

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

TO: NATIONAL WEATHER SERVICE (W/OS31)
HYDROMETEOROLOGICAL INFO CENTER
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SIGNATURE:
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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 significant flooding occurred within this Hydrologic Service Area.

Summary

No significant flooding occurred during the month of November in our Hydrologic Service Area (HSA). A flood warning was issued for the Flat River near Smyrna, Michigan, but was later cancelled when the river remained within banks and crested below flood stage.

Flood Conditions

None occurred during the month of November.

Flood Stage Report

No rivers exceeded flood stage during the month of November.

River Conditions

River levels across the Grand Rapids HSA by the end of November were significantly above normal in Southwest Lower Michigan. Significant rainfall near the end of the month resulted in higher than normal flows at the end of the month for most of the rivers located in Southwest Lower Michigan.

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

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	160
Ewart	Muskegon	210
Mt. Pleasant	Chippewa	270
Lansing	Grand	390
Grand Rapids	Grand	200
East Lansing	Red Cedar	250
Hastings	Thornapple	140
Battle Creek	Battle Creek	130
New Richmond	Kalamazoo	92

General Hydrologic Information

For the month of November, temperatures were above normal for all of Southwest Lower Michigan. November's precipitation was below normal for the western half and above normal for the eastern half of Southwest Lower Michigan.

November precipitation totals at first order stations across our HSA were below normal for Grand Rapids and Muskegon, and above normal for Lansing, Michigan. November precipitation totals at Grand Rapids, Lansing, and Muskegon, were 2.80, 3.75, and 2.40 inches, respectively. Precipitation for the month at these three sites were 0.55 of an inch below normal at Grand Rapids, 1.09 inches above normal at Lansing, and 0.83 of an inch below normal at Muskegon, Michigan. For the year, precipitation totals were still above normal at Grand Rapids, Lansing, and Muskegon, Michigan. Yearly precipitation totals were 6.20 inches above normal for Grand Rapids, 4.53 inches above normal for Lansing, and 6.65 inches above normal for Muskegon, Michigan.

November snowfall totals at first order stations across our HSA were below normal for Grand Rapids (-7.4"), Lansing (-3.5"), and Muskegon (-8.7"), Michigan. November snowfall totals at Grand Rapids, Lansing, and Muskegon, were 0.3", 1.6" , and a Trace, respectively.

Soil Temperatures across the HSA were still above freezing, and at 2 inches ranged from 44 degrees Fahrenheit at Baldwin, Michigan to 45 degrees Fahrenheit at Grand Rapids, Michigan.

Temperatures for the month of November were above normal at Grand Rapids, Lansing, and Muskegon, with average monthly departures of +2.8, +2.9 and +2.3 degrees Fahrenheit, respectively.

Hydrologic Products issued this month:

- 1 Flood Warning (ARBFLWGRR) was issued
- 1 Flood Statement (ARBFLSGRR) was issued
- 1 Hydrologic Outlook (ARBESFGRR) was issued
- 11 Hydrologic Statements (ARBRVSGRR) were issued
- 30 Daily River and Lake Summary's (ABRRVDGRR) were issued
- 30 Hydrologic Summary's (ARBRVAGRR) were issued