

NWS FORM E-5

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

HSA OFFICE:

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

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

DATE:

May 15, 2020

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

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

April 2020 will go down as a generally cool and dry month for West Michigan, with two main widespread rainmakers moving through the area around April 7 and again in the final week of the month. The April 7 storm caused some minor flooding along the I-96 corridor in Ionia county, which was handled with a flood advisory. The late-month storm was much more complicated, and featured a combination of heavy rain and minor areal flooding, minor river flooding, and a significant lakeshore flooding event, all working together to produce a pretty significant flooding event for parts of Ottawa County. More information is available here:

https://www.weather.gov/grr/04302020_HeavyRain_LakeshoreFlooding

Meanwhile, Lake Michigan rose by about 3 inches during the month of April, setting another new monthly record. This was the fourth consecutive month that new monthly records were set on Lake Michigan-Huron.

Flood Conditions

The river systems started the month above the long-term median flows due to the heavy rain at the end of March, but the dry mid-month period actually allowed streamflows to fall below average until the widespread rain near the end of the month again brought things to much higher values than normal for this time of year. The Muskegon River and White River basins bore the brunt of the month-ending rainfall, and both were briefly pushed above minor flood stage as a result.

Flood Stage Report

The forecast points on the Muskegon River at Newaygo and Bridgeton, as well as the White River near Whitehall and the Grand River at Robinson Township exceeded flood stage during the month. Thus, the NWS Form E-3 "Flood Stage Report" was issued.

River Conditions

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

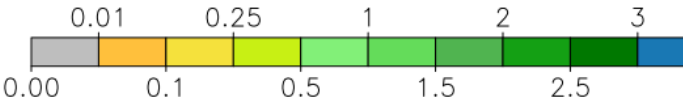
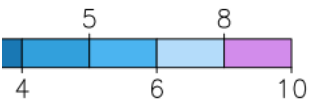
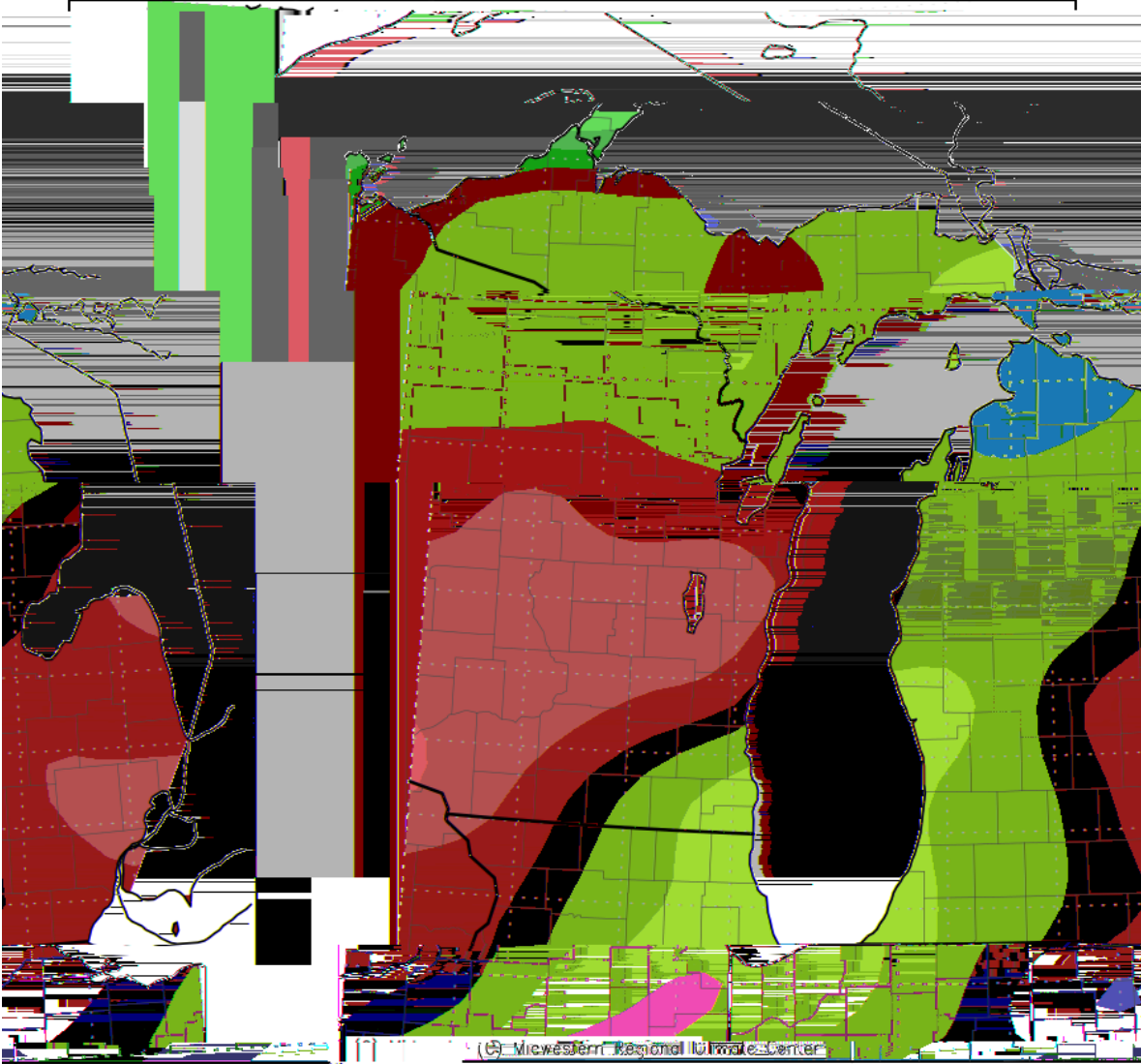
<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	169
Whitehall	White	510
Ewart	Muskegon	174
Mt. Pleasant	Chippewa	259
Lansing	Grand	144
Grand Rapids	Grand	192
East Lansing	Red Cedar	139
Hastings	Thornapple	160
Battle Creek	Battle Creek	122
Battle Creek	Kalamazoo	145

General Hydrologic Information

April precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 4.09, 2.52, and 5.40 inches, respectively (Figure 1). Monthly departures were +0.74, -0.51, and +2.49 inches, respectively. Yearly departures were +2.61, +2.52 and +3.80 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for April 2020 is shown in Figure 2.

Temperatures for the month of April were significantly cooler than normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were -3.8, -3.5, and -2.6 degrees Fahrenheit, respectively.

Accumulated Precipitation (in) April 1, 2020 to April 30, 2020



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Figure 1. April 2020 Monthly Precipitation Totals

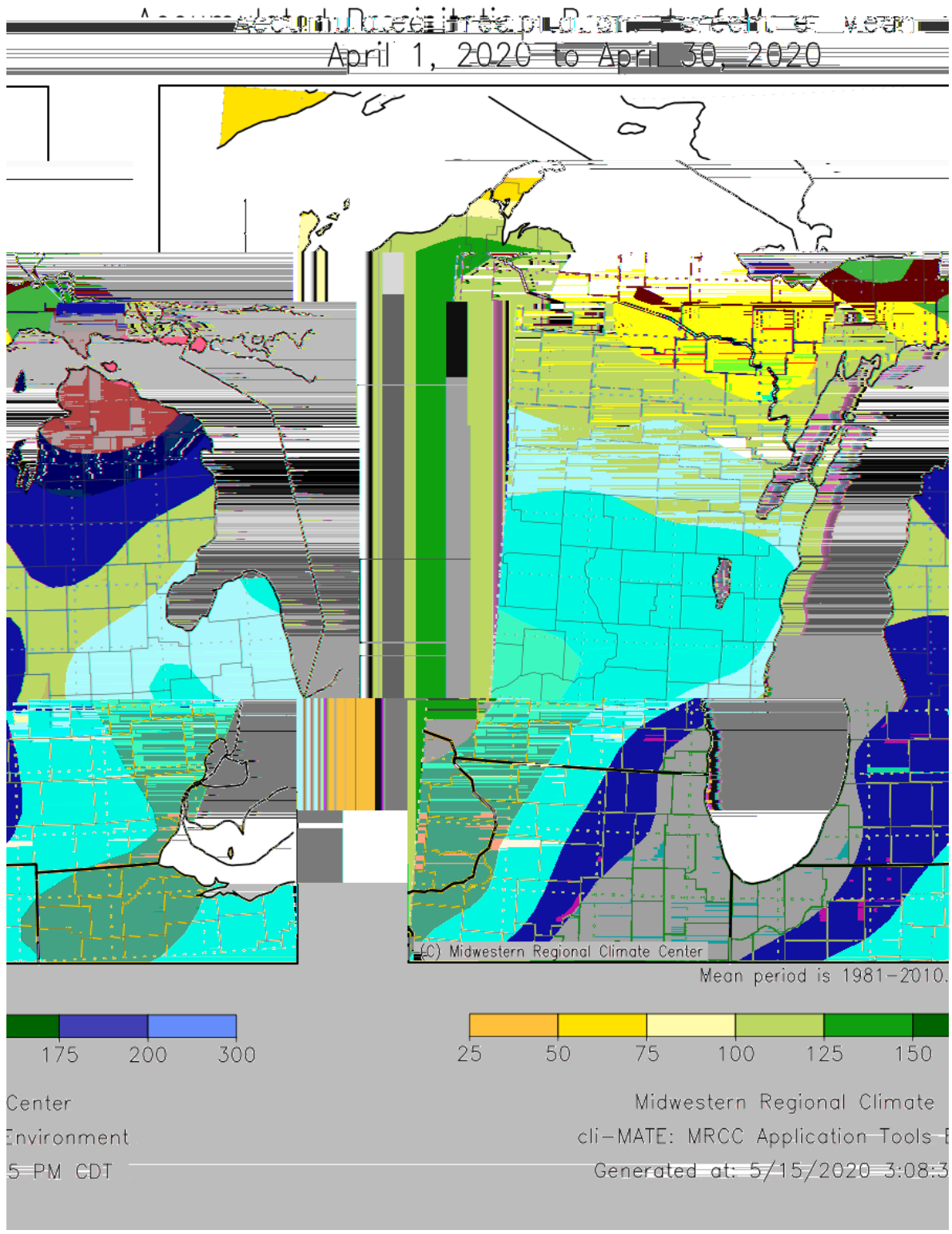
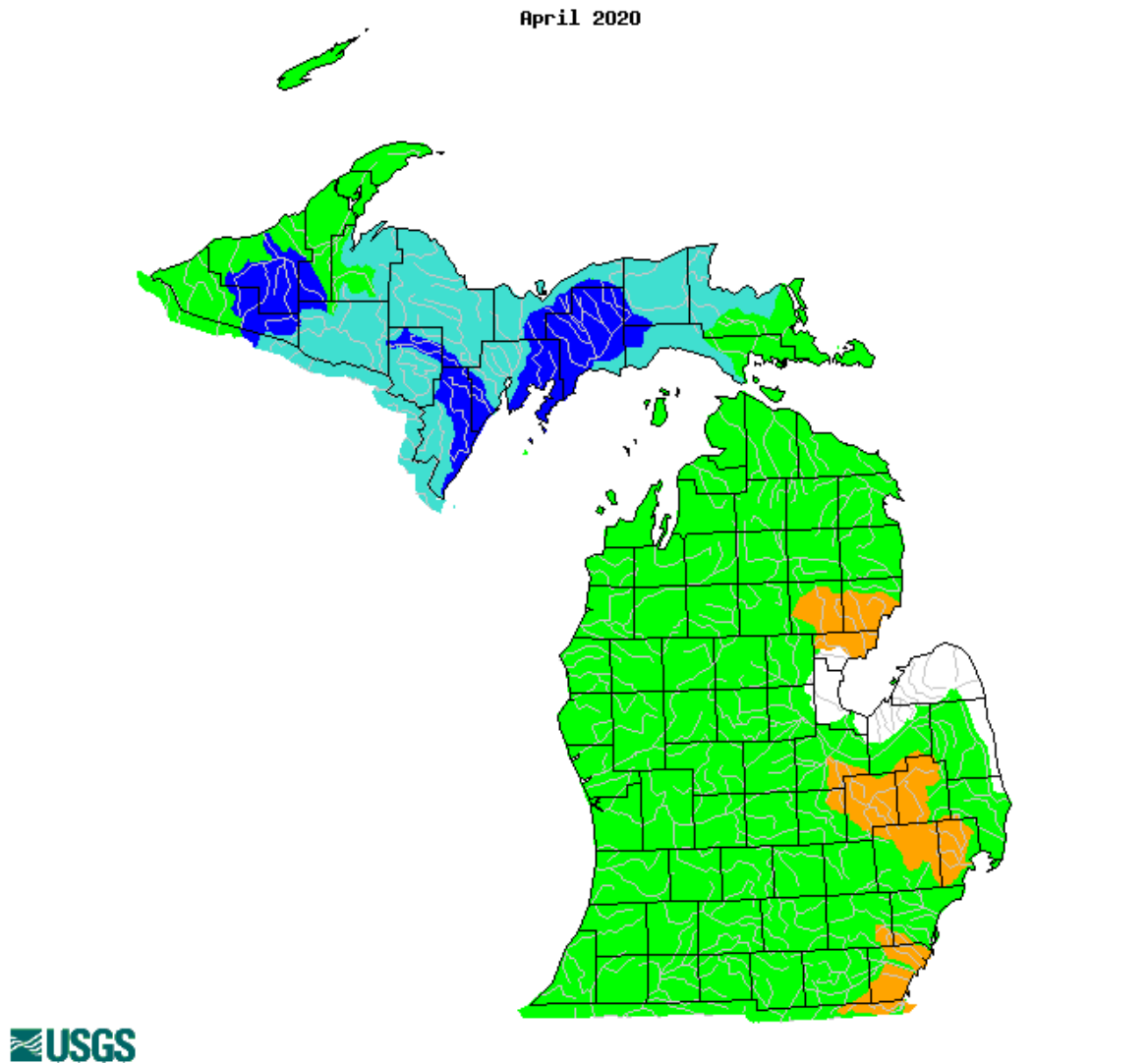


Figure 2. April 2020 Percent of Mean of Accumulated Precipitation.



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 April, grouped by significant hydrologic units. Note streamflows near normal across southern Lower Michigan, trending to more significantly above average over the Upper Peninsula.

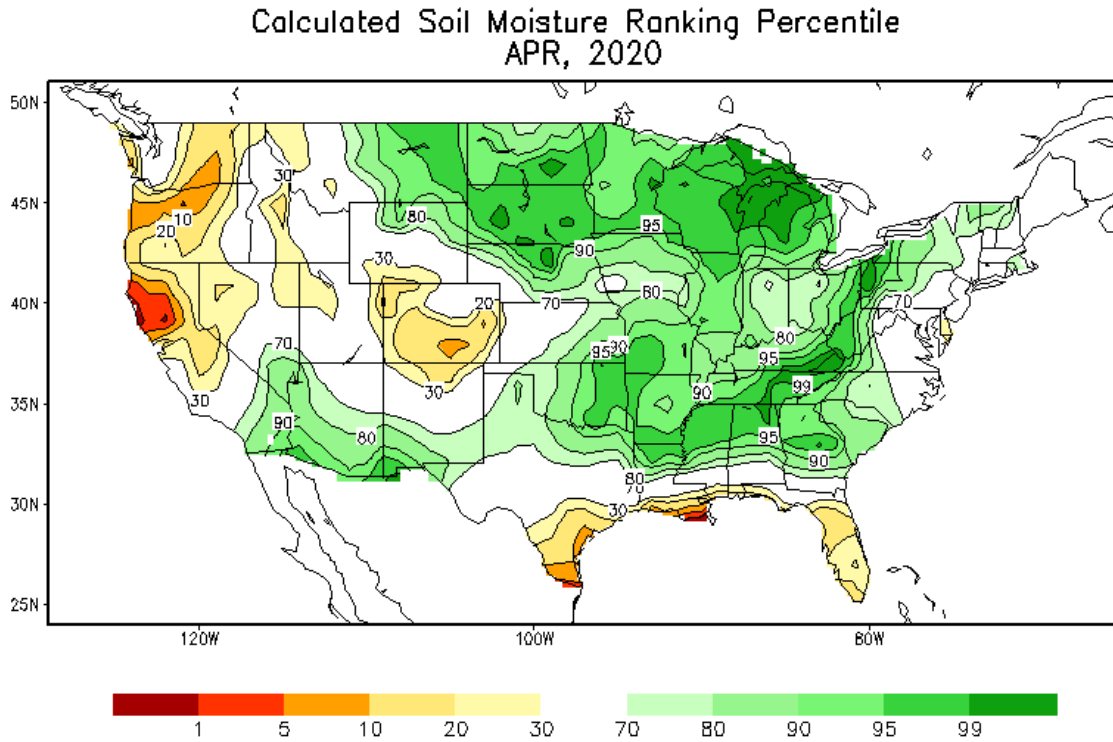


Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This is the 19th consecutive month West Michigan has been at or above the 80th percentile. This saturated ground leads to increased runoff efficiency of rainfall into rivers and streams.

Hydrologic Products issued this month:

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

News Articles and Related Documentation

https://www.weather.gov/grr/04302020_HeavyRain_LakeshoreFlooding

<https://www.fox17online.com/news/coronavirus/south-haven-marinas-streets-continue-to-flood-after-recent-heavy-rain>

<https://www.mlive.com/news/muskegon/2020/04/heavy-rains-cause-flooding-in-lakeshore-communities.html>

<https://whtc.com/news/articles/2020/apr/30/lakeshore-flooding-in-south-haven-april-29-2020/1012849/>