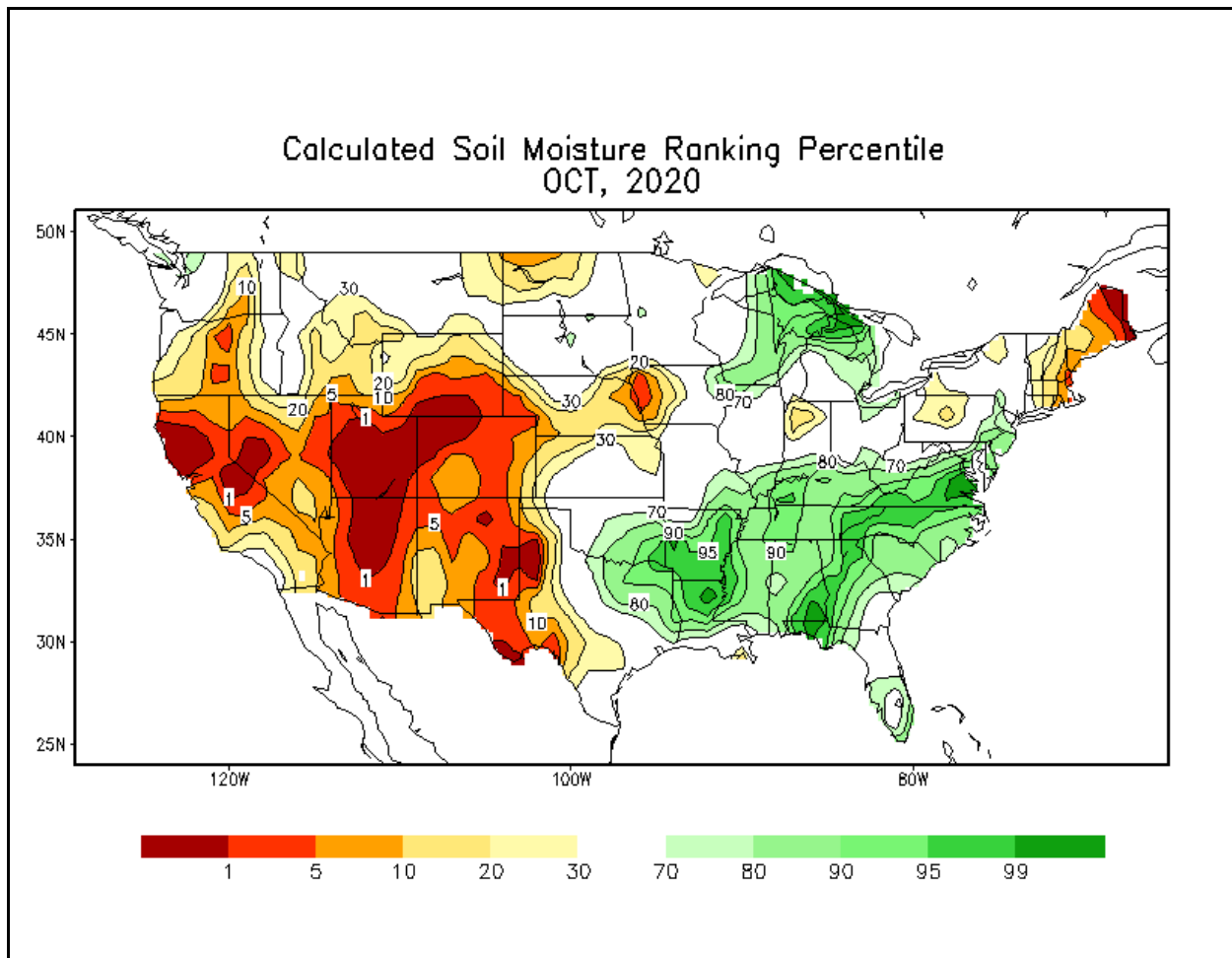


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the second month in a row, and only the 2nd month in the last roughly 2 years, that Western Lower Michigan is below the 80th percentile. This persistently saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

Hydrologic Products issued this month

- 31 Hydrologic Summaries (ARBRVAGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 0 Event-driven Hydrologic Outlook (ARBESFGRR)
- 27 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

none