

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

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 March in our Hydrologic Service Area (HSA). River flood advisories for high river levels were issued for the Grand River at Ionia, Maple River near Maple Rapids, and the Chippewa River near Mt. Pleasant, Michigan.

**Flood Conditions**

Several rivers in our HSA exceeded their banks but did not reach flood stage during the month of March.

River flood advisories were issued for the following rivers that exceeded bankfull, but remained below flood stage, during the month of March:

- Grand River at Ionia, Michigan (8 days above bankfull)
- Maple River near Maple Rapids, Michigan (10 days above bankfull)
- Chippewa River near Mt Pleasant, Michigan (1 day above bankfull)

The March Spring Flood and Water Resources Outlook indicated the risk of flooding from late winter into spring was near to below average.

**Flood Stage Report**

No rivers exceeded flood stage during the month of March.

## **River Conditions**

River levels across the HSA were below to near normal at the end of the month. Ice coverage of streams and rivers steadily decreased during the month of March and no ice jams were reported during the month of March in our HSA. 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	135
Whitehall	White	111
Evart	Muskegon	120
Mt. Pleasant	Chippewa	108
Lansing	Grand	47
Grand Rapids	Grand	66
East Lansing	Red Cedar	45
Hastings	Thornapple	50
Battle Creek	Battle Creek	57
Battle Creek	Kalamazoo	60

## **General Hydrologic Information**

March 2013 was cooler and drier than normal in Southwest Lower Michigan. Snowfall for the month was near to below normal.

March precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 0.94, 0.96, and 1.25 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 1.43 inches below normal at Grand Rapids, 1.10 inches below normal at Lansing, and 1.00 inch below normal at Muskegon, Michigan (Figure 2). Yearly precipitation totals were 1.75 inches above normal for Grand Rapids, 1.00 inch above normal for Lansing, and 4.58 inches above normal for Muskegon, Michigan.

Snowfall for the month of March at Grand Rapids, Lansing, and Muskegon, Michigan were 7.7 inches (0.6 of an inch below normal), 5.2 inches (1.8 inches below normal), and 5.7 inches (3.3 inches below normal), respectively. Snow depth across the HSA ranged from zero in our southern counties to just over 10 inches in our more northern counties at the end of March (Figure 3).

At the end of March, frost depths across the HSA were at zero.

Temperatures for the month of March were below normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of -4.1, -4.2 and -3.6 degrees Fahrenheit, respectively.

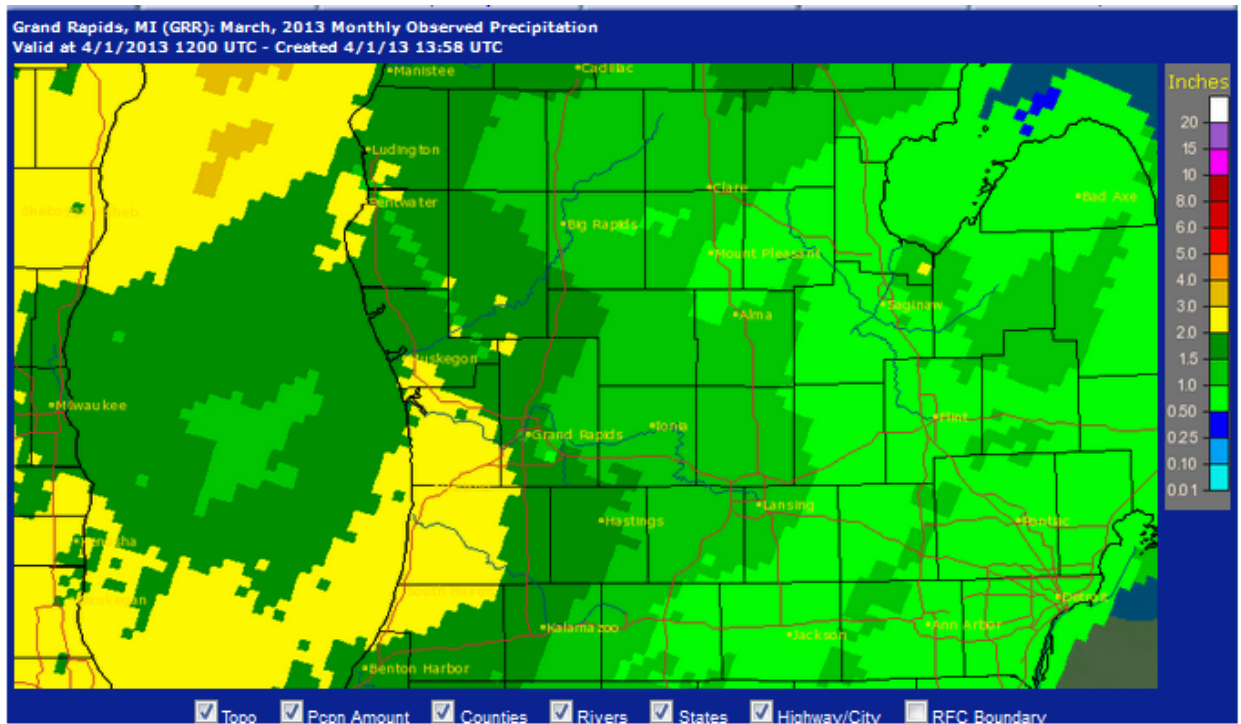


Figure 1. March Monthly Precipitation Totals

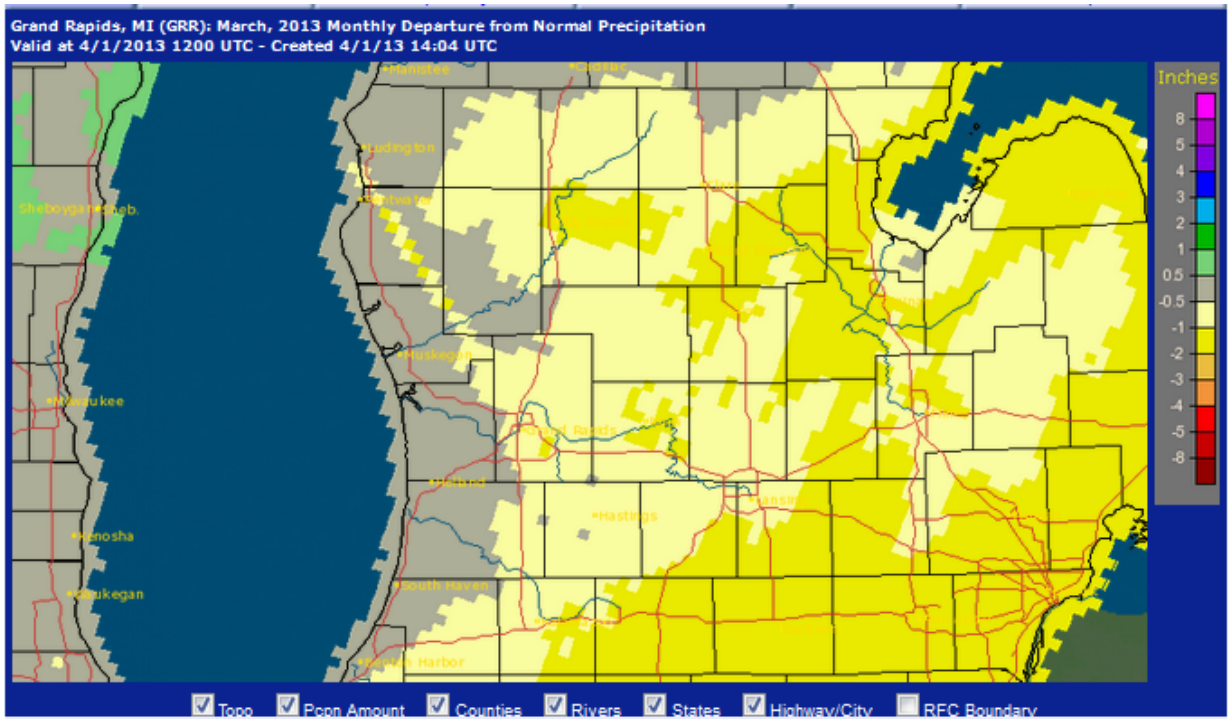


Figure 2. March Monthly Departure from Normal Precipitation Totals

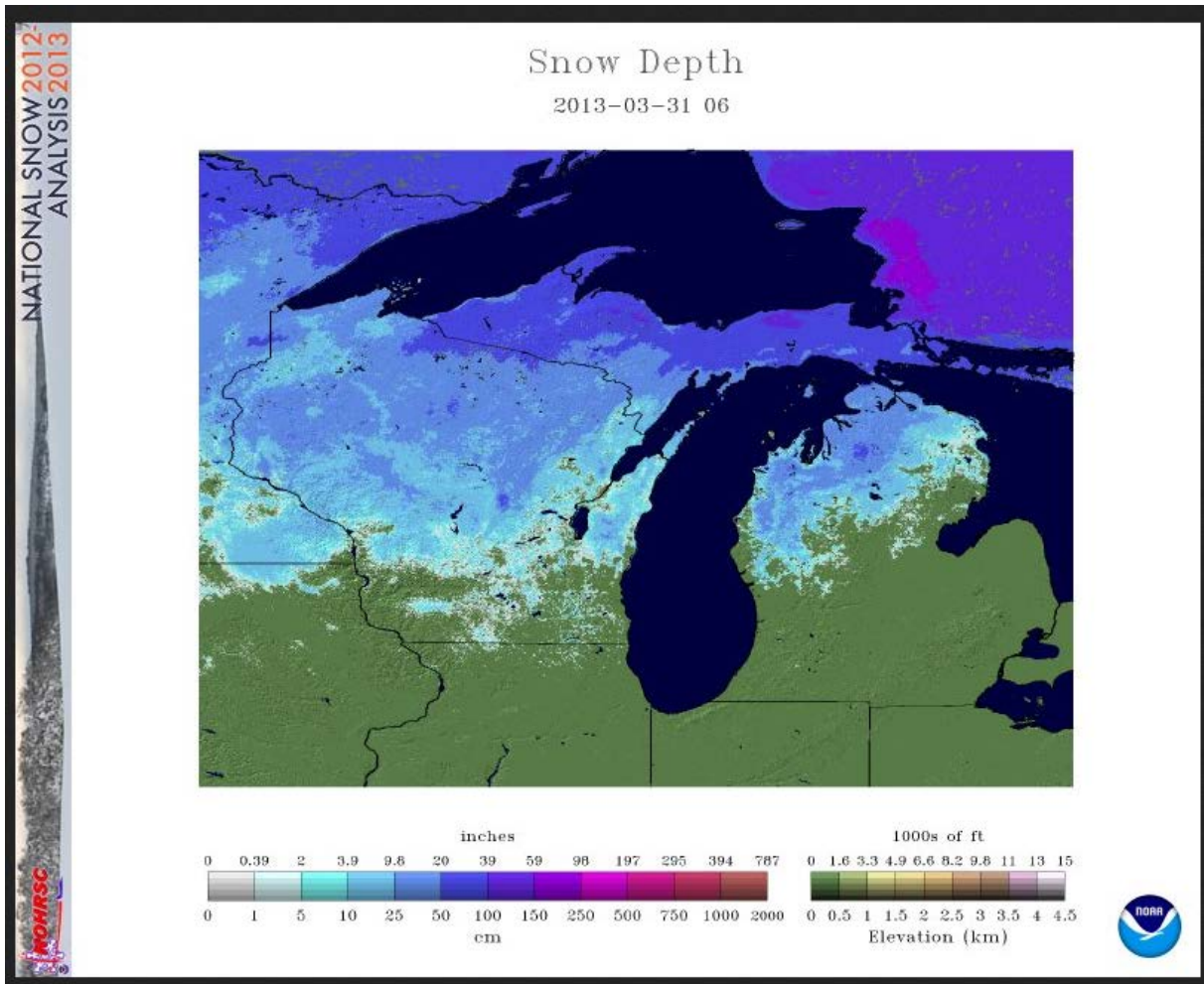


Figure 3. Snow Depth at the end of March.

**Hydrologic Products issued this month:**

- 20 River Flood Advisories (ARBFLSGRR)
- 15 Hydrologic Statements (ARBRVSGRR)
- 2 Probabilistic Hydrologic Outlooks (ARBESFGRR)
- 31 Hydrologic Summaries (ARBRVAGRR)