

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):
January 2022

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

DATE:
February 11, 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

Classic winter conditions moved into Lower Michigan in the last week of December, and stuck around for pretty much all of January. A significant regional storm in the first week of the month dropped more than half of the months snowfall in West Michigan, with most of the rest of the month primarily cold and dry. No significant thaws occurred during the month, so the snow that fell largely stuck around. Snowfall ended up fairly close to normal for most locations except in the upper half of the Muskegon River basin where less snow than normal fell. As a result, the winter snowpack at the end of January was pretty typical over the Grand and Kalamazoo basins, but below average in the Muskegon basin.

Temperatures were definitely cold enough to form a lot of ice on the rivers in West Michigan. Thankfully, the freeze-up process was gradual enough that we did not have any issues associated with freeze-up ice jams. By the end of the month, most parts of the Grand and Muskegon River were covered with a stable ice cover. Attention now turns to the inevitable spring melt, and the potential for breakup ice jams.

Flood Conditions

Until the last week of December, most of the snow that fell melted and moved through the river systems, which is a bit unusual for this time of year. This kept the major rivers in West Michigan at above-average values as we headed into the start of January. Once the cold and relatively dry (from a snow water equivalent standpoint) set in, all the river levels began to drop. The Muskegon River started January near normal values, but by the end of the month was well below normal (near the 10th percentile flow for the

end of January). Meanwhile, the Grand and Kalamazoo Rivers both started the month with slightly above-average amounts of water, but steadily dropped throughout the month and ended January at slightly below-normal levels.

Flood Stage Report

No forecast points exceeded flood stage. Thus, the NWS Form E-3 “Flood Stage Report” was not 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	N/A - Ice Covered
Whitehall	White	N/A - Ice Covered
Evart	Muskegon	N/A - Ice Covered
Mt. Pleasant	Chippewa	N/A - Ice Covered
Lansing	Grand	74
Grand Rapids	Grand	N/A - Ice Covered
East Lansing	Red Cedar	80
Hastings	Thornapple	73
Battle Creek	Battle Creek	94
Battle Creek	Kalamazoo	92

General Hydrologic Information

January precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 1.43, 0.65, and 1.47 inches, respectively (Figure 1). Monthly departures were -1.09, -1.41, and -0.95 inches, respectively. Yearly departures were -1.09, -1.41 and -0.95 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for January 2022 is shown in Figure 2.

Temperatures for the month of January at Grand Rapids, Lansing and Muskegon were well below normal. The monthly average temperature departures for these sites were -4.6, -3.2, and -3.4 degrees Fahrenheit, respectively.

Accumulated Precipitation (in)

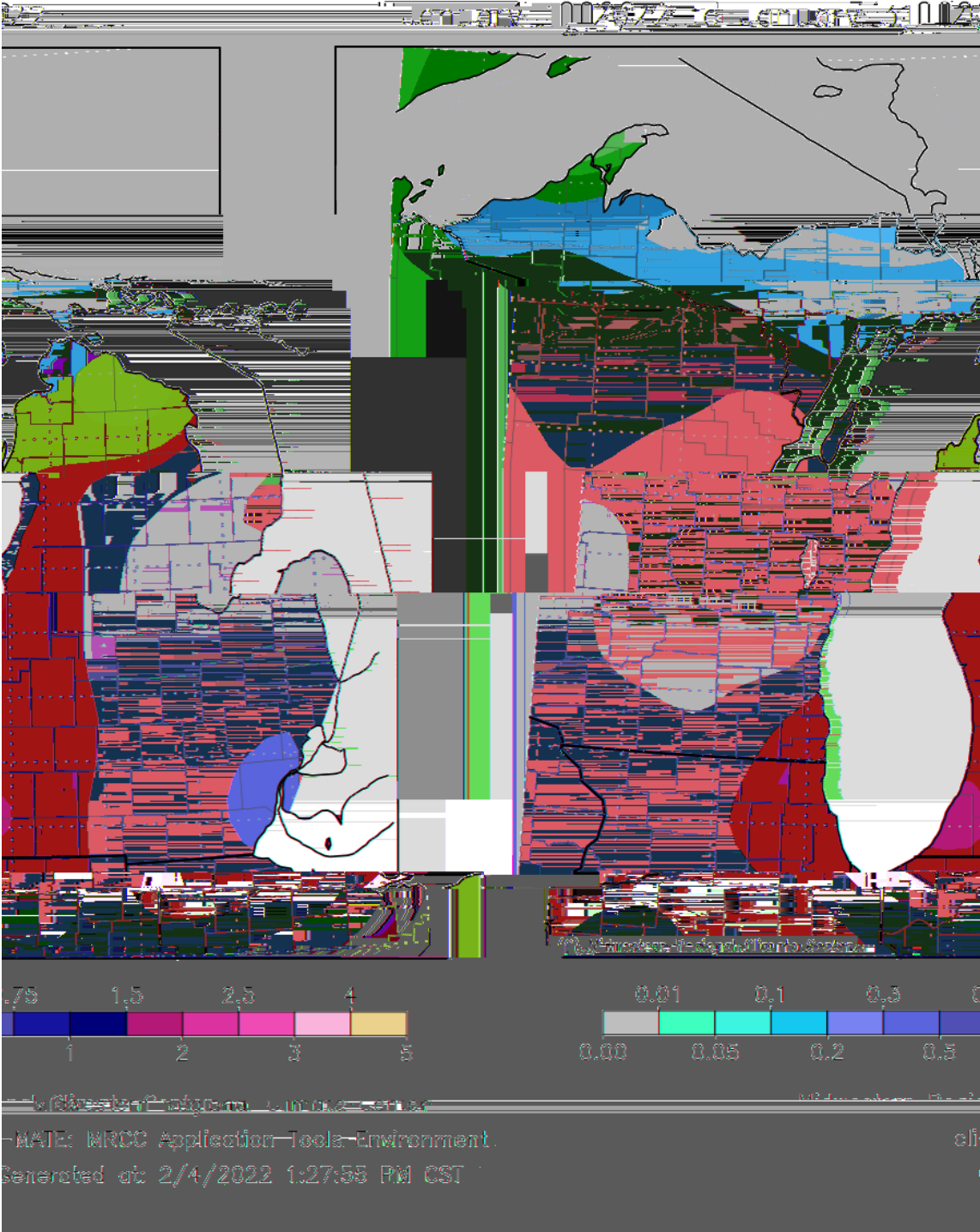
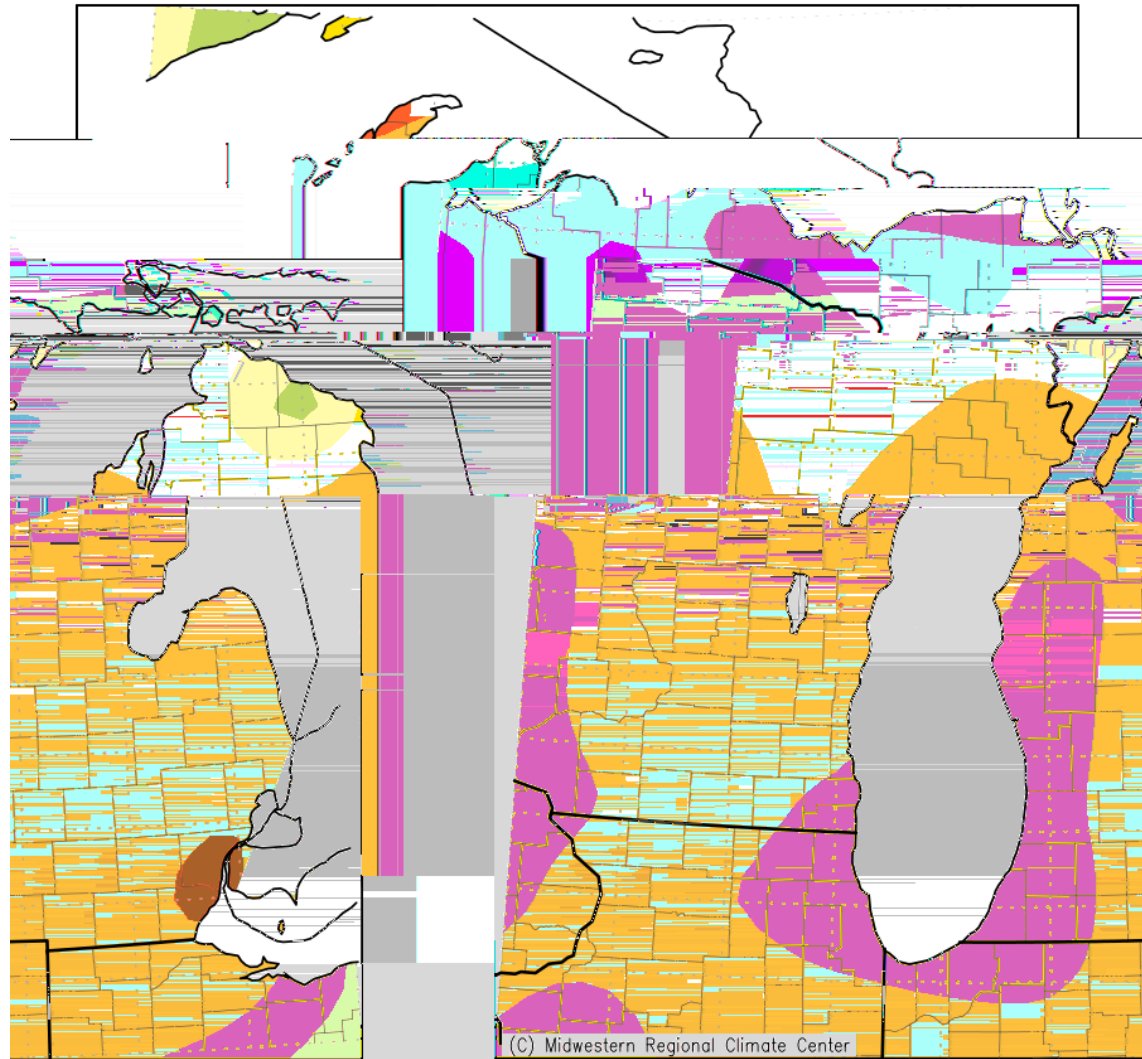


Figure 1. January 2022 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean
January 1, 2022 to January 31, 2022



Mean period is 1991–2020.

25 150 175 200

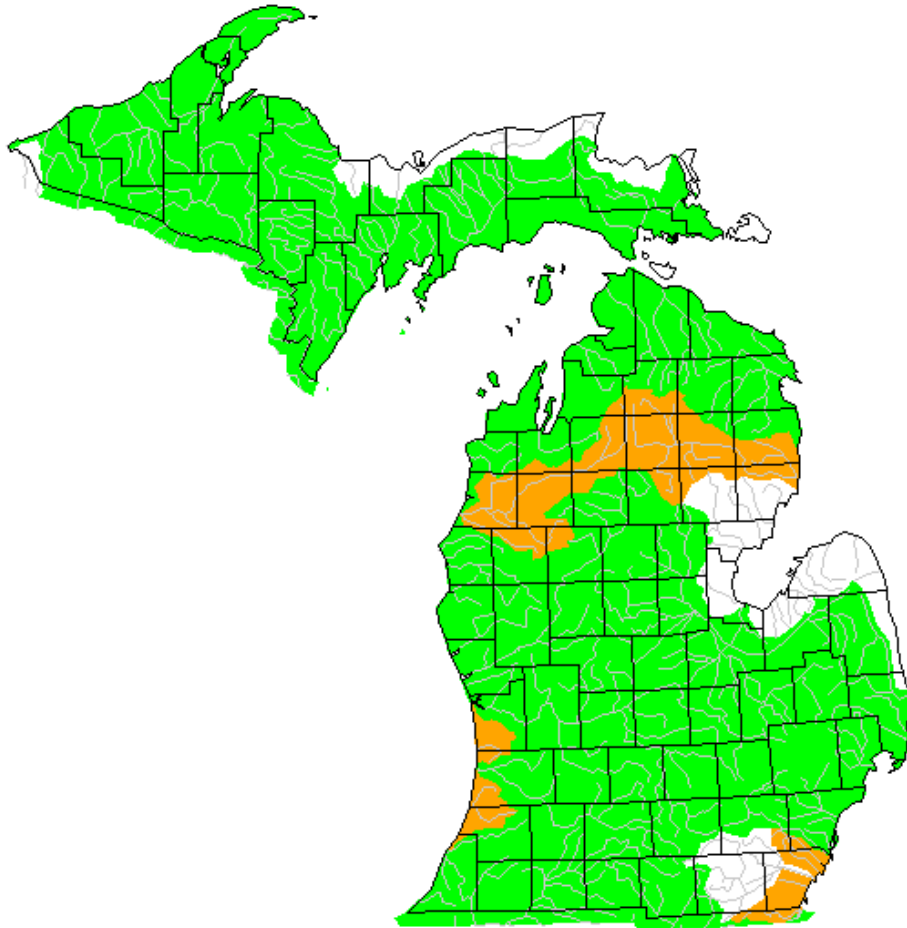
5 10 25 50 75 100 125

Center
Environment
7 PM CST

Midwestern Regional Climate
cli-MATE: MRCC Application Tools
Generated at: 2/4/2022 1:28:21

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

January 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 January, grouped by significant hydrologic units. Note streamflows across Lower Michigan generally near average for this time of year.

Calculated Soil Moisture Ranking Percentile JAN, 2022

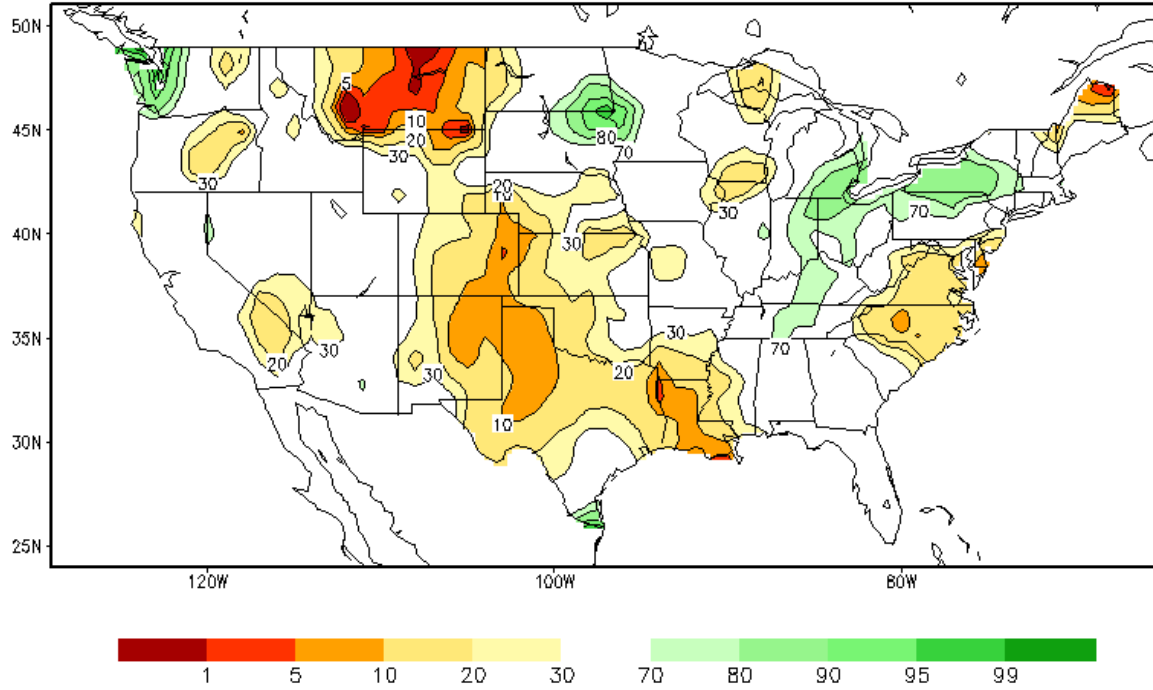


Figure 4. Chart of monthly values of soil moisture, by percentile ranking.

Hydrologic Products issued this month

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

News Articles and Related Documentation

None