

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):
October 2024

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

DATE:
November 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

The dry trend from September continued through October. The rivers began the month with around normal flows. However by the end of the month all forecast points ended with below normal flows. There was one precipitation event on the 12-13th that brought brief rises to the rivers, though no flooding occurred. Drought conditions continued to spread with most of western Michigan ending in a D0 to D1 drought.

Flood Conditions

The biggest story for the month is the lack of precipitation. The rivers began the month with around normal flows. However by the end of the month all forecast points ended with below normal flows. There was one precipitation event on the 12-13th that brought brief rises to the rivers, though no flooding occurred. The highest precipitation for the month was along the Kalamazoo River basin, which fell on October 12th-13th. That event brought a rise to the Kalamazoo River that peaked briefly above normal flow. The rest of the river basins flows ended the month in the lower quartiles with Kalamazoo remaining in the Normal range. While the Grand River ended the month in below normal flow it did so just barely. The bottom end of normal flow is 1,570 cfs and Grand Rapids on the Grand River ended the month at 1,440 cfs.

Flood Stage Report

No forecast points exceeded flood stage during the month. Thus, the NWS Form E-3 "Flood Stage Report" was not issued.

River Conditions

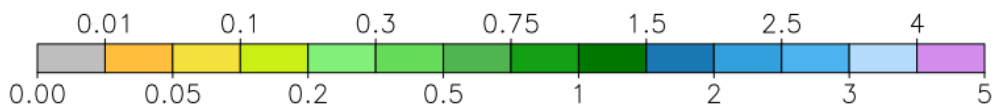
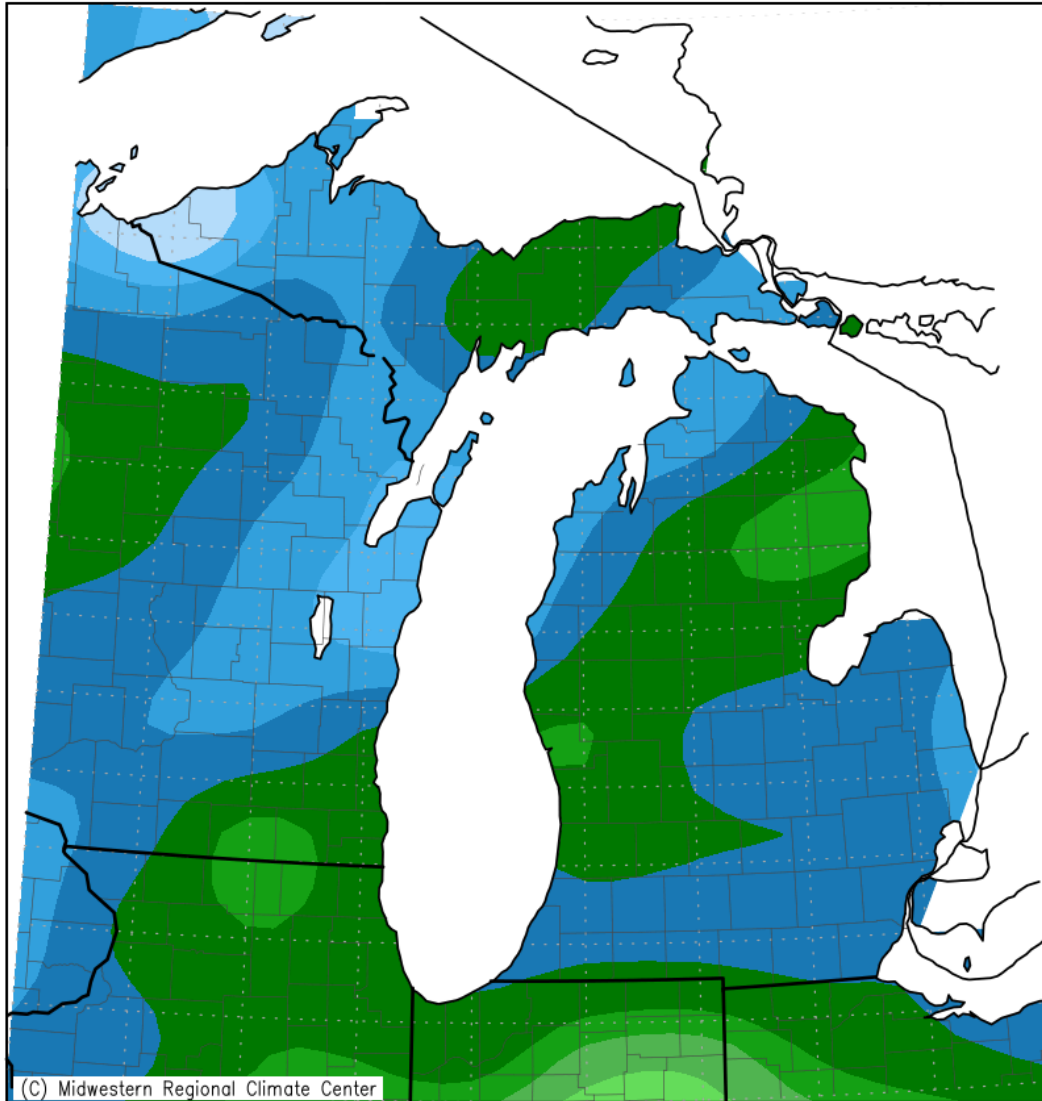
The end of October percentage of normal flow for selected rivers is listed below:

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	83
Whitehall	White	79
Ewart	Muskegon	58
Mt. Pleasant	Chippewa	93
Lansing	Grand	90
Grand Rapids	Grand	73
East Lansing	Red Cedar	71
Hastings	Thornapple	66
Battle Creek	Battle Creek	61
Battle Creek	Kalamazoo	81

General Hydrologic Information

October precipitation amounts for Grand Rapids, Lansing, and Muskegon Michigan were 1.28, 1.32 and 1.11 inches, respectively (Figure 1). Monthly departures were -2.74, -1.84 and -2.69 inches respectively. Percent of mean precipitation for October 2024 is shown in Figure 2. Temperatures for the month of September were much warmer than normal at Grand Rapids, Lansing and Muskegon. The monthly average temperature departures for these sites were +3.4, +3.6 and +3.3 Fahrenheit, respectively. Temperatures were in the top 20 for warmest Septembers on record for much of the area. It was the driest October since 2005

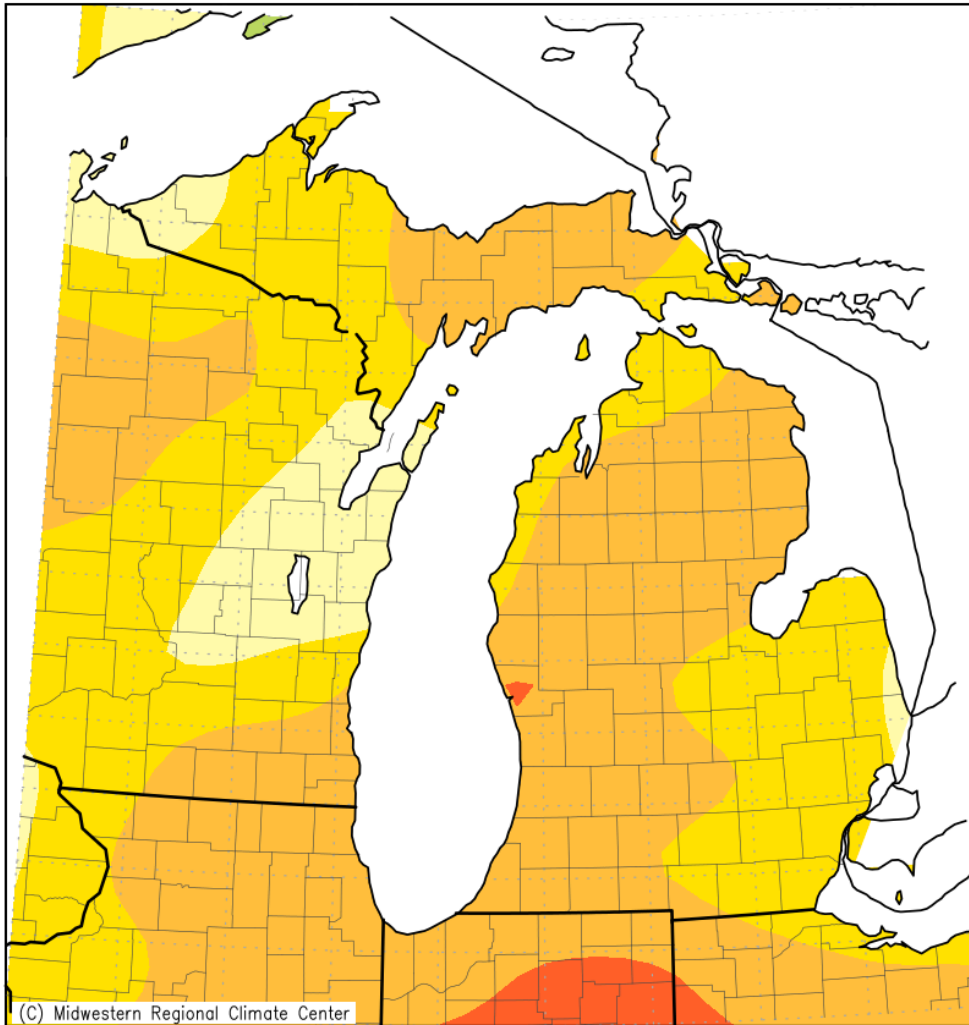
Accumulated Precipitation (in)
October 1, 2024 to October 31, 2024



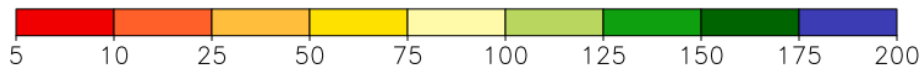
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 11/5/2024 1:57:57 PM EST

Figure 1. October 2024 Monthly Precipitation Totals. Heaviest rainfall along the I-94 corridor and through the eastern portion of the state.

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



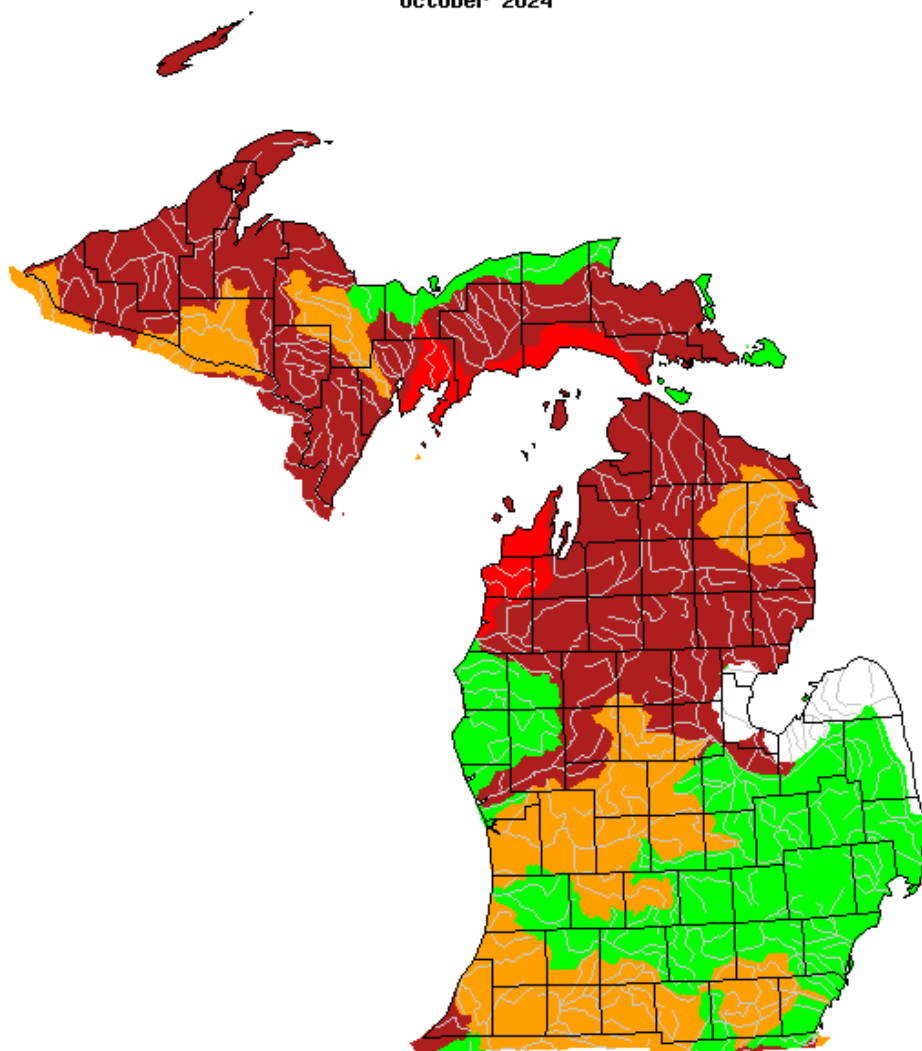
Mean period is 1991–2020.



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

October 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 October grouped by significant hydrologic units. River basins are at and below normal. This further shows how dry October 2024 has been.

Calculated Soil Moisture Ranking Percentile OCT, 2024

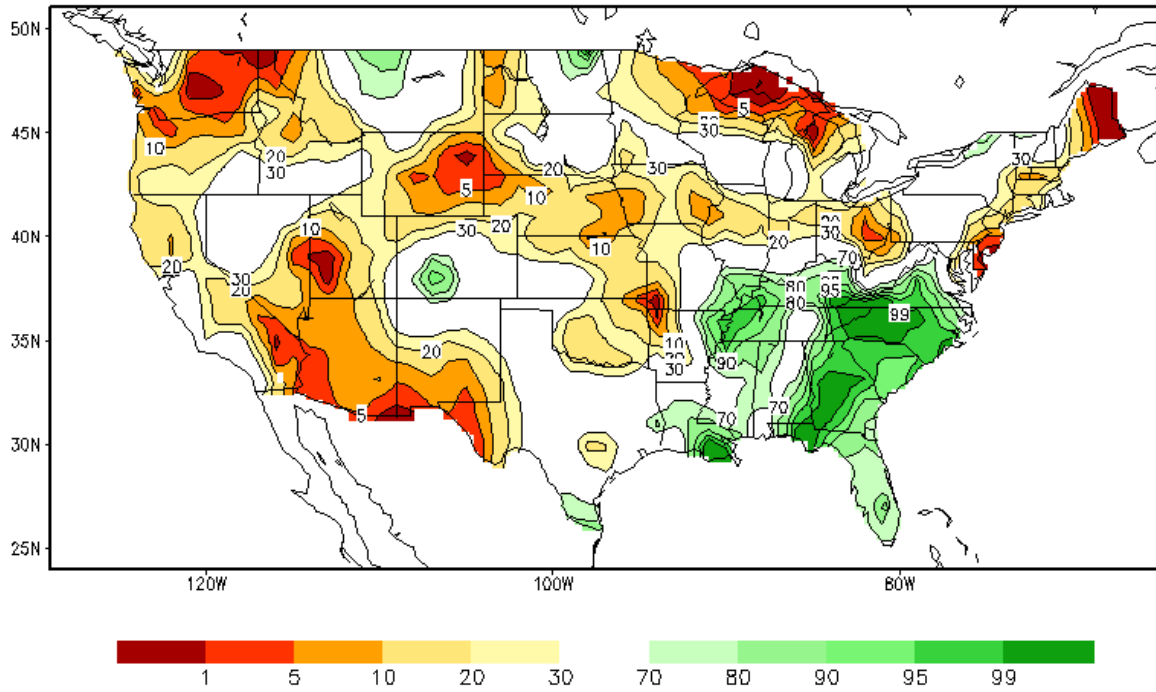


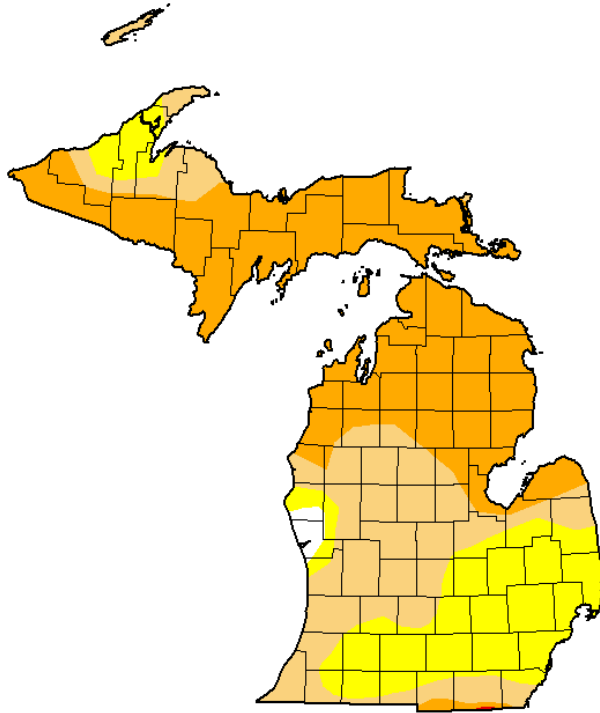
Figure 4. Calculated Soil Moisture Percentile for October, 2024. Soil moisture is at, to below, normal across southern lower Michigan.

U.S. Drought Monitor Michigan

October 29, 2024

(Released Thursday, Oct. 31, 2024)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.95	99.05	74.94	45.65	0.04	0.00
Last Week 10-22-2024	1.41	98.59	63.95	26.10	0.04	0.00
3 Months Ago 07-30-2024	91.61	8.39	0.00	0.00	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 10-01-2024	22.16	77.84	26.85	13.25	0.00	0.00
One Year Ago 10-31-2023	76.92	23.08	6.43	1.31	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme 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>

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National Drought Mitigation Center



droughtmonitor.unl.edu

Figure 5.U.S. Drought Monitor effectively shows the increasing drought across Michigan.

Hydrologic Products issued this month

- 31 Hydrologic Summaries (ARBRVAGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 0 Event-driven Hydrologic Outlook (ARBESFGRR1)
- 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