

**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

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

REPORT FOR
(MONTH & YEAR):
January 2024

DATE:
February 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

January, 2024 was hallmarked by flooding along multiple rivers. This flooding was caused by several snowfall and rain events and ice jams. The month had several days with heavy snowfall. There was a large snowstorm from the 12th through the 14th that was followed by lake effect snowfall later that week. The middle of the month brought a cold spell that allowed for rapid ice development. The last nine days of the month brought a warmer period that allowed over an inch and a half of rain. That rain coupled with the melting snow caused flooding along the Grand River, Red Cedar and Maple River. The month ended with Comstock Park along the Grand River and Maple Rapids along the Maple River above minor flood stage.

Flood Conditions

Several forecast points along multiple rivers went above minor flood stage. The month had several contributing factors for flooding. The first was a several day snowstorm followed by lake effect snowfall. Grand Rapids had over 31 inches of snowfall total for the month and Lansing had 18.1 inches of snowfall. The bulk of all the snow occurred through the first 20 days of the month before the late month thaw. After the heavy snow events there was a polar air mass that settled over the region that dropped temperatures to lows in the negatives and highs in the teens for a week. That allowed for river ice build up.

A big contributing factor for flooding was the amount of Snow Water Equivalent or SWE. The SWE measured at the Grand Rapids office was approximately between 1.45 to 2.10 inches. The 26th January rain brought 0.83 inches to Grand Rapids. The Grand River saw this snowmelt/rainfall and ice jam combo cause several points to go above flood stage.

Jackson briefly went above flood stage. The warm spell through the latter half of the month coupled with the rain/snowmelt and ice jams to cause flooding. In downtown Portland MI along the Grand River ice jams caused two streets to be flooded. As the water moved downstream, Comstock Park along the Grand River saw flooding due to water from both snowmelt and rainfall that worked down the river systems. The crest was 12.73 ft at the end of the month. The river crested and slowly went down below flood stage in February.

Maple River at Maple Rapids saw rainfall/snowmelt cause minor flooding with a crest of 9.49 feet on Jan 30th. As you can see below the end of January saw a drastic rise of % of normal with the Kalamazoo and Grand rivers having over 300% normal flows at the end of the month. All rivers were well above normal flows.

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 January percentage of normal flow for selected rivers is listed below:

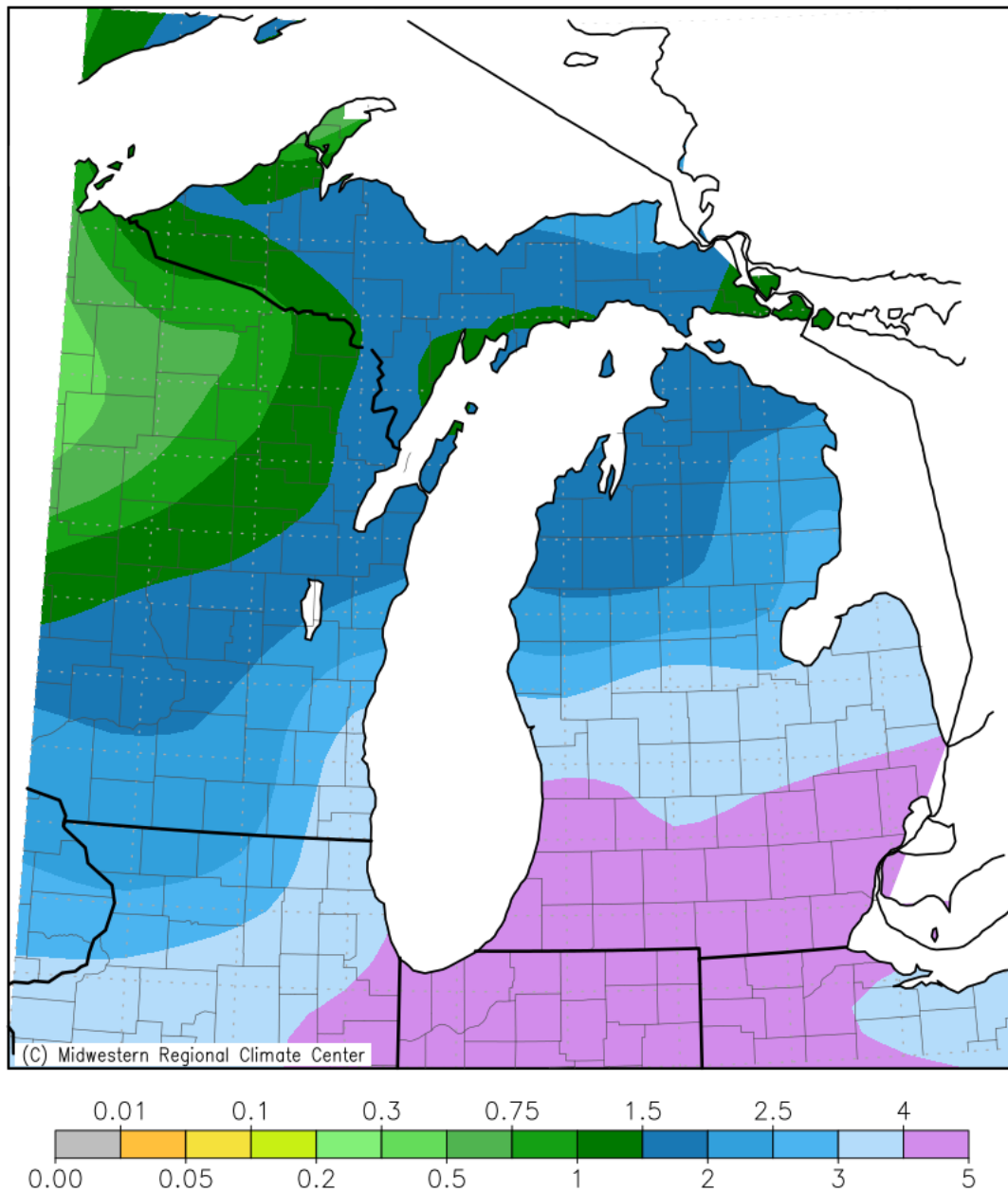
<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	117
Whitehall	White	159
Evart	Muskegon	125
Mt. Pleasant	Chippewa	220
Lansing	Grand	538
Grand Rapids	Grand	550
East Lansing	Red Cedar	920
Hastings	Thornapple	720
Battle Creek	Battle Creek	609
Battle Creek	Kalamazoo	367

General Hydrologic Information

January precipitation amounts for Grand Rapids, Lansing, and Muskegon Michigan were 4.62, 3.43 and 3.22 inches, respectively (Figure 1). Monthly and Yearly departures were +2.10, 1.37, and +0.80 inches respectively. Percent of mean precipitation for January 2024 is shown in Figure 2. Grand Rapids had over 31 inches of snowfall total for the month, which is 8.7 inches above normal. Lansing had 18.1 inches of snowfall with 3.8 inches above normal.

Temperatures for the month of January were above normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were +2.3, +2.3 and +4.1 Fahrenheit, respectively.

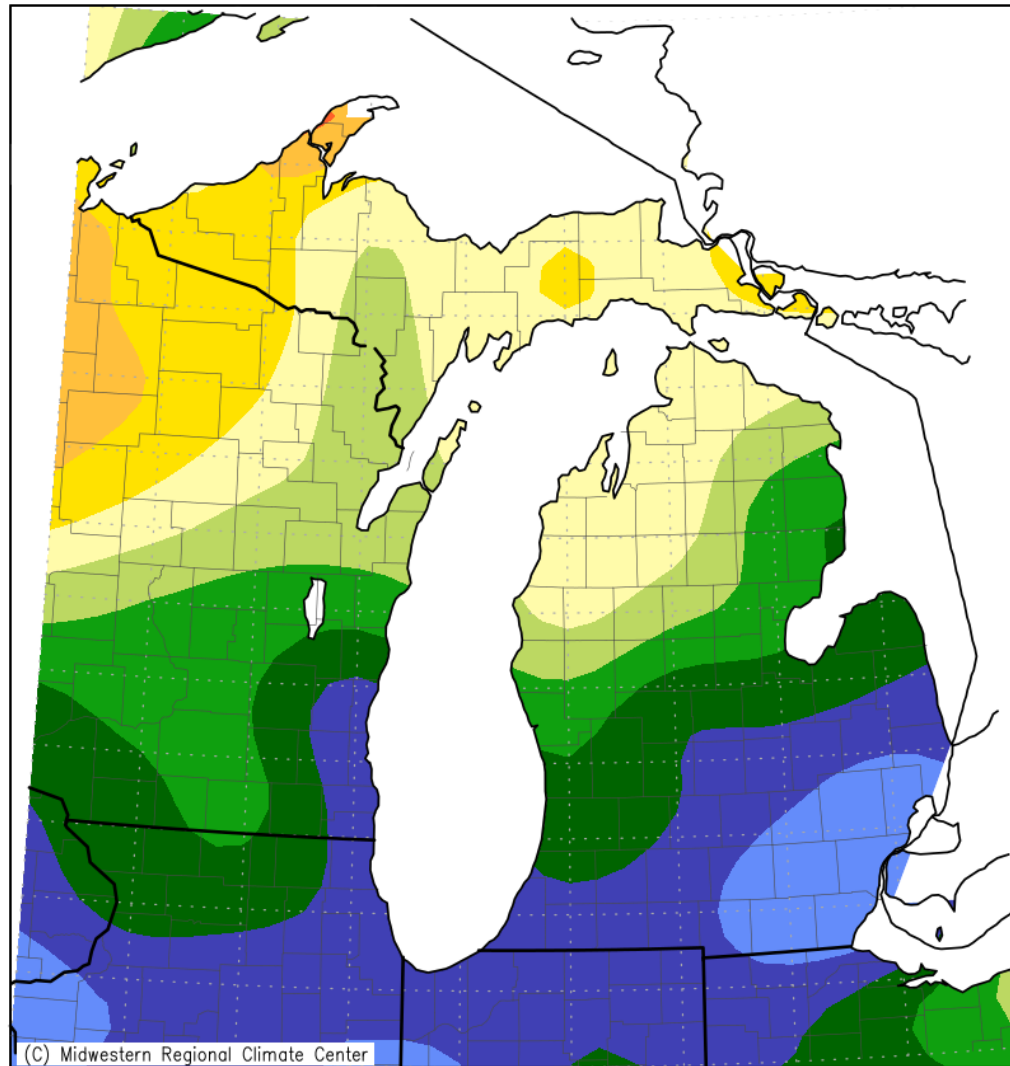
Accumulated Precipitation (in)
January 1, 2024 to January 31, 2024



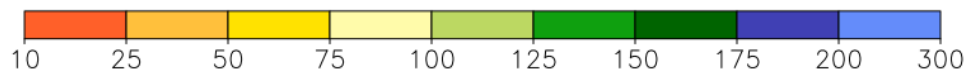
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 2/3/2024 5:11:00 AM EST

Figure 1 January 2024 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean
January 1, 2024 to January 31, 2024



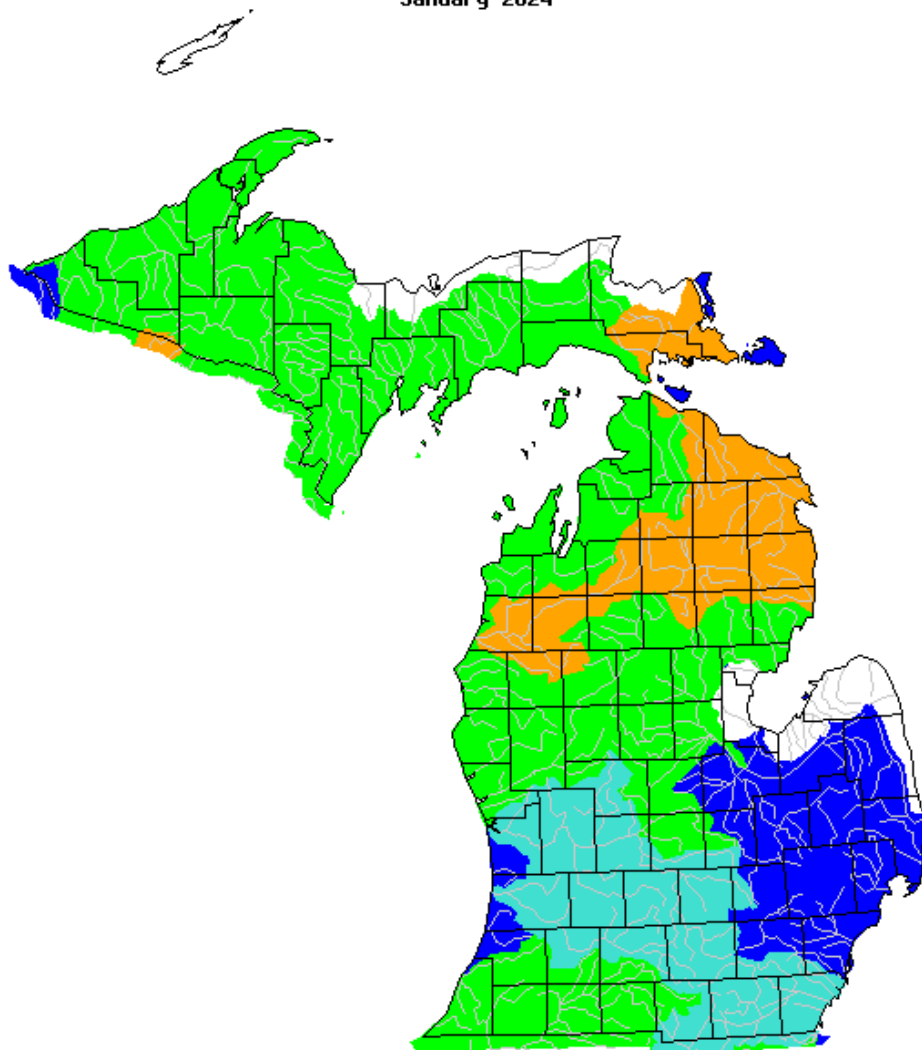
Mean period is 1991–2020.



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
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Figure 2 January 2024 Percent of Mean of Accumulated Precipitation.

January 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 January, grouped by significant hydrologic units Much of northern lower Michigan remains below normal. Several basins through central and eastern Michigan are much above normal to high.

Calculated Soil Moisture Ranking Percentile
JAN, 2024

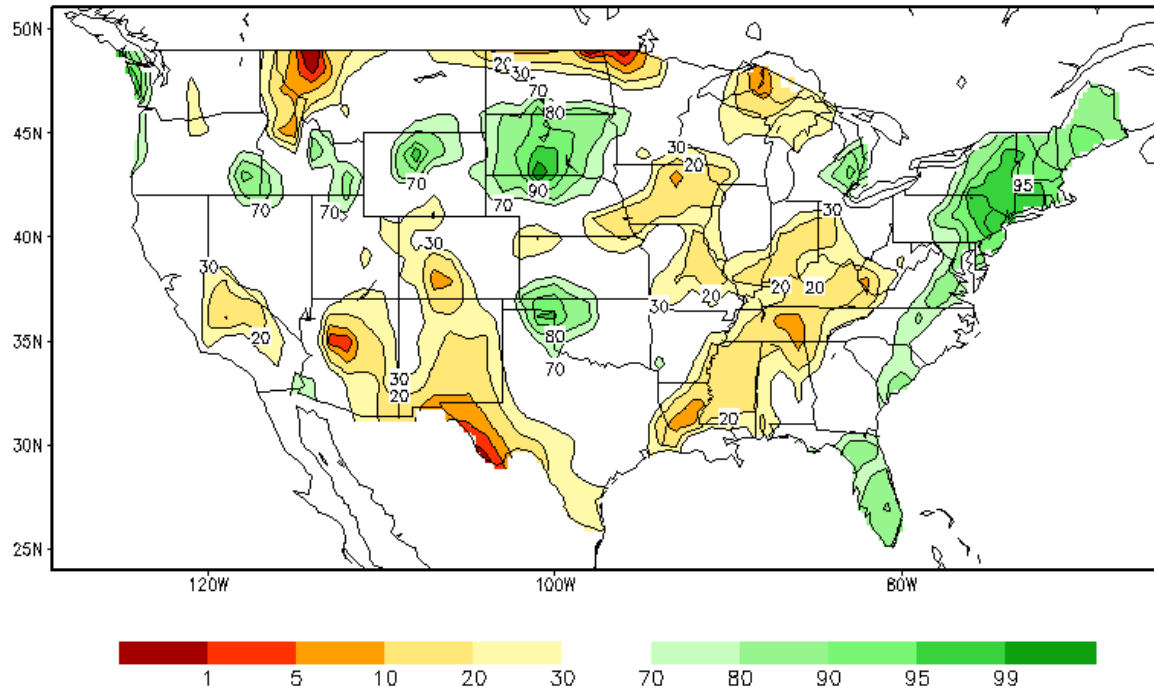


Figure 4. Calculated Soil Moisture Percentile for January, 2024. This supports conditions becoming more normal through much of lower Michigan.

U.S. Drought Monitor Michigan

January 30, 2024

(Released Thursday, Feb. 1, 2024)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	44.65	55.35	12.06	1.20	0.00	0.00
Last Week 01-23-2024	48.18	51.82	5.40	1.20	0.00	0.00
3 Months Ago 10-31-2023	76.92	23.08	6.43	1.31	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 01-31-2023	56.43	43.57	30.55	9.67	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:

Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu

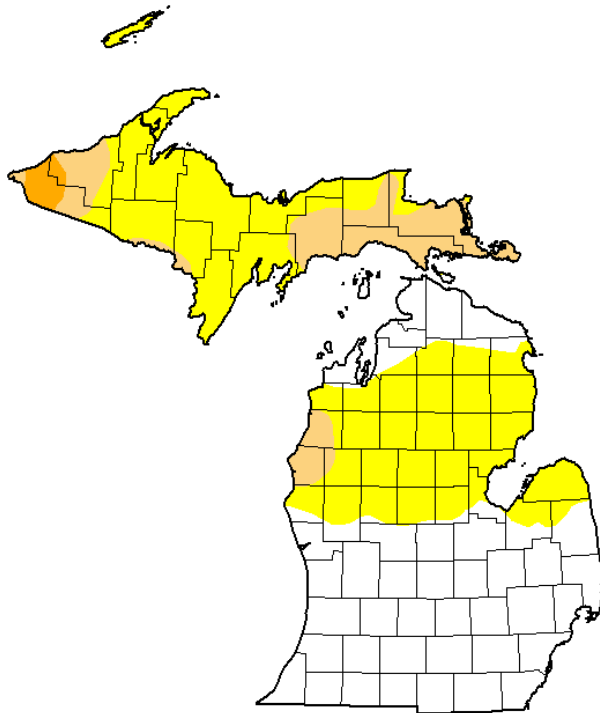


Figure 5.U.S. Drought Monitor showing abnormal dry area across Central Michigan with a moderate drought along the corresponding lakeshore.

Hydrologic Products issued this month

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

News Articles and Related Documentation

[Flood Warning for City of Portland, MI](#)

[Grand River Ice Jam at Portland, MI](#)

[Families continue to Struggle after Portland, MI flood](#)

[Flooding in Kent County](#)