

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):
April 2022

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

DATE:
May 13, 2022

SIGNATURE:
Richard Wagenmaker, 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 flooding occurred within this hydrologic service area.

Summary

April 2022 was a very cloudy, cool, and wet month in West Michigan. The wet pattern that took hold in March continued with very little change most of the way through April - so while temperatures remained fairly steady, our normal temperatures for this time of the year are increasing quickly, so this led to our cooler than normal spring conditions. Thankfully the rain storms were spread out enough to avoid any significant river flooding, but it definitely kept water levels high throughout the month, especially in the Grand and Muskegon River basins.

Once again, Consumers Energy was able to use the winter drawdown capacity at Hardy Dam to hold back a bit of the water early in the month and avoid flooding in the lower portions of the river.

Flood Conditions

The Muskegon River started the month near the 90th percentile flow for this time of year, and stayed near that same level through the several rain events in the first half of the month, before finally dropping toward the 75th percentile (still above average) by the end of the month. A similar story played out in the Grand River basin, where virtually the entire month was spent between the 75th and 90th percentile flows (above average). The most pronounced rise was during the final week of the month when 1-2 inches of rain fall in many parts of the basin and resulted in a pronounced rise on the tributaries as well as the mainstem Grand River. This same rainstorm on April 22 led to Sycamore Creek briefly going above flood level by a few inches. Meanwhile, the Kalamazoo River basin was a bit more moderate throughout the month, and spent the first 3 weeks at

pretty typical levels for this time of year (50th percentile) before a pronounced rise up to the 90th percentile during that same storm during the final week.

Flood Stage Report

The forecast point on Sycamore Creek near Holt exceeded flood stage. 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:

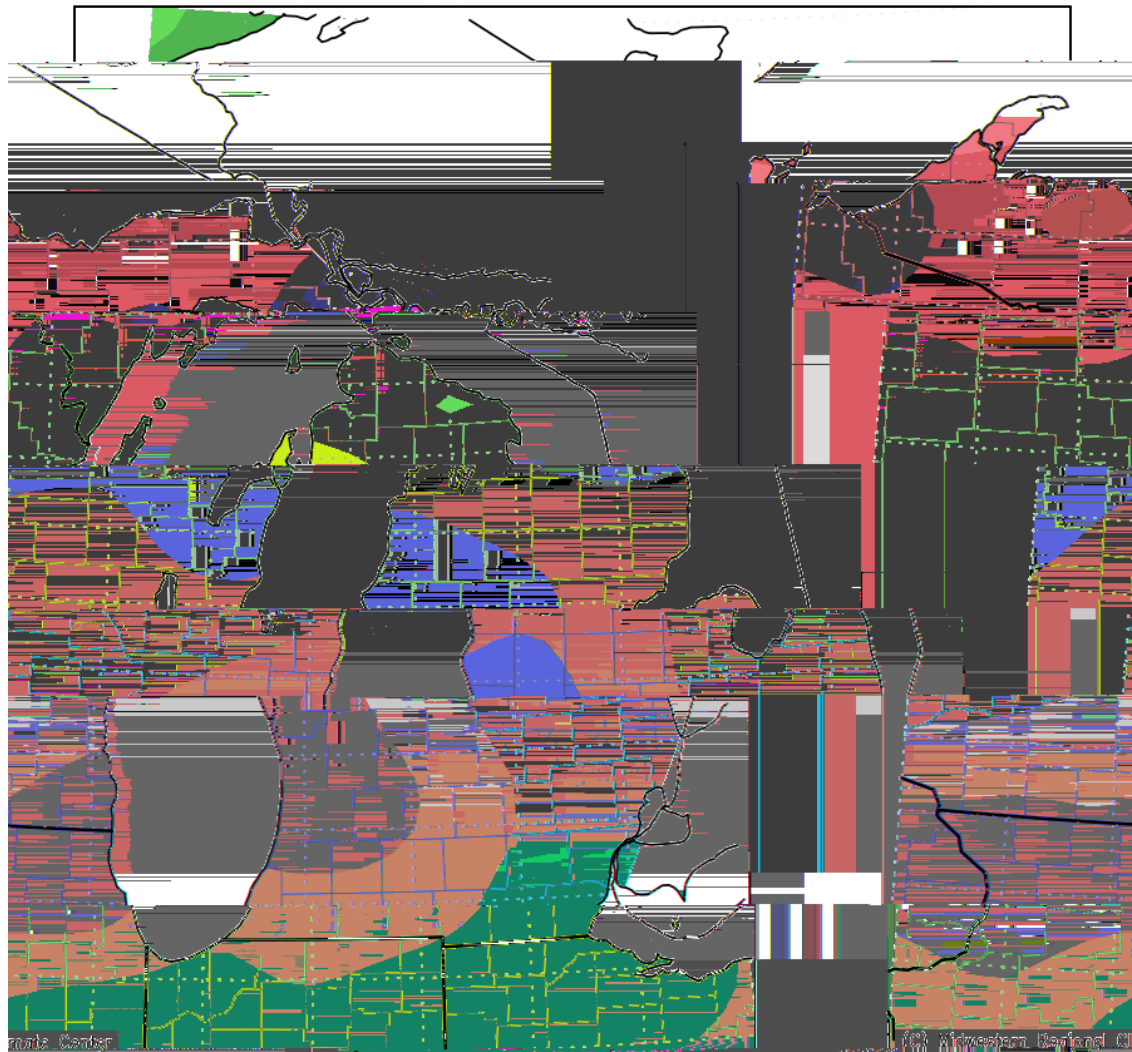
<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	105
Whitehall	White	108
Ewart	Muskegon	112
Mt. Pleasant	Chippewa	119
Lansing	Grand	163
Grand Rapids	Grand	184
East Lansing	Red Cedar	164
Hastings	Thornapple	218
Battle Creek	Battle Creek	182
Battle Creek	Kalamazoo	151

General Hydrologic Information

April precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 5.19, 3.53, and 4.94 inches, respectively (Figure 1). Monthly departures were +1.20, +0.27, and +1.47 inches, respectively. Yearly departures were +3.30 +1.72 and +1.34 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for April 2022 is shown in Figure 2.

Temperatures for the month of April at Grand Rapids, Lansing and Muskegon were well below normal. The monthly average temperature departures for these sites were -4.0, -1.2, and -2.7 degrees Fahrenheit, respectively.

Accumulated Precipitation (in)
April 1, 2022 to April 30, 2022



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 5/13/2022 9:27:10 AM CDT

Figure 1. April 2022 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean

April 1, 2022 to April 30, 2022

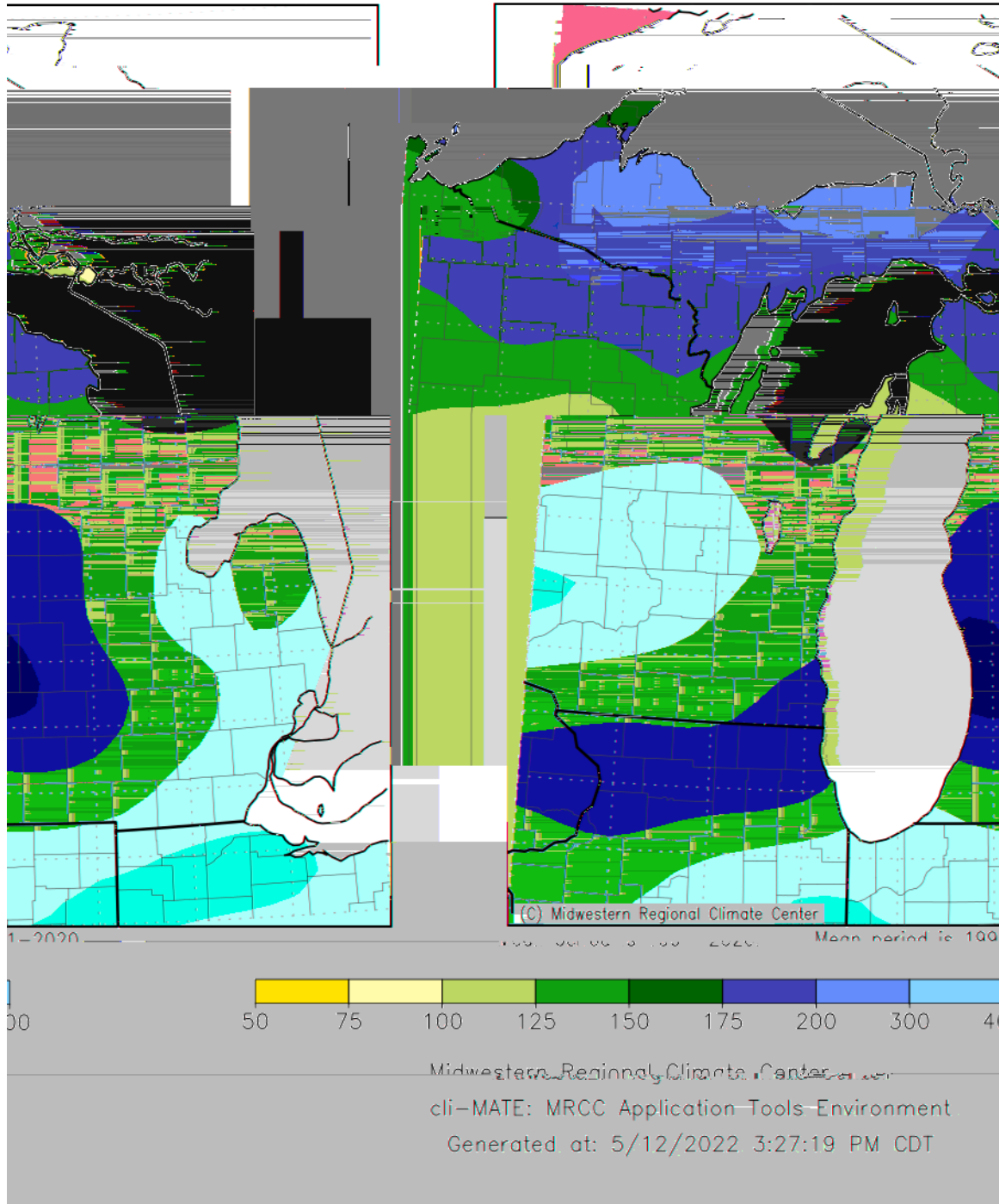
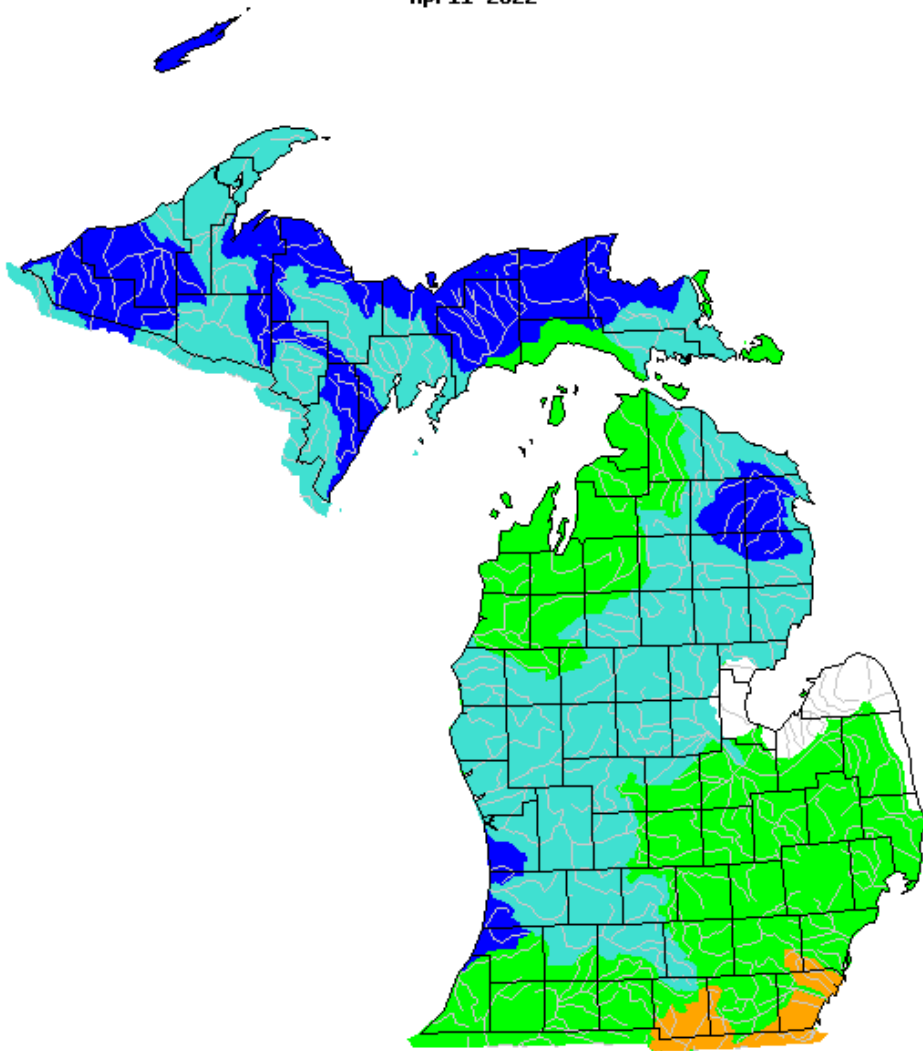


Figure 2. April 2022 Percent of Mean of Accumulated Precipitation.

April 2022



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 to above average across most of Lower Michigan for this time of year.

Calculated Soil Moisture Ranking Percentile
APR, 2022

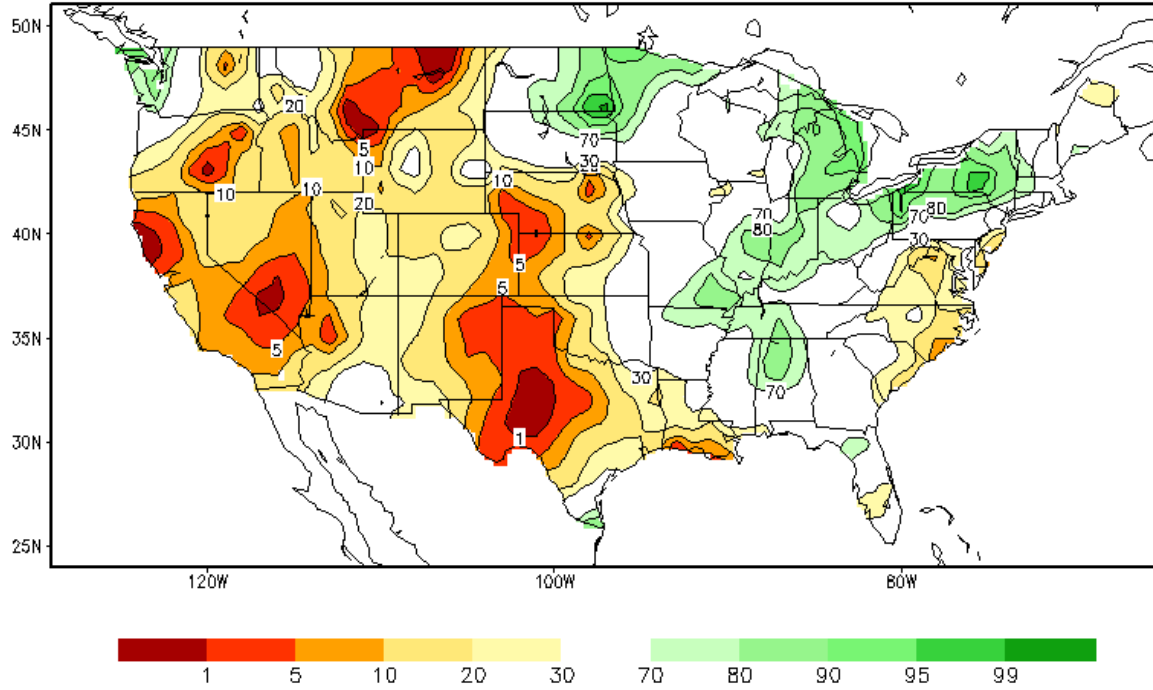


Figure 4. Chart of monthly values of soil moisture, by percentile ranking.

Hydrologic Products issued this month

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

News Articles and Related Documentation

None