

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:

June 4, 2019

SIGNATURE:

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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**

May 2019 definitely continued the trend of generally cool, cloudy, and wet conditions across the region. Persistent high pressure over the southeast U.S. led to repetitive active weather across the middle part of the country, extending up into Michigan. Despite the much wetter than normal conditions around the area, no significant flooding occurred as the storms were spaced out enough that the rivers could handle the water without much of a problem. The ongoing wetter-than-normal weather continued the trend of elevated groundwater levels in far southwest Lower Michigan. This continues to produce some ongoing lake flooding and elevated streamflows on some of the smaller rivers in the area.

**Flood Conditions**

The month started with most of the larger rivers elevated (between the 75<sup>th</sup> and 90<sup>th</sup> percentiles). The rainstorms were spaced out enough to avoid any river flooding issues, but frequent enough to keep most rivers at these same elevated (but non-flooding) levels for the bulk of the month. The one exception was down along the Portage River near Vicksburg, where the river spent about 10 days slightly above flood stage, with the elevated groundwater levels setting the stage for prolonged high water. Fortunately, multiple impact surveys of the area confirmed no significant flooding. As a result, a change in flood stage (upward) at this location was initiated. Not surprisingly, the soils remained much wetter than normal for yet another month (Figure 4), which began to impact agriculture around Lower Michigan as farmers couldn't get into the fields.

Two of the heaviest rain events throughout the month did result in the issuance of areal flood advisories for a few hours, as local ponding and poor-drainage issues resulted in minor temporary impacts (mainly to vehicle traffic). These occurred on May 1 (generally south of Grand Rapids/I-96 corridor) and May 25 (mainly along the I-96 corridor).

Of note, Lake Michigan water levels climbed 9 inches during the month of May, setting a new monthly record for May. Numerous impacts were noted throughout the month, mainly along the numerous drowned river mouths that dot the Lake Michigan shoreline.

## **Flood Stage Report**

The forecast point on the Portage River at Vicksburg exceeded flood stage during the month. Thus, the NWS Form E-3 “Flood Stage Report” was issued.

## **River Conditions**

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

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	192
Whitehall	White	175
Evert	Muskegon	181
Mt. Pleasant	Chippewa	218
Lansing	Grand	213
Grand Rapids	Grand	229
East Lansing	Red Cedar	166
Hastings	Thornapple	196
Battle Creek	Battle Creek	203
Battle Creek	Kalamazoo	143

## **General Hydrologic Information**

The month of May featured above-average precipitation across the vast majority of the area, with significantly above-average values over far Southwest Michigan.

May precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 5.96, 2.61, and 6.14 inches, respectively (Figure 1). Monthly departures were +1.98, -0.75 and +2.89 inches, respectively. Yearly departures were +4.99, +0.94 and +6.61 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for April 2019 is shown in Figure 2.

Temperatures for the month of May were below-average at Grand Rapids, Lansing and Muskegon. The average monthly temperature departures for these sites were -1.7, -1.3 and -1.8 degrees Fahrenheit, respectively.

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

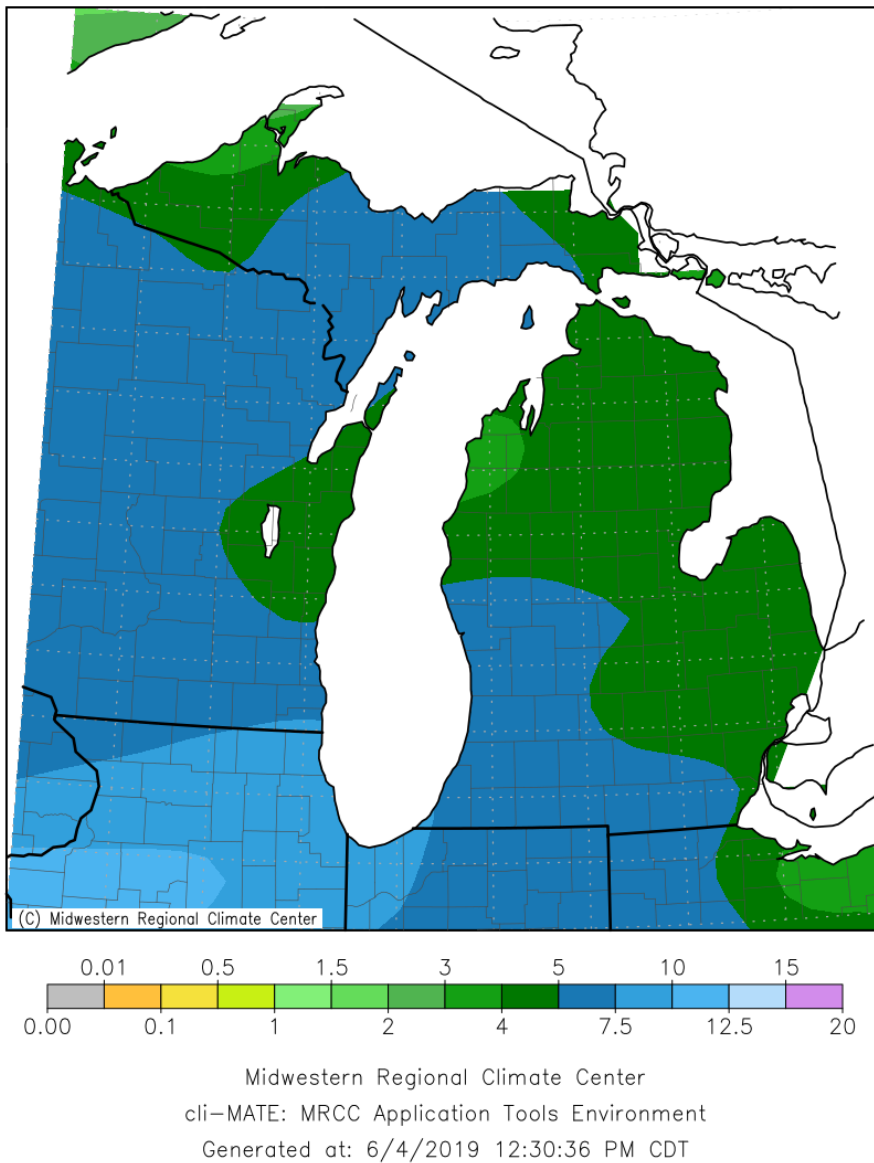
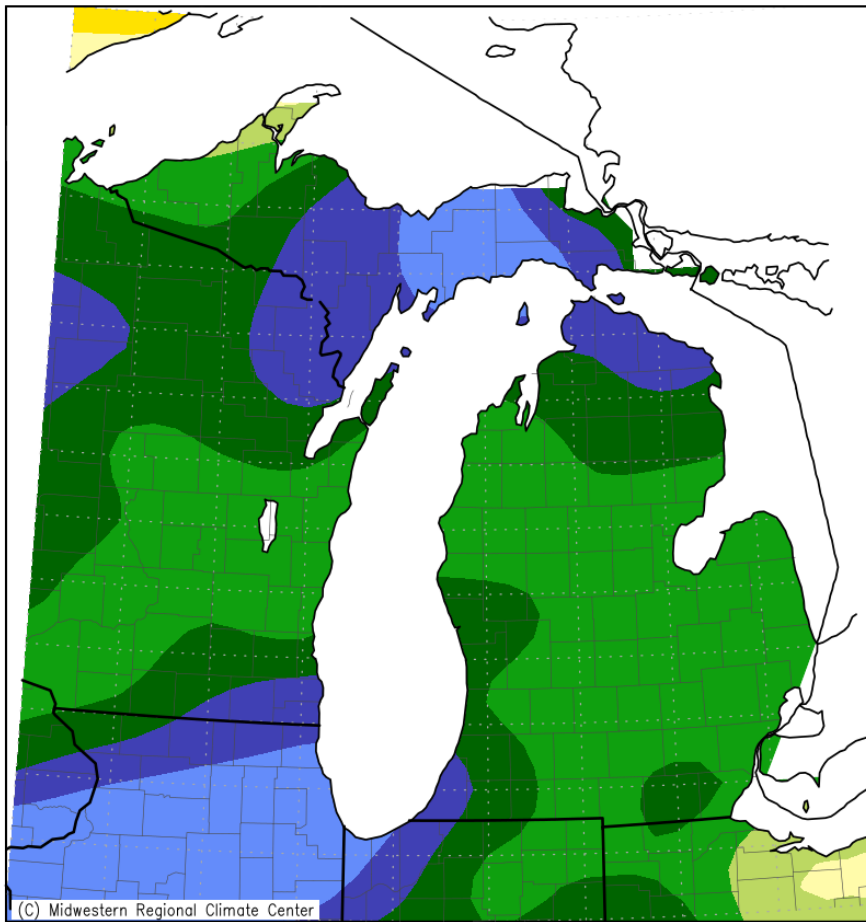
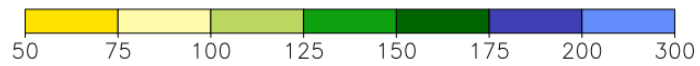


Figure 1. May 2019 Monthly Precipitation Totals

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



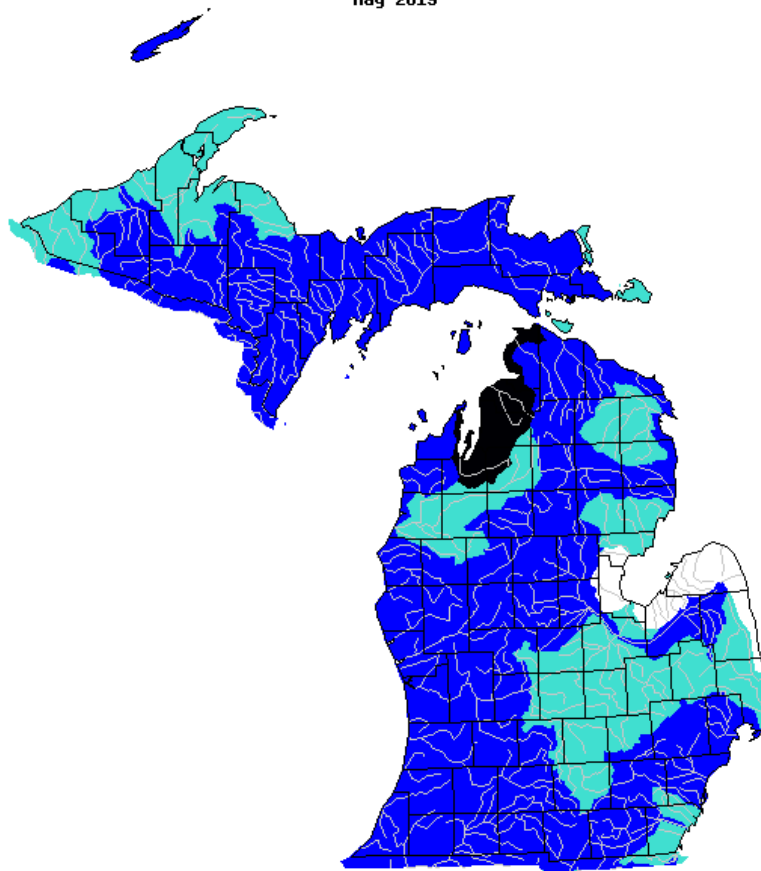
Mean period is 1981–2010.



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Figure 2. May 2019 Percent of Mean of Accumulated Precipitation

May 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 widespread above-average streamflows across Lower Michigan.

### Calculated Soil Moisture Ranking Percentile MAY, 2019

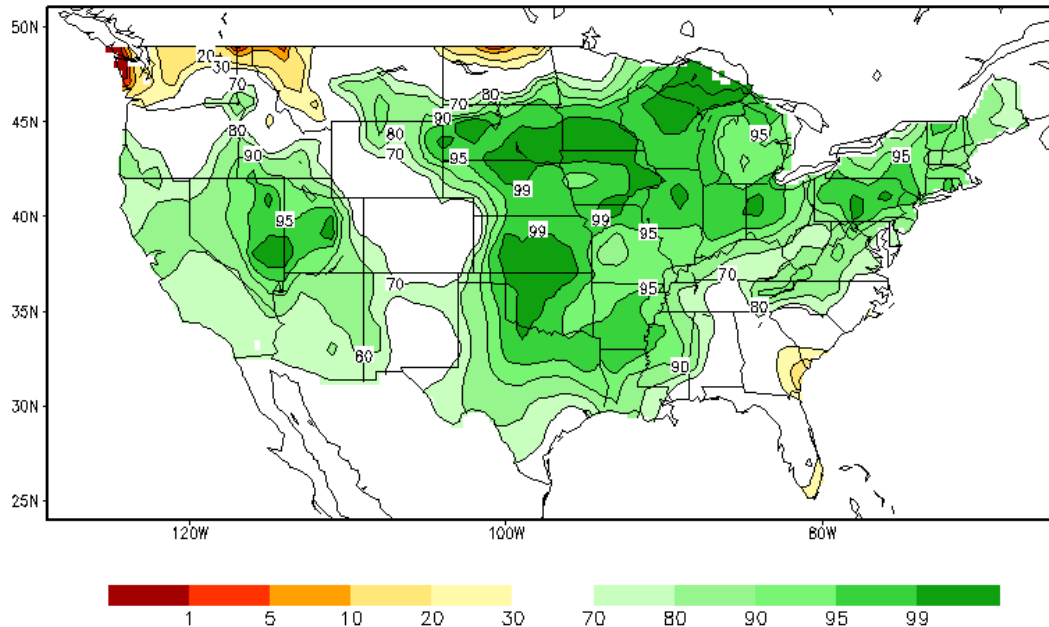


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 8<sup>th</sup> consecutive month West Michigan has been at or above the 80<sup>th</sup>-90<sup>th</sup> percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

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

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

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

<https://www.michiganradio.org/post/many-michigan-farmers-are-plagued-fields-too-wet-plant>

<https://www.detroitnews.com/story/business/2019/05/31/rain-corn-soybean-planting-behind-michigan/121130001/>

<https://www.mlive.com/news/muskegon/2019/05/road-between-whitehall-and-montague-closing-due-to-flooding.html>

