

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:

February 14, 2020

SIGNATURE:

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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**

January 2020 began with the rivers continuing to rise in response to the widespread heavy rain that fell at the very end of December. By the 2<sup>nd</sup> week of January, the rivers were again falling, when another multi-inch widespread rain spread across the area, especially the Grand and Kalamazoo basins. This sent rivers climbing again, and led to another round of widespread minor flooding on many of the river systems in Southwest Lower Michigan. A decent snowpack built up around the middle of the month and slowly melted through the end of the month. This maintained elevated river levels for a prolonged period of time (below flood stage).

Defying the seasonal drop in Lake Michigan water levels that is typical in January, this year the water actually increased slightly during the month. The main reason for this was the continuing rounds of heavy precipitation and warmer than normal temperatures that limited the buildup of significant snowpack. Additional homes were either torn down or fell into the lake this month due to the ongoing erosion. January 2020 was the first month during the current high water episode in which Lake Michigan-Huron officially broke a previous monthly all-time record. Monthly records are expected to be broken each of the next 6 months, according to the official Army Corps of Engineers forecast.

**Flood Conditions**

Like most other months recently, most of the larger rivers in West Michigan spent the majority of the month above the 75<sup>th</sup> percentile flows for this time of year, and a significant amount of time above the 90<sup>th</sup> percentile levels. The Muskegon, Grand, and Kalamazoo River systems all set new daily max values for at least several days throughout the month. Numerous flood warnings were required across the area during both the high water to start the month, and again during the mid-month flooding. All flood crests during January were in the minor flooding category.

In general, temperatures were warm enough throughout the month to limit significant growth of ice on the rivers. However, a few minor ice jams did form on both the Muskegon River downstream of Big Rapids, and also on the Kalamazoo River near Comstock. No homes were flooded, and the freezeup process that led to these jams was fairly typical on these river systems. The exceptional part this year is that the antecedent water levels were

so high that there was little or no buffer on the riverbanks to handle even routine water level increases that result from the freezeup process.

### **Flood Stage Report**

Flood stage was exceeded at the forecast points along the Chippewa River at Mt. Pleasant, the Grand River at Lansing, the Grand River at Robinson Township, the Grand River at Comstock Park, the Looking Glass River at Eagle, the Maple River at Maple Rapids, the Muskegon River at Bridgeton, the Muskegon River at Newaygo, the Red Cedar River at East Lansing, Sycamore Creek at Holt, and the Thornapple River at Hastings. Thus, the NWS Form E-3 “Flood Stage Report” was issued.

### **River Conditions**

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

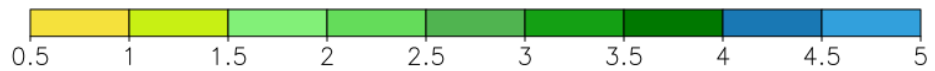
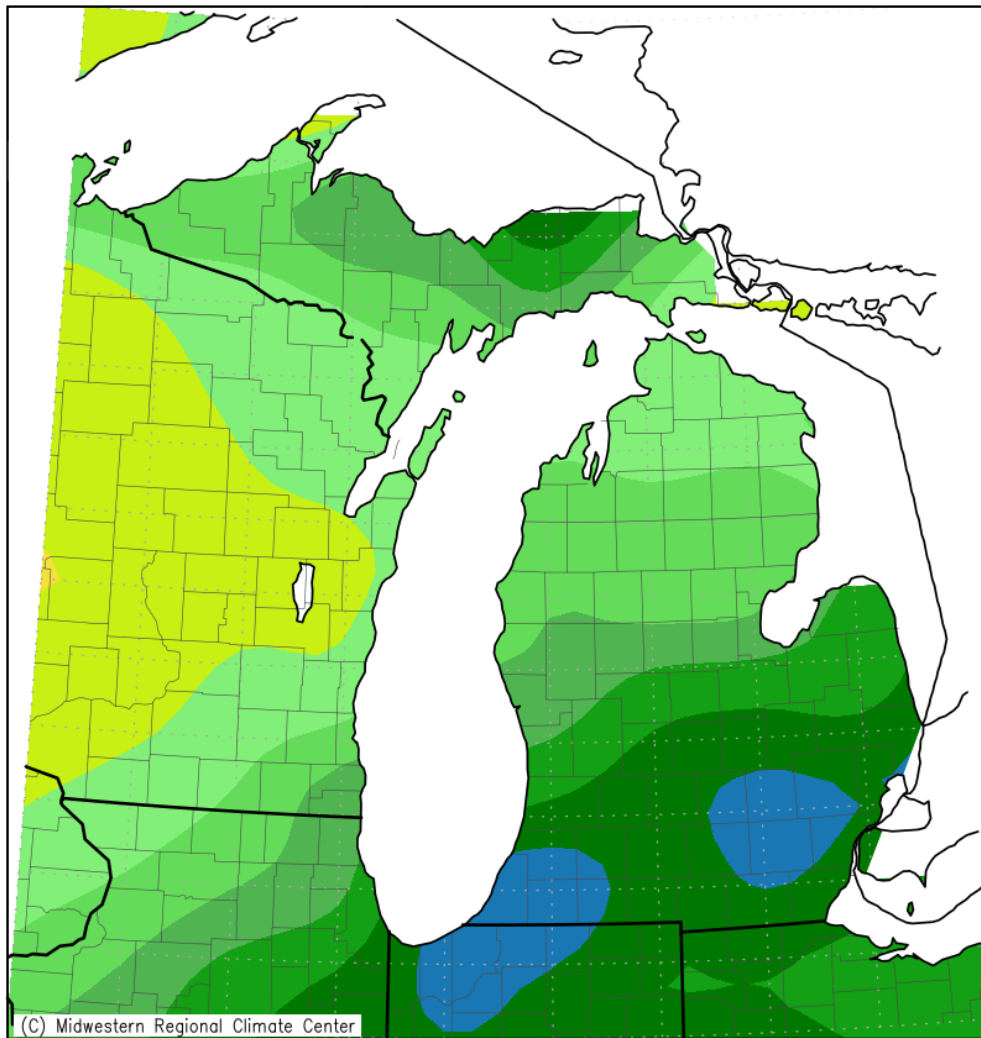
<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	166
Whitehall	White	151
Ewart	Muskegon	203
Mt. Pleasant	Chippewa	248
Lansing	Grand	331
Grand Rapids	Grand	367
East Lansing	Red Cedar	410
Hastings	Thornapple	325
Battle Creek	Battle Creek	274
Battle Creek	Kalamazoo	218

### **General Hydrologic Information**

January precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 3.65, 4.05, and 2.61 inches, respectively (Figure 1). Monthly departures were +1.56, +2.40, and +0.58 inches, respectively. Yearly departures were +1.56, +2.40 and +0.58 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for January 2020 is shown in Figure 2.

Temperatures for the month of January were significantly warmer than normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were +6.9, +6.8, and +6.6 degrees Fahrenheit, respectively.

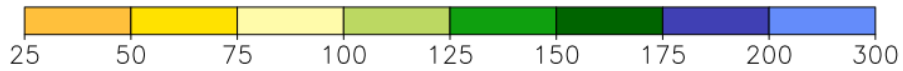
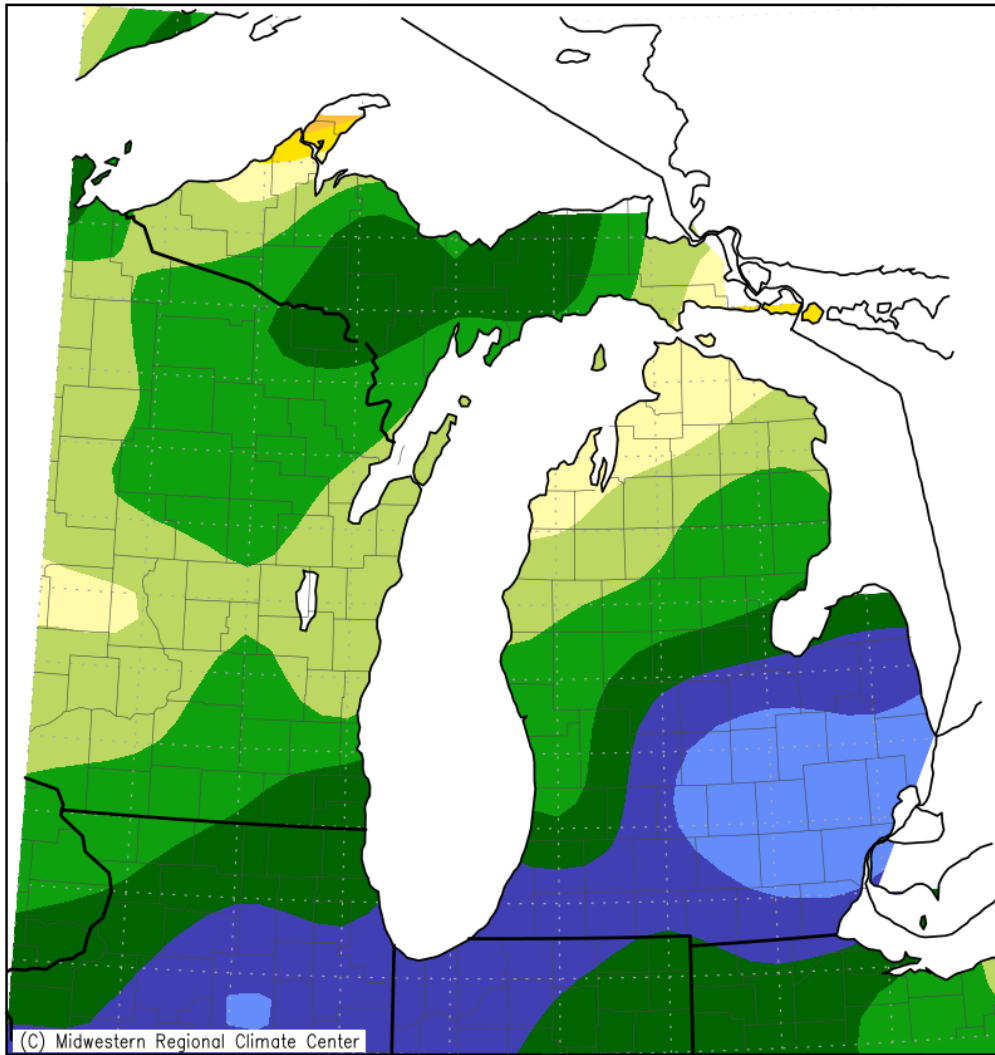
Accumulated Precipitation (in)  
January 1, 2020 to January 31, 2020



Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 2/14/2020 3:35:44 PM CST

Figure 1. January 2020 Monthly Precipitation Totals.

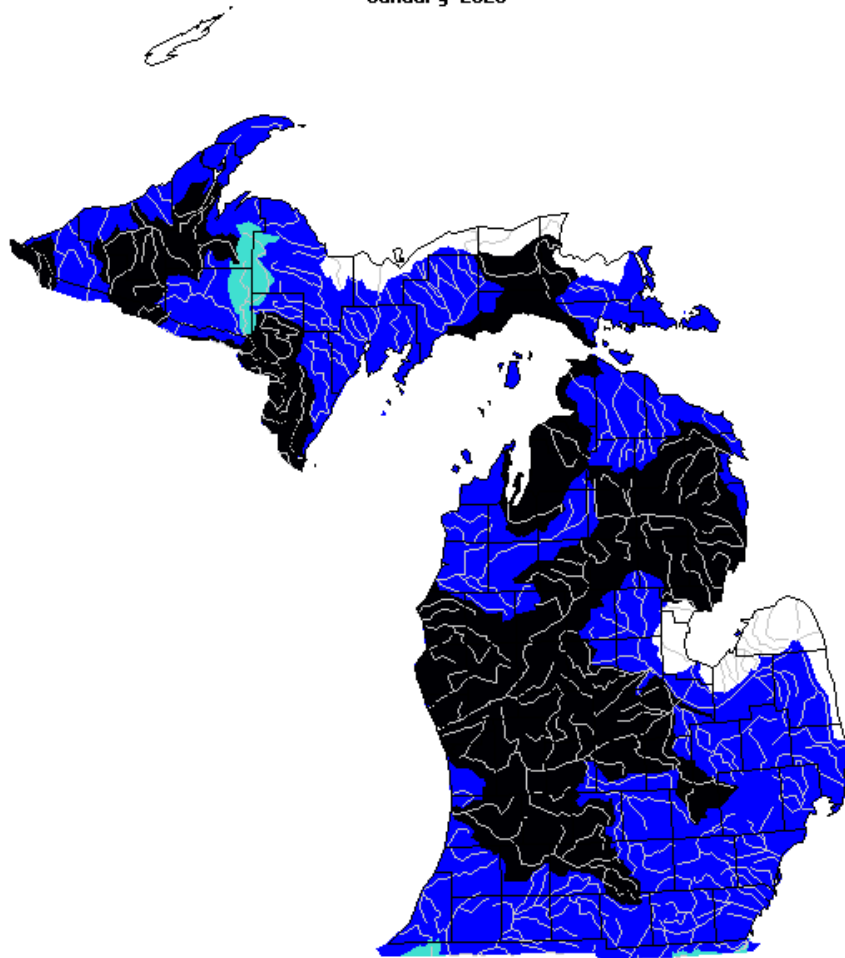
Accumulated Precipitation: Percent of Mean  
January 1, 2020 to January 31, 2020



Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 2/14/2020 3:36:31 PM CST

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

January 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 January, grouped by significant hydrologic units. Note streamflows across Lower Michigan widespread higher than the 90<sup>th</sup> percentile for the month.

### Calculated Soil Moisture Ranking Percentile JAN, 2020

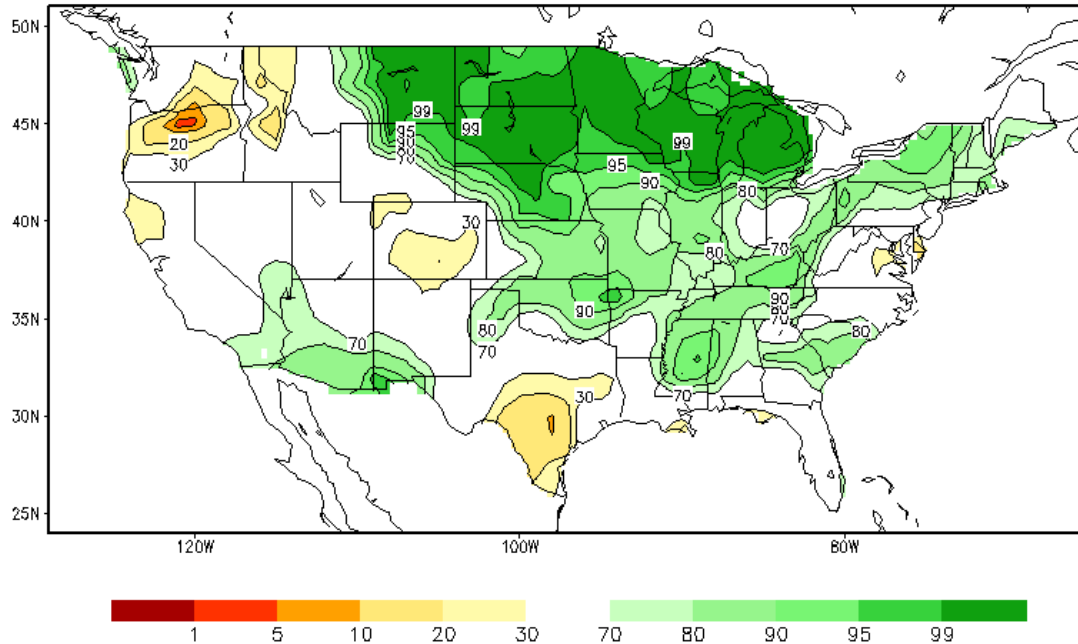


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 16<sup>th</sup> consecutive month West Michigan has been at or above the 80<sup>th</sup> percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

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

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

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

<https://www.mlive.com/news/grand-rapids/2020/01/grand-river-could-flood-some-kent-county-basements-roads.html>

<https://www.fox17online.com/news/local-news/kent/several-rivers-under-flood-watch-in-west-michigan>

<https://wwmt.com/news/local/rising-water-levels-could-cause-flooding-near-west-michigan-rivers>

<https://www.woodtv.com/weather/rising-waters/uncharted-territory-tracking-high-water-on-grand-river/>

<https://abc7chicago.com/weather/record-high-lake-michigan-january-water-level-causing-series-erosion-damage/5906943/>

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