

NWS **U.S. Department of Commerce**
FORM NOAA, NATIONAL WEATHER SERVICE
E-5

HSA OFFICE:
Grand Rapids, MI

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

REPORT FOR
(MONTH & YEAR):
February 2024

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

DATE:
March 7th, 2024

SIGNATURE:
Joe Ceru,
Meteorologist

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

February, 2024 began the month with well above normal flows and several points above flood stage. The month ended with most rivers having flows at or below normal. February had almost an inch below normal in precipitation at most locations. The only major precipitation event was on the 15th. Temperatures were historically above normal with it being the warmest February on record at multiple climate sites. The snowpack has already melted and flood risk is much lower than normal.

Flood Conditions

The month began with several forecast points above flood stage. Comstock Park on the Grand River began the month at the minor flood stage of 12.71ft and dropped below flood stage Saturday February 3rd, 2024. Maple Rapids on the Maple River began the month at the minor flood stage of 9.2 ft. It dropped below flood stage Saturday afternoon February 3rd, 2024. River flows and levels continued to drop throughout the month. While several minor rises occurred due to small rain events the trend continued downward with flows ending around normal at most locations with only the Red Cedar and Battle Creek with above normal flows.

The winter snowpack as a whole was late to start, quick to melt, and never really got that deep. With water levels on the river already lower than normal for this time of year, and the fact that we've already melted our entire snowpack, spring flood risks will be almost completely tied to future heavy rain events. Overall the flood risk is much lower than normal.

Flood Stage Report

Forecast points on the Grand and Maple Rivers and Sycamore Creek exceeded flood stage during the month. Thus, the NWS Form E-3 “Flood Stage Report” was issued.

River Conditions

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

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	85
Whitehall	White	83
Evert	Muskegon	108
Mt. Pleasant	Chippewa	97
Lansing	Grand	100
Grand Rapids	Grand	79
East Lansing	Red Cedar	152
Hastings	Thornapple	100
Battle Creek	Battle Creek	104
Battle Creek	Kalamazoo	127

General Hydrologic Information

February precipitation amounts for Grand Rapids, Lansing, and Muskegon Michigan were 0.74, 0.93 and 0.59 inches, respectively (Figure 1). Monthly departures were -1.38, -0.78 and -1.52 inches respectively. Percent of mean precipitation for January 2024 is shown in Figure 2. Grand Rapids had 5.8 inches of snowfall total for the month, which is 11.4 inches below normal. Lansing had 1.9 inches of snowfall which is 11 inches below normal. Muskegon had 6.1 inches of snowfall which is 13.9 inches below normal

Temperatures for the month of February were historically above normal at Grand Rapids, Lansing and Muskegon. It was the warmest February on record (125+ years) The monthly average temperature departures for these sites were +8.8, +9.4 and +9.1 Fahrenheit, respectively.

Accumulated Precipitation (in)
February 1, 2024 to February 29, 2024

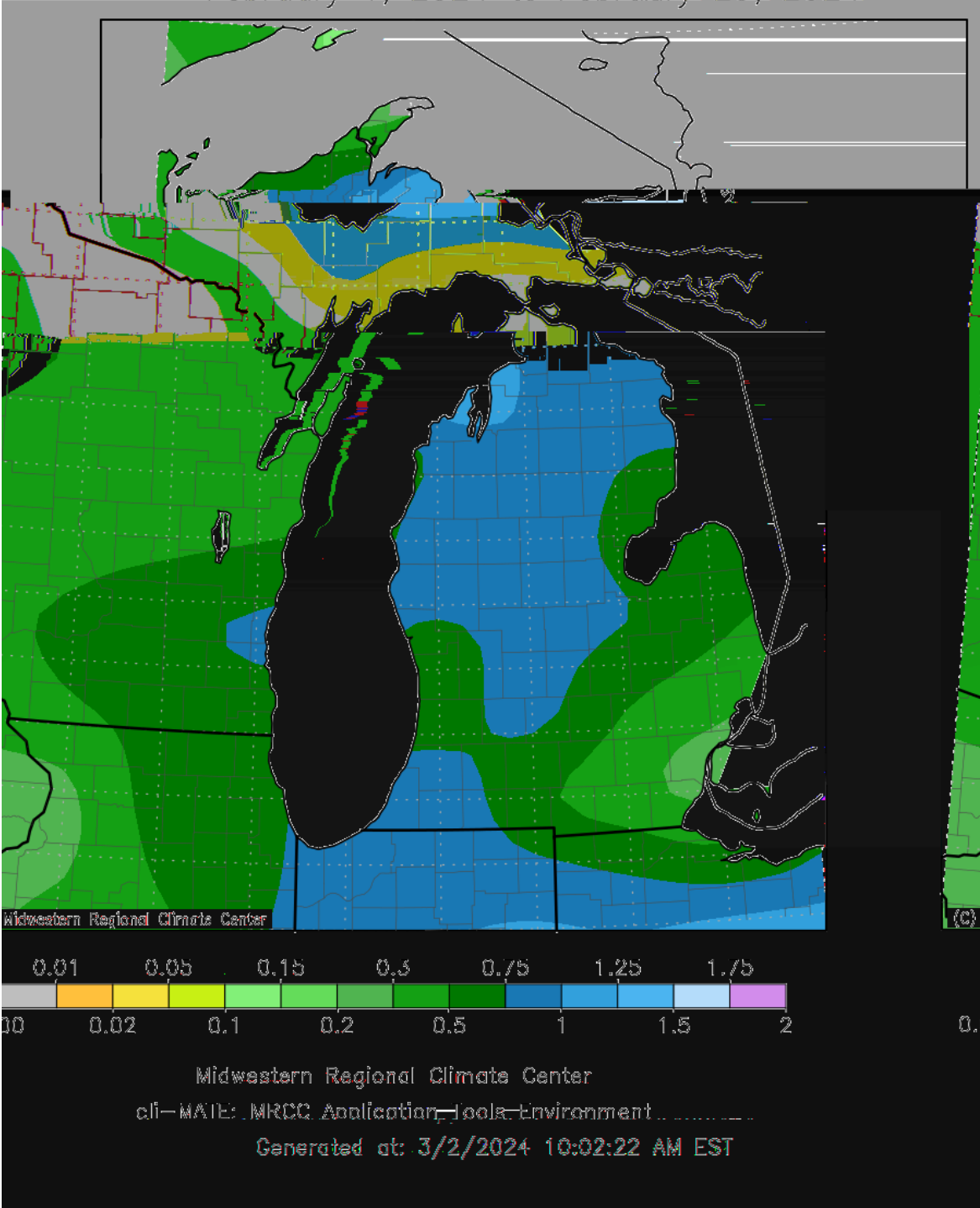


Figure 1. February 2024 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean February 1, 2024 to February 29, 2024

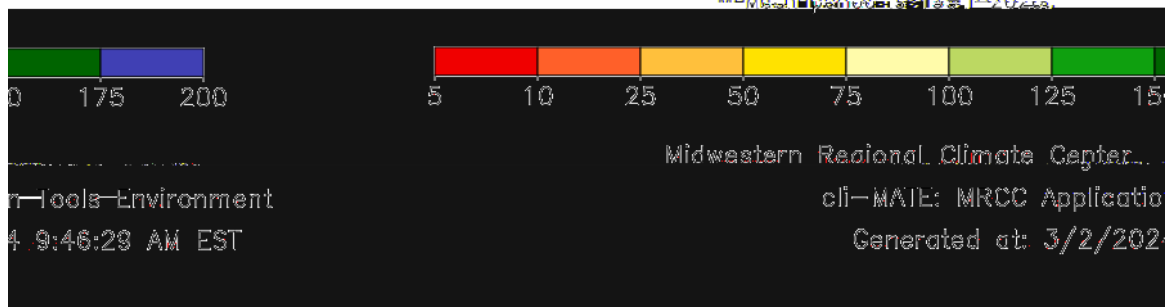
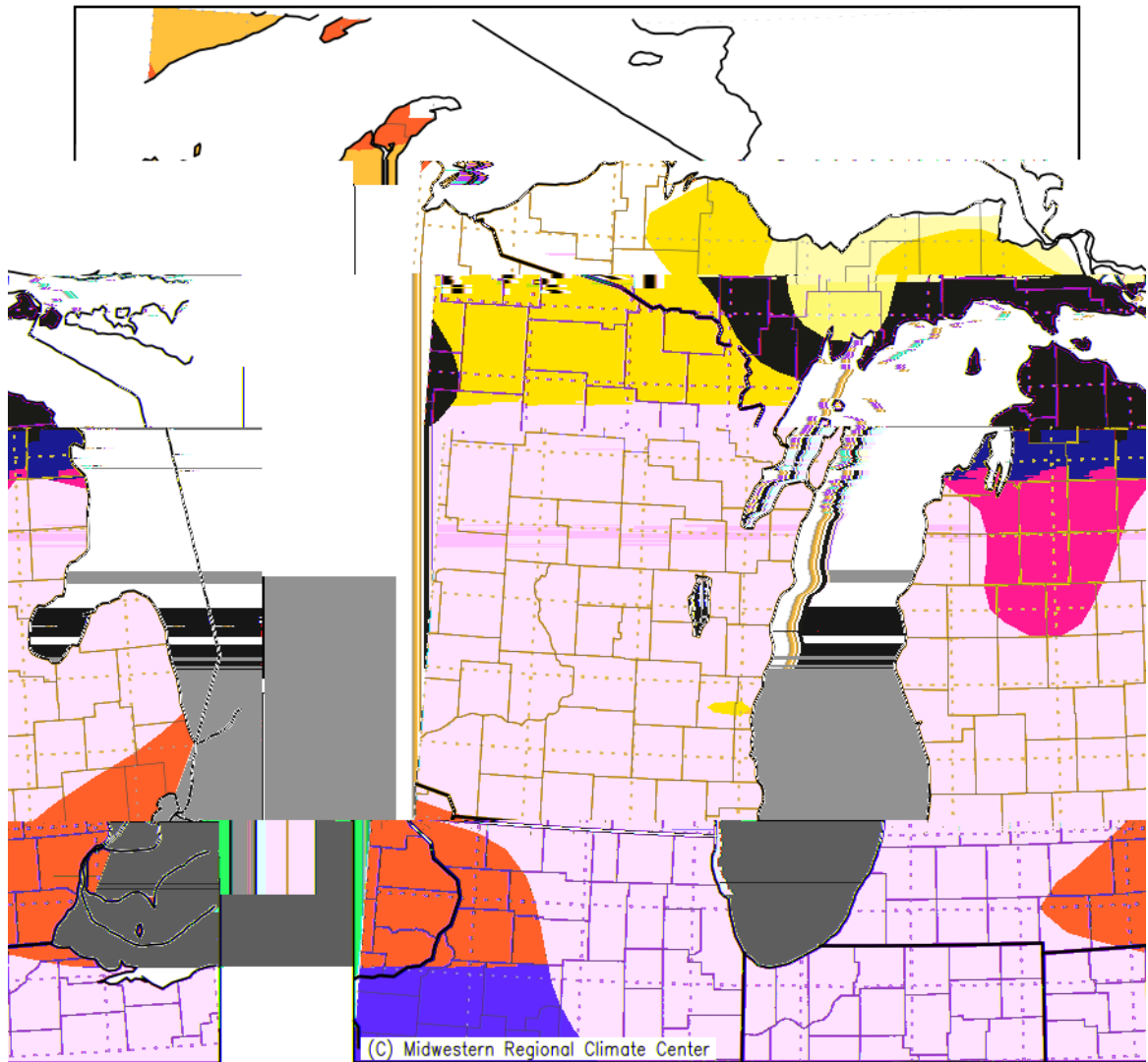
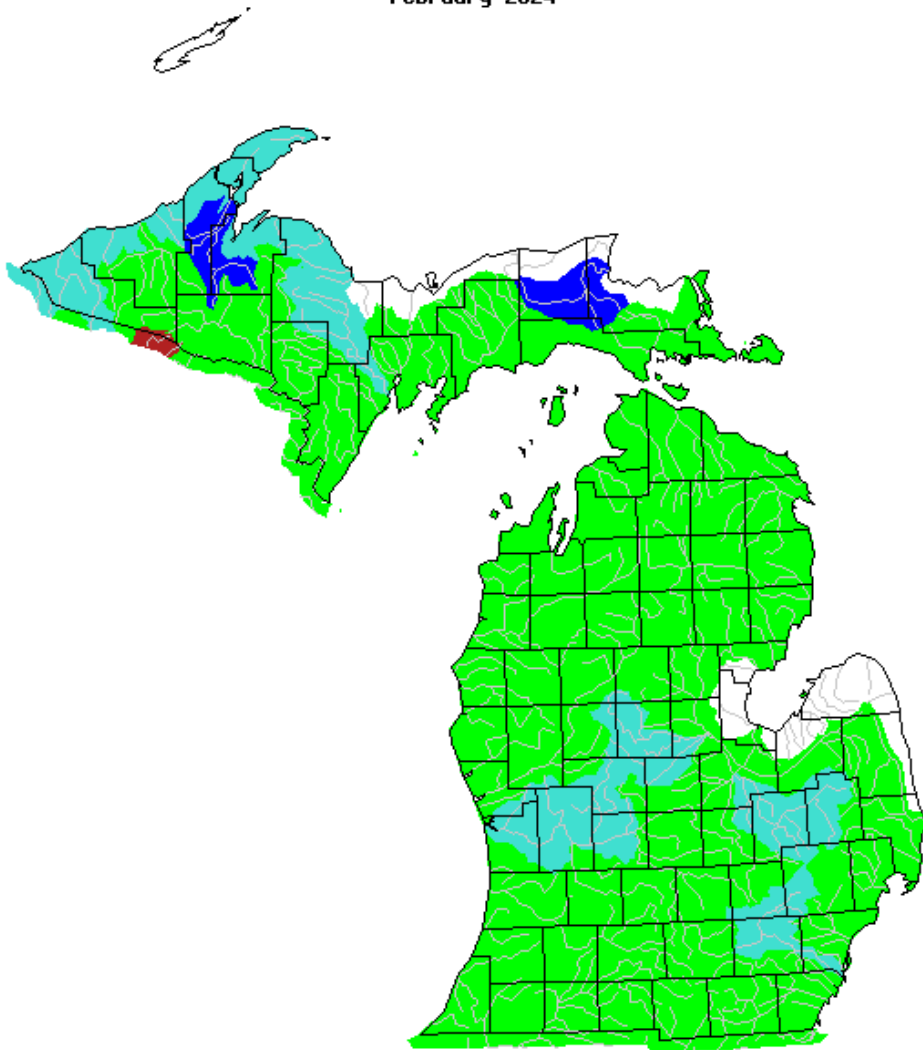


Figure 2. February 2024 Percent of Mean of Accumulated Precipitation.

February 2024



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 streamflow for February, grouped by significant hydrologic units. All of the Lower peninsula is at or above normal with the Grand River Basin above normal.

Calculated Soil Moisture Ranking Percentile FEB, 2024

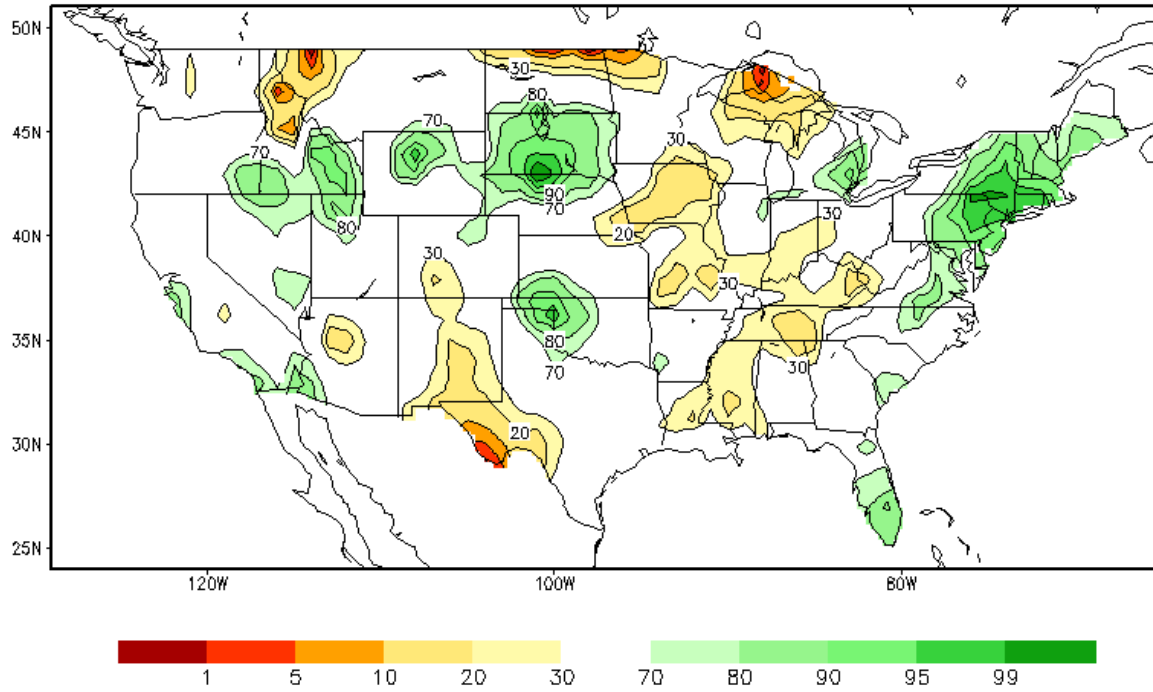
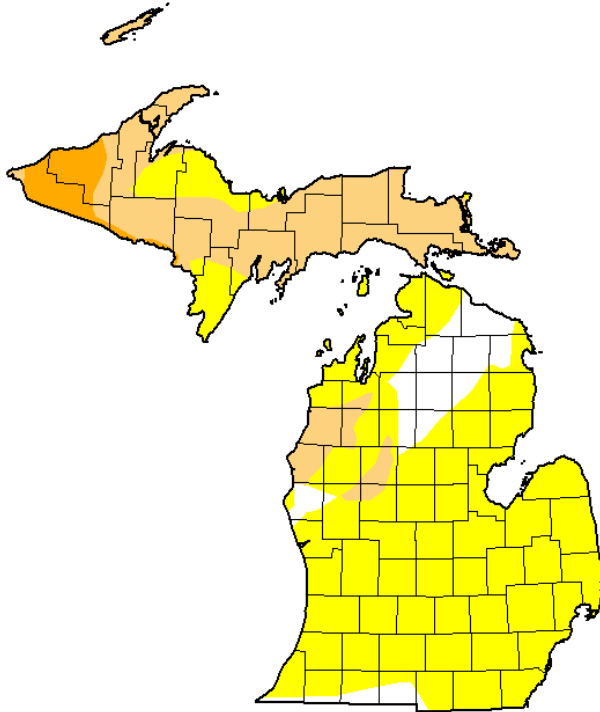


Figure 4. Calculated Soil Moisture Percentile for February, 2024. This supports conditions becoming more normal through much of lower Michigan.

U.S. Drought Monitor Michigan

March 5, 2024
(Released Thursday, Mar. 7, 2024)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	8.79	91.21	27.40	3.54	0.00	0.00
Last Week 02-27-2024	4.31	95.69	30.52	3.21	0.00	0.00
3 Months Ago 12-05-2023	63.32	36.68	5.40	1.20	0.00	0.00
Start of Calendar Year 01-02-2024	41.22	58.78	6.70	1.20	0.00	0.00
Start of Water Year 09-26-2023	65.01	34.99	4.96	1.31	0.00	0.00
One Year Ago 03-07-2023	83.45	16.55	10.91	0.00	0.00	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

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National Drought Mitigation Center



droughtmonitor.unl.edu

Figure 5. U.S. Drought Monitor showing abnormal dry area across Lower Michigan with a D1 Moderate Drought in and around the Ludington and Cadillac regions

Hydrologic Products issued this month

- 31 Hydrologic Summaries (ARBRVAGRR)
- 0 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 0 Event-driven Hydrologic Outlook (ARBESFGRR1)
- 0 Areal Flood Advisory Statements (ARBFLSGRR)
- 2 Flood Warning Statements (ARBFLWGRR)
- 0 Flood Watch Statements (ARBFFAGRR)
- 0 River Statements (ARBRVSGRR)

News Articles and Related Documentation