

NWS FORM E-5

U.S. DEPARTMENT OF COMMERCE
NOAA, NATIONAL WEATHER SERVICE

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

TO: NATIONAL WEATHER SERVICE (W/OH12x1)
HYDROMETEOROLOGICAL INFO CENTER
1325 EAST-WEST HIGHWAY, RM 7116
SILVER SPRING, MD 20910

HSA OFFICE:
Marquette, MI

REPORT FOR (MONTH / YEAR):
November 2019

DATE: **December 11, 2019**

SIGNATURE:
Robin J. Turner, MIC
Jordan Wendt, Hydrology Program Manager

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).

X

An X inside this box indicates no flooding occurred within this Hydrologic Service Area.

November Precipitation Summary

November was not too far out of the ordinary in terms of precipitation for the Upper Peninsula of Michigan. Through the first two-thirds of the month, precipitation remained general below normal. During the week of Thanksgiving, however, Upper Michigan was impacted by two back-to-back synoptic systems that produced widespread significant precipitation. With one of those occurring during the month of November.

During the first event during the week of Thanksgiving, WFO MQT received a dense, wet snow (16.4 inches) with precipitation equivalent of 3.02 inches (5.4:1 snow-to-liquid ratio). Locations along the Lake Michigan shoreline received 1 to 2 inches of rain prior to Thanksgiving which led to rising rivers along the Manistique, Sturgeon, and Whitefish Basins.

Location	Precipitation	% of normal	Snowfall
WFO Marquette	4.03"	127%	29.4"
Marquette City	2.38"	91%	12.9"
Quincy Hill	3.64"	M	33.7"
Ironwood	4.35"	165%	40.5"
Iron Mountain	1.20"	62%	5.0"
Manistique	2.45"	99%	13.0"
Munising	5.11"	137%	36.5"
Stambaugh	1.46"	78%	10.7"

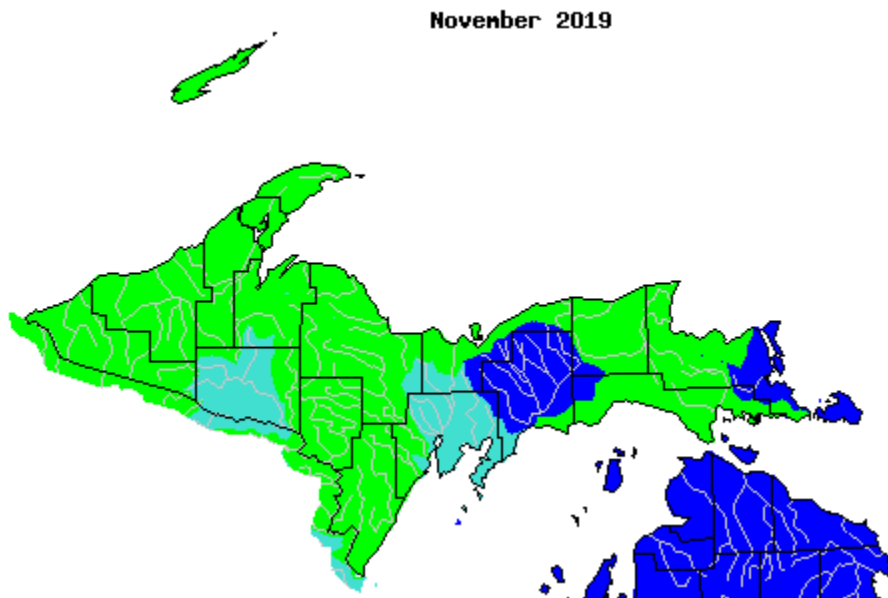
NOTE: Rainfall after 8am EST Oct. 31 was counted in November stats for all but the NWS Marquette site due to the reporting structure of our cooperative observers.

November Flooding Conditions

Rivers did not reach flood stage in the Upper Peninsula.

November River Conditions

River levels across the NWS Marquette Hydrologic Service Area remained generally near normal over the last month; however, the Manistique, Sturgeon, and Whitefish Basin remained at or above normal throughout the month. This is partly to do with a late November system that produced widespread 1 to 2 inches of rain along the Bay of Green Bay and Lake Michigan shorelines.



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		

November Drought Discussion

No drought conditions are depicted in the Upper Peninsula. For the latest drought status, please go to <http://www.drought.gov>.

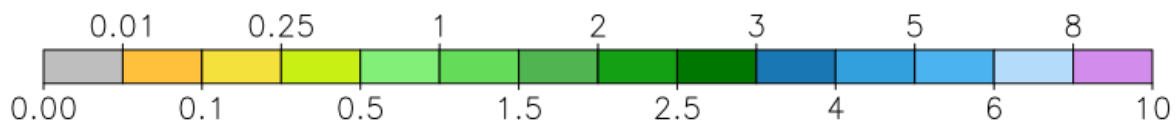
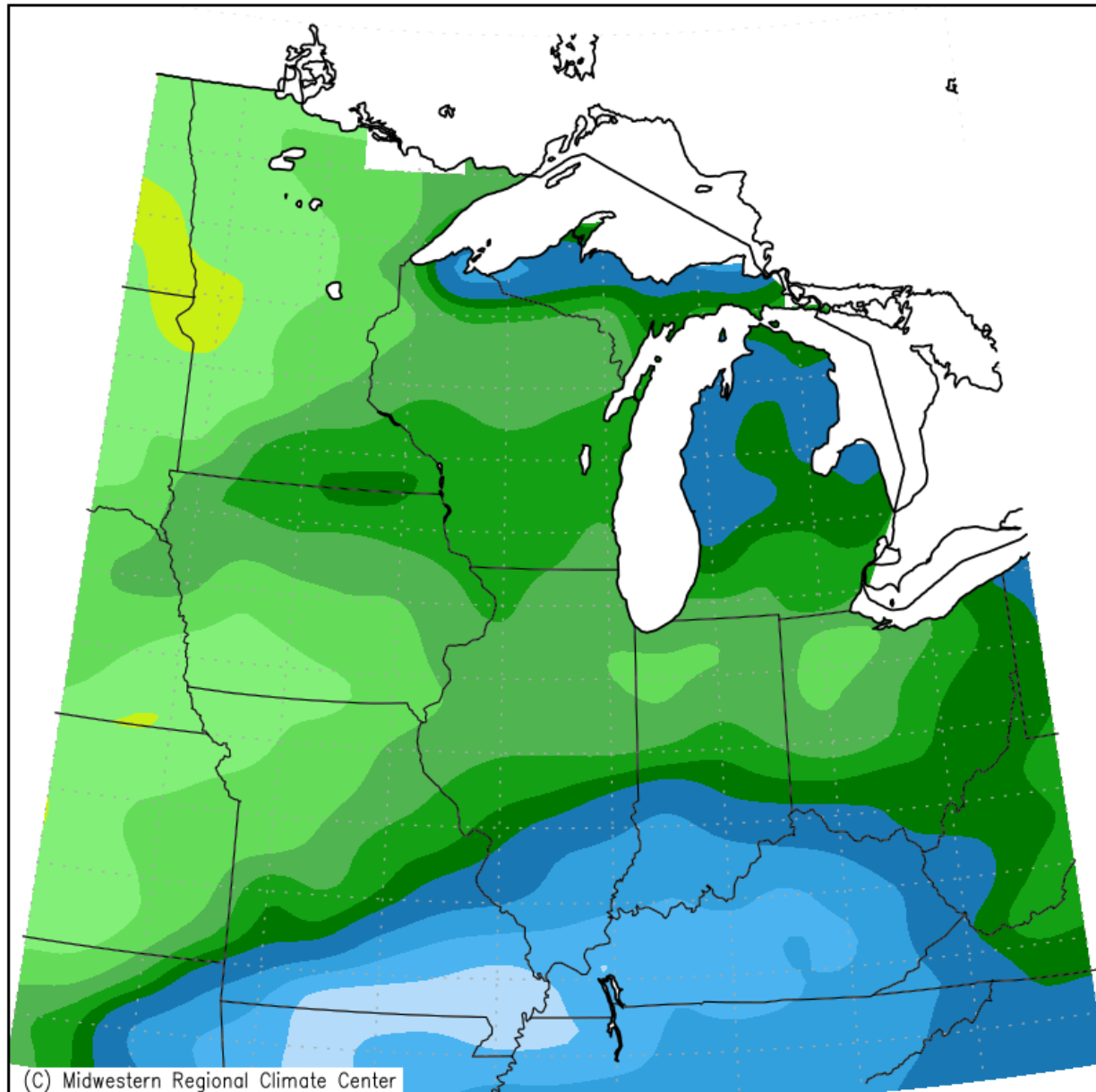
Media Links

No media links

October Products Issued

- 1 – Hydrologic Outlook (ESF)
- 0 – Flood Watch (FFA)
- 0 – Flood Warning (FLW)
- 0 – Flood Advisories and Statements (FLS)
- 0 – Flash Flood Warning (FFW)
- 0 – Flash Flood Statement (FFS)
- 30 – Hydrologic Summary (RVA)
- 0 – Daily River Forecasts (RVD)

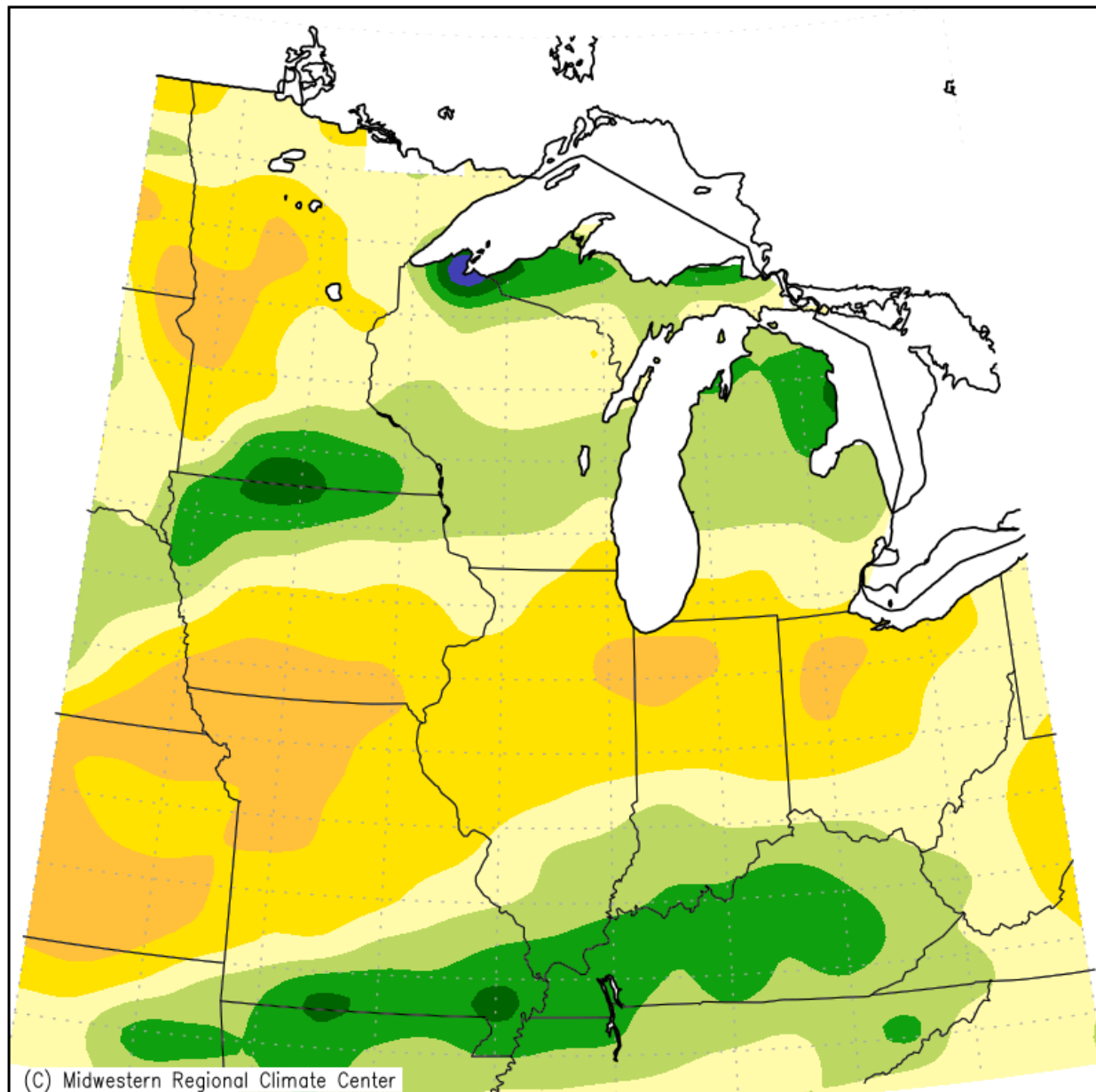
Accumulated Precipitation (in)
November 1, 2019 to November 30, 2019



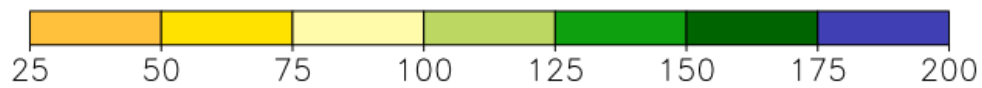
Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana-Champaign

Figure 1. November 2019 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean November 1, 2019 to November 30, 2019



Mean period is 1981–2010.



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Figure 2. November 2019 Percent of Mean of Accumulated Precipitation

Calculated Soil Moisture Anomaly (mm) NOV, 2019

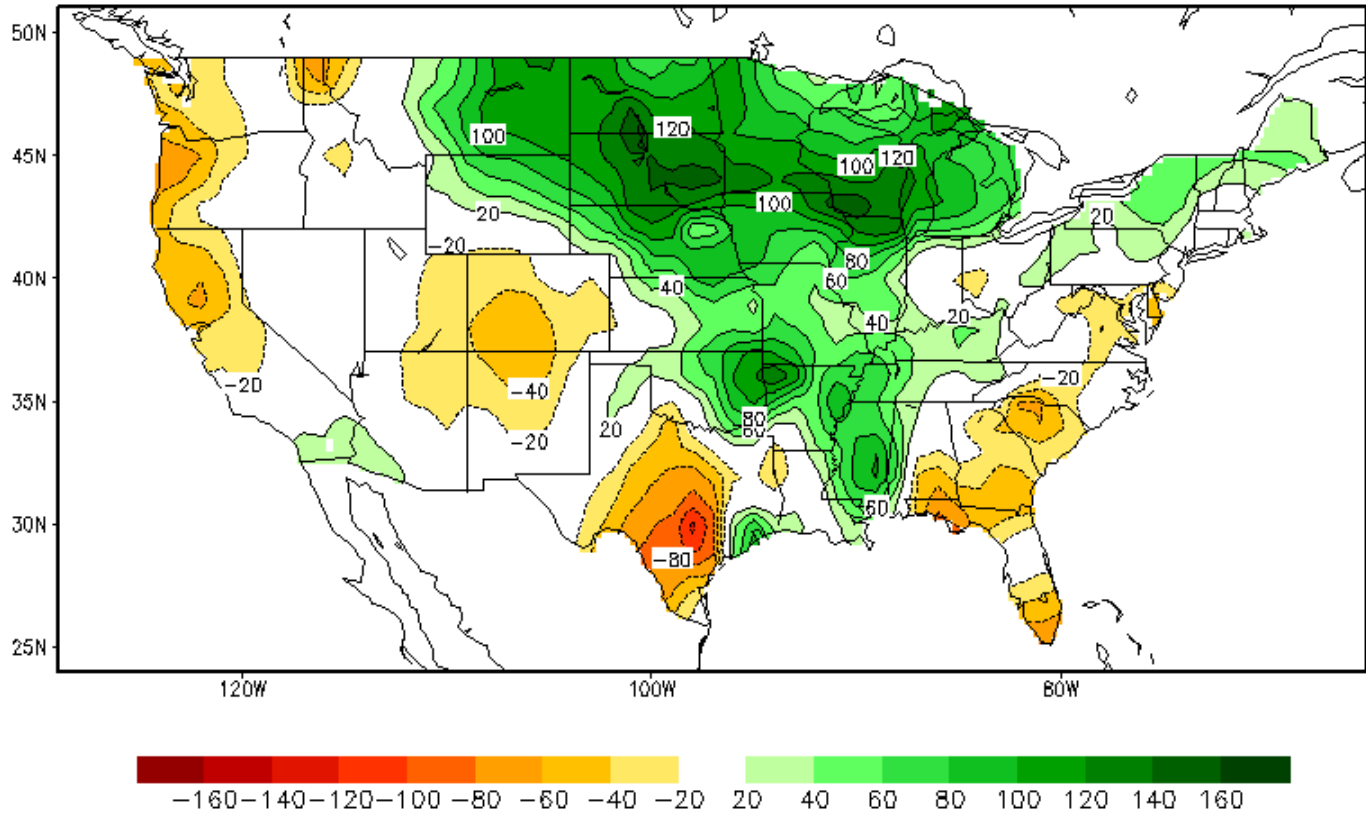


Figure 3: Climate Prediction Center monthly soil moisture anomaly for November 2019

Calculated Soil Moisture Ranking Percentile NOV, 2019

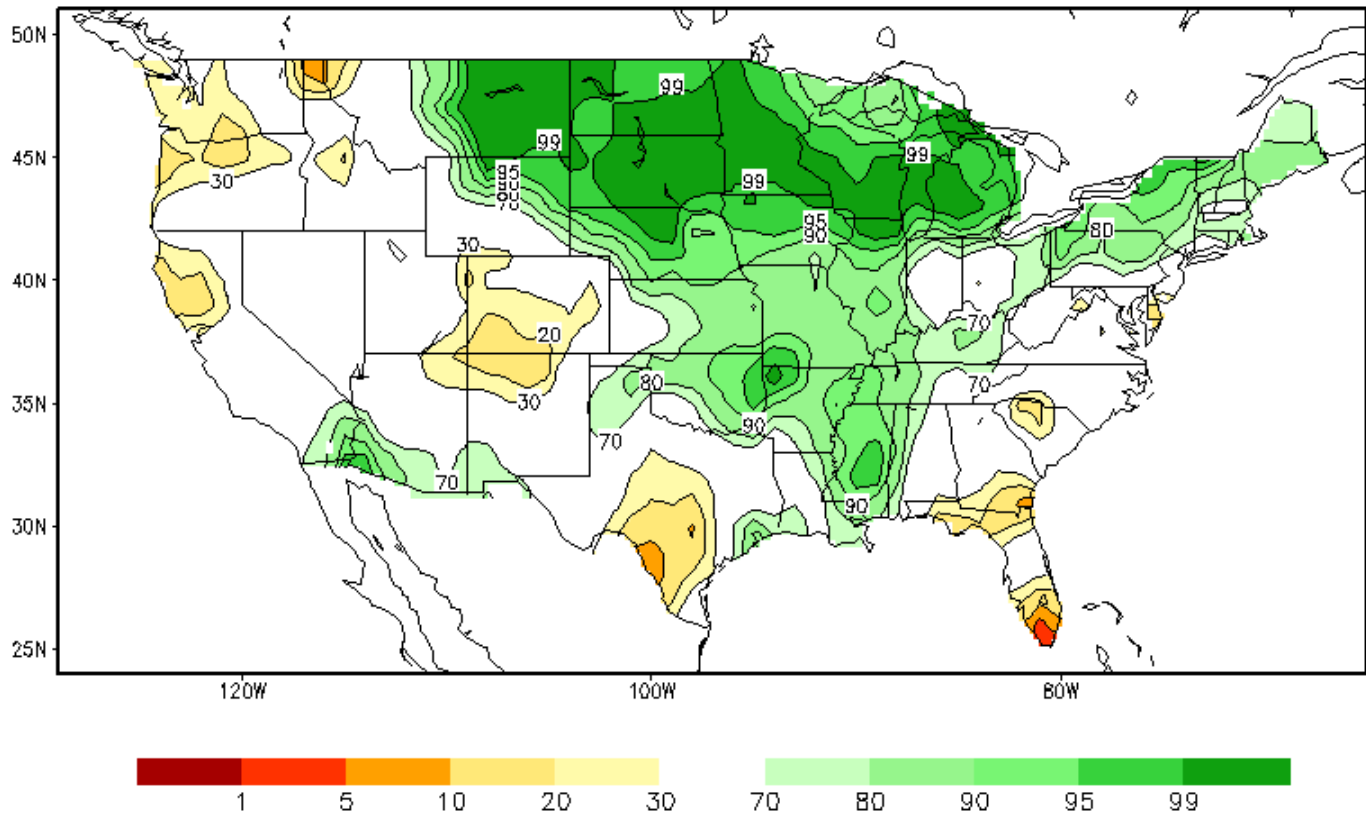


Figure 4: Climate Prediction Center monthly average soil moisture percentile for November 2019