

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:

March 13, 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**

February 2020 started on a fairly dry note, continuing the general dry conditions from the end of January. A few typical winter systems came through the area during the month, but overall the weather was pretty benign, with generally warmer than normal temperatures. The month started with very little snowpack, briefly developed a decent snowpack by mid month, and then melted most of that snowpack by the end of the month. This kept streamflows above average, but did allow them to overall drop toward more typical values for this time of year.

Meanwhile, Lake Michigan remained much higher than long-term average values, but did drop slightly (less than an inch) during the month. This was the second consecutive month that new records were set on Lake Michigan-Huron. Of note, also, the lack of ice growth on the lakes meant continued vulnerability to enhanced lakeshore impacts from storms, including dune and bluff erosion.

**Flood Conditions**

Most rivers started the month in the 75<sup>th</sup> to 90<sup>th</sup> percentile streamflow values for February, as they continued to recover from the heavy rain events in January. By the 2<sup>nd</sup> half of the month, dry weather allowed most streams to drop to the 50<sup>th</sup> to 75<sup>th</sup> percentile; closer to normal, but still above average. No significant flooding events occurred during the month.

**Flood Stage Report**

No forecast points exceeded flood stage during the month. Thus, no NWS Form E-3 “Flood Stage Report” was issued.

**River Conditions**

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

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	126
Whitehall	White	105

Ewart	Muskegon	123
Mt. Pleasant	Chippewa	142
Lansing	Grand	139
Grand Rapids	Grand	134
East Lansing	Red Cedar	148
Hastings	Thornapple	165
Battle Creek	Battle Creek	173
Battle Creek	Kalamazoo	133

### **General Hydrologic Information**

February precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 1.20, 1.22, and 1.02 inches, respectively (Figure 1). Monthly departures were -0.59, -0.25, and -0.81 inches, respectively. Yearly departures were +0.97, +2.15 and -0.23 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for February 2020 is shown in Figure 2.

Temperatures for the month of February were warmer than normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were +0.7, +0.8, and +1.6 degrees Fahrenheit, respectively.

Accumulated Precipitation (in)  
February 1, 2020 to February 29, 2020

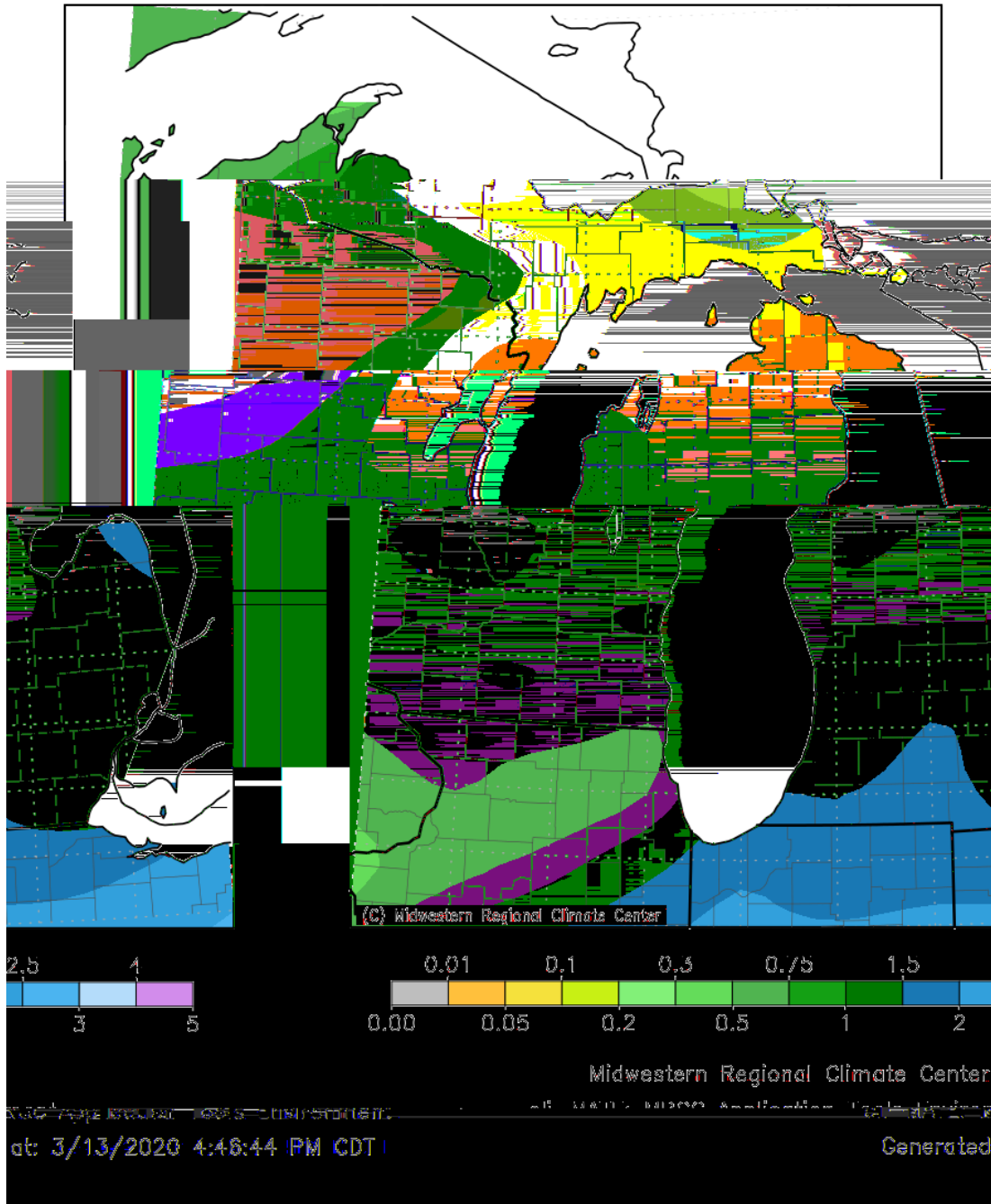
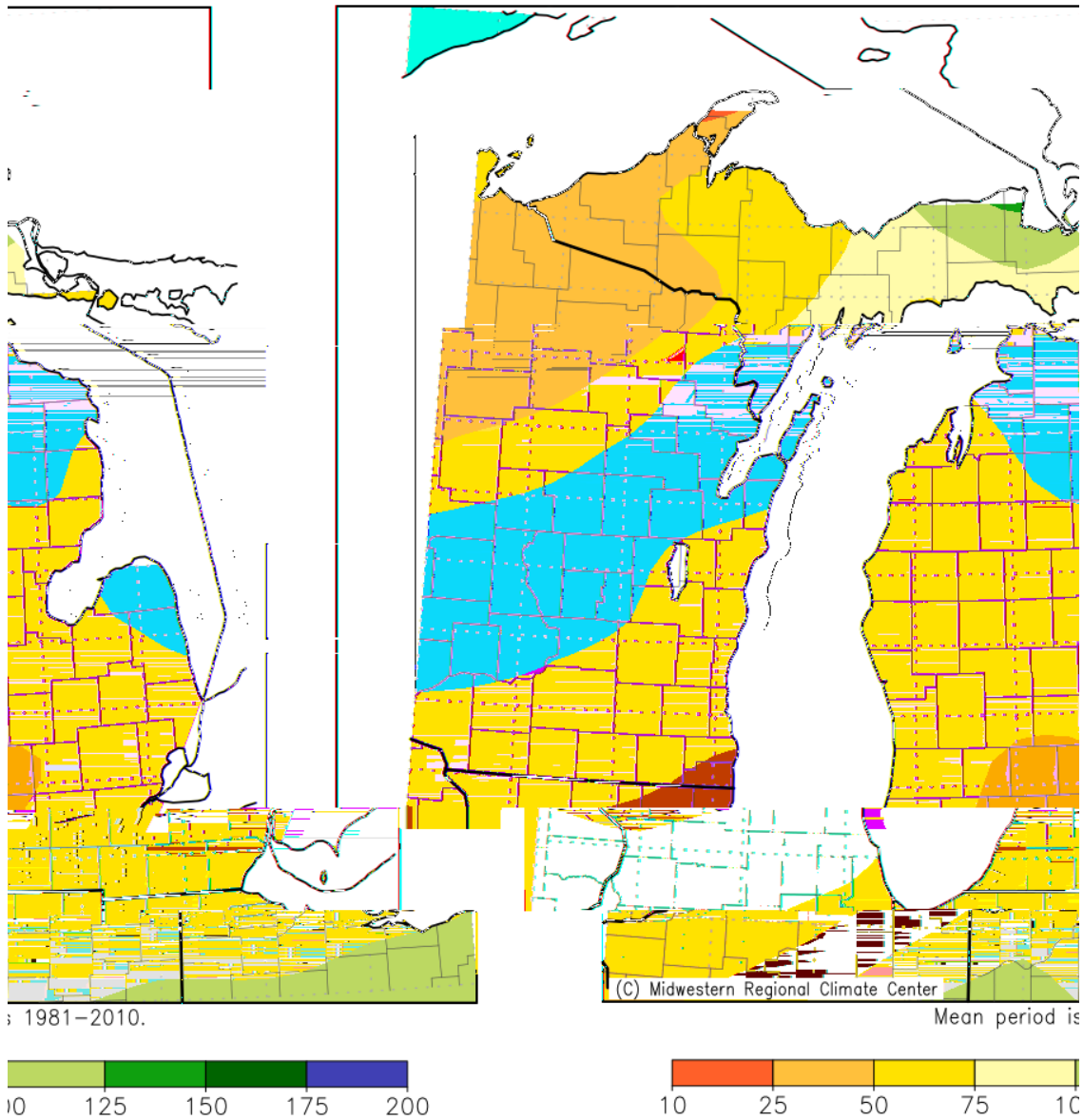


Figure 1. February 2020 Monthly Precipitation Totals

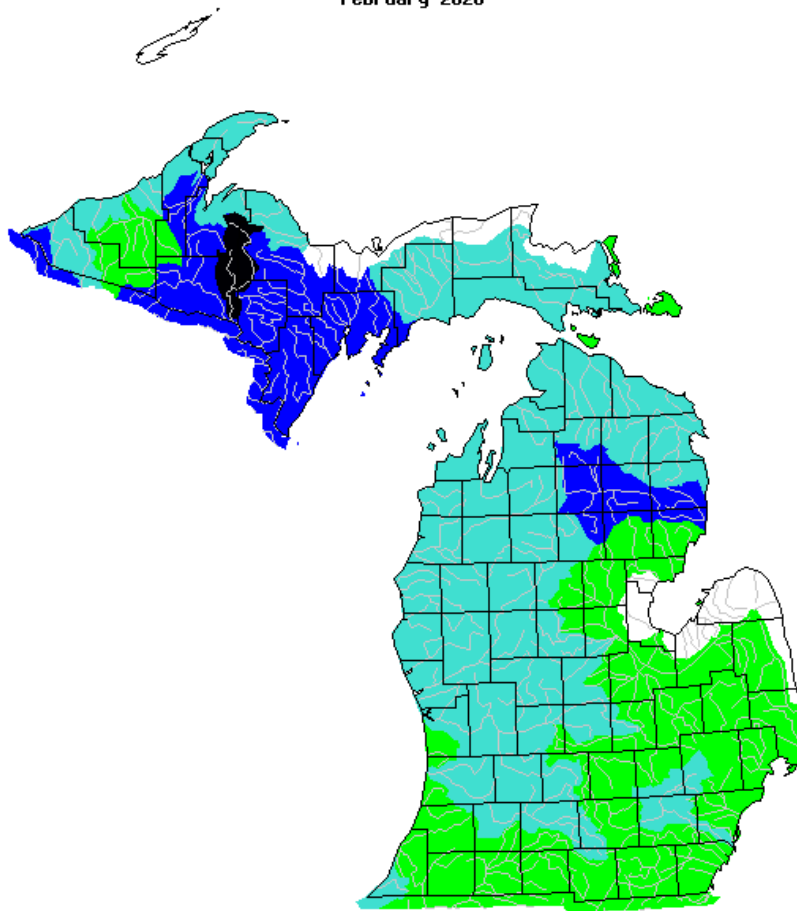
Accumulated Precipitation: Percent of Mean  
 2020 February 1, 2020 to February 29,



al Climate Center  
 tion Tools Environment  
 16000 10:33:05 2020-02-29 11:00 AM  
 Midwestern Region  
 cli-MATE: MRCC Applica  
 0 10:33:05 2020-02-29 11:00 AM

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

February 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 February, grouped by significant hydrologic units. Note streamflows across Lower Michigan continue general above median for this time of year.

## Calculated Soil Moisture Ranking Percentile FEB, 2020

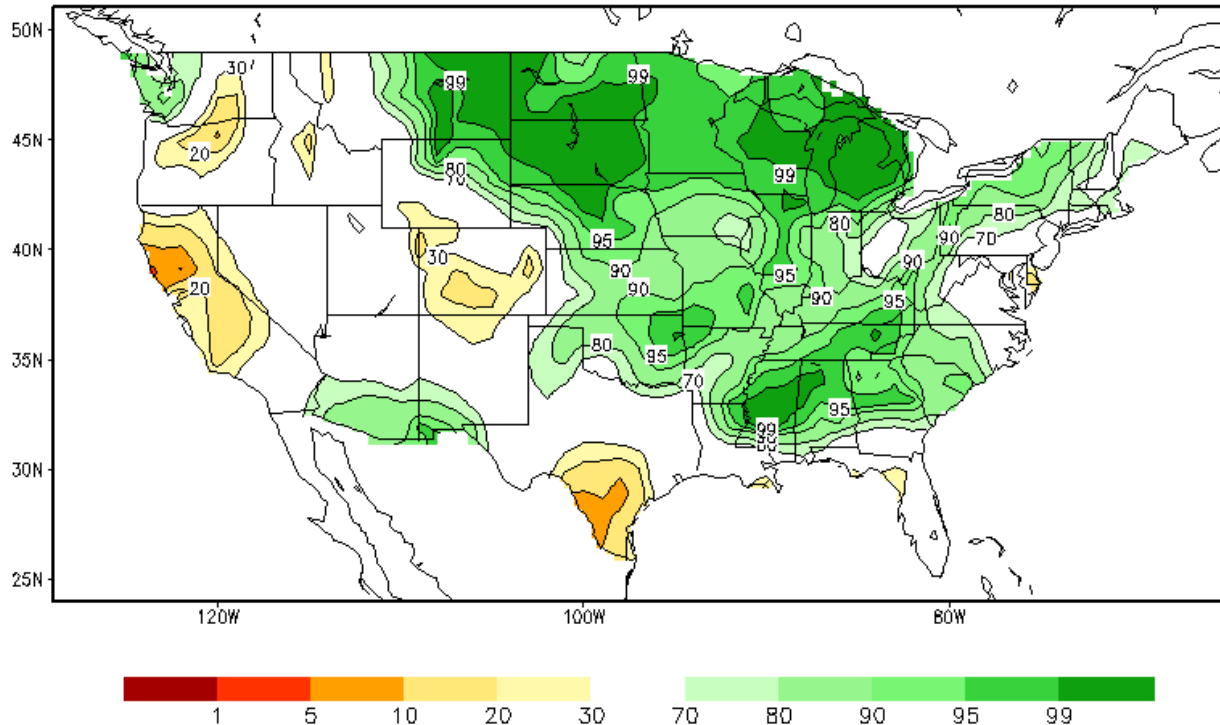


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 17<sup>th</sup> consecutive month West Michigan has been at or above the 80<sup>th</sup> percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

### **Hydrologic Products issued this month:**

- 29 Hydrologic Summaries (ARBRVAGRR)
- 2 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 0 Event-driven Hydrologic Outlook (ARBESFGRR)
- 0 Daily River Forecasts (ARBRVDGRR)
- 0 Areal Flood Advisory Statements (ARBFLSGRR)
- 0 Flood Warning Statements (ARBFLWGRR)
- 0 Flood Watch Statements (ARBFFAGRR)
- 19 River Statements (ARBRVSGRR)

### **News Articles and Related Documentation**

<https://www.mlive.com/news/kalamazoo/2020/02/we-have-to-respond-to-lake-michigan-erosion-us-senator-says.html>

<https://www.mlive.com/news/grand-rapids/2020/02/michmash-how-houses-falling-into-the-great-lakes-impacts-all-of-michigan.html>

<https://www.woodtv.com/weather/rising-waters/boulders-and-sea-walls-fighting-lake-michigan-erosion/>

<http://wmt.com/news/local/record-high-water-levels-for-lake-michigan-higher-levels-likely-in-2020>