NWS FORM E-5 **U.S. DEPARTMENT OF COMMERCE**
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

REPORT FOR (MONTH &YEAR):
January 2014

DATE:
March 3, 2014

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

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).

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

Summary

No significant flooding occurred in our Hydrologic Service Area (HSA) during the month of January 2014.

Flood Conditions

A quick hitting "January Thaw" caused rivers to rise briefly across the HSA. Ice jams occurred on the Flat, Pere Marquette, and Muskegon Rivers, causing the rivers to rise briefly out of their banks. The following rivers exceeded bankfull, but remained below flood stage, in our HSA during the month of January 2014:

- Flat River near Smyrna, Michigan (4 days above bankfull)
- Sycamore Creek near Holt, Michigan (3 days above bankfull)
- Muskegon River near Evart, Michigan (1 day above bankfull)
- Pere Marquette River near Scottville, Michigan (2 days above bankfull)
- Kalamazoo River near New Richmond, Michigan (4 days above bankfull)

Flood Stage Report

No rivers exceeded flood stage in our HSA during the month of January 2014.

River Conditions

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

Location	River	% of Normal
Scottville	Pere Marquette	85*
Whitehall	White	68*
Evart	Muskegon	141
Mt. Pleasant	Chippewa	222
Lansing	Grand	100
Grand Rapids	Grand	160
East Lansing	Red Cedar	100

Hastings	Thornapple	100
Battle Creek	Battle Creek	109
Battle Creek	Kalamazoo	100

* Ice Impacted

General Hydrologic Information

January 2014 had temperatures colder than normal and precipitation above normal for Southwest Lower Michigan. January precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 3.45, 2.16, and 3.32 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 1.36 inches above normal at Grand Rapids, 0.51 of an inch above normal at Lansing, and 1.29 inches above normal at Muskegon, Michigan (Figure 2).

Snowfall totals for the month of January at Grand Rapids, Lansing, and Muskegon, Michigan were 41.9 (21.1 above), 23.5(9.7 above), and 48.4(20.4 above) inches respectively.

Temperatures for the month of January were significantly below normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of -6.3, -7.9 and -5.1 degrees Fahrenheit, respectively.

The cold temperatures allowed for continued ice development on area rivers.

At the end of January, the frost depth ranged from 1 to 7 inches.

Snow depth ranged from 8 inches over south central Lower Michigan to near 24 inches near the lakeshore of northwest Lower Michigan (Figure 3). Water in the snowpack ranged from 1 to 5 inches (Figure 4) over Southwest Lower Michigan.

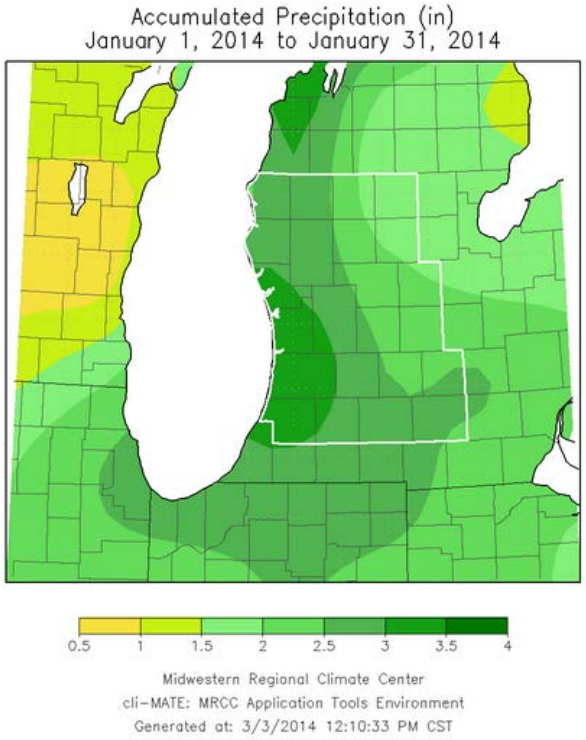

Figure 1. January Monthly Precipitation Totals

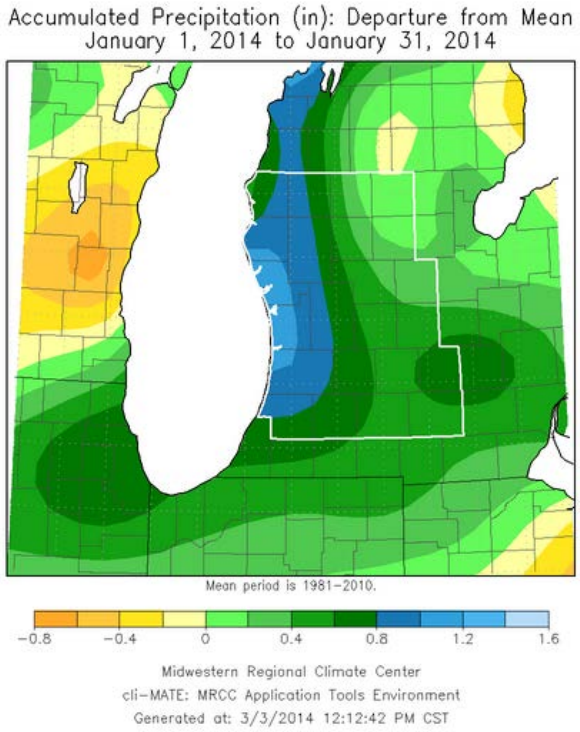

Figure 2. January Monthly Departure from Normal Precipitation Totals

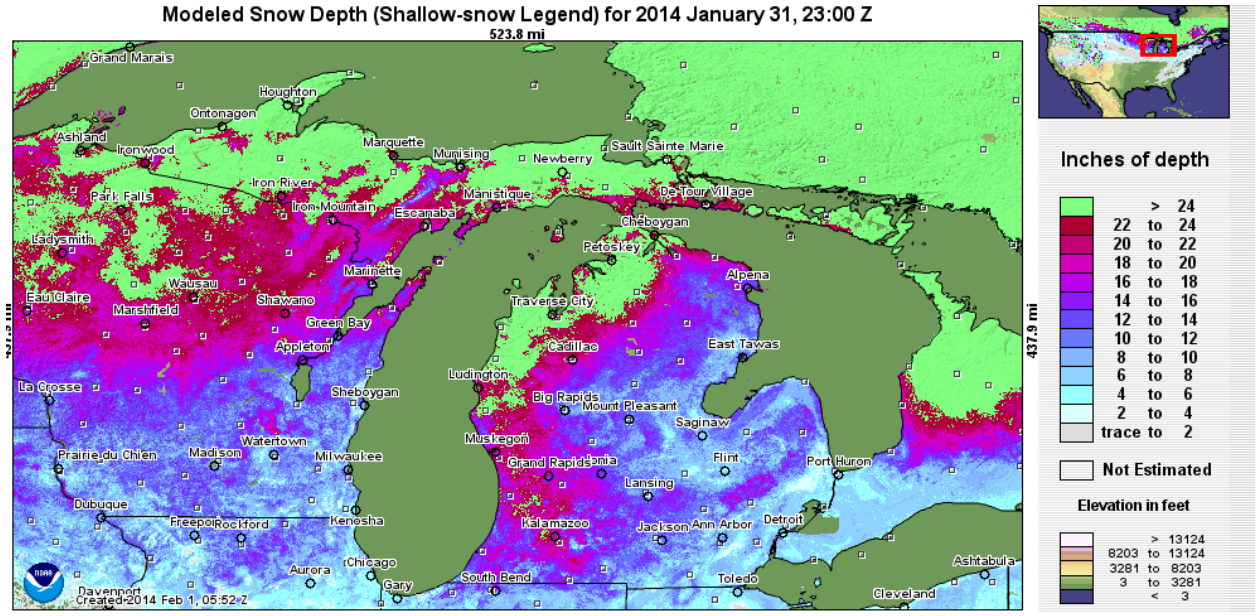

Figure 3. End of the Month Snow Depth for January

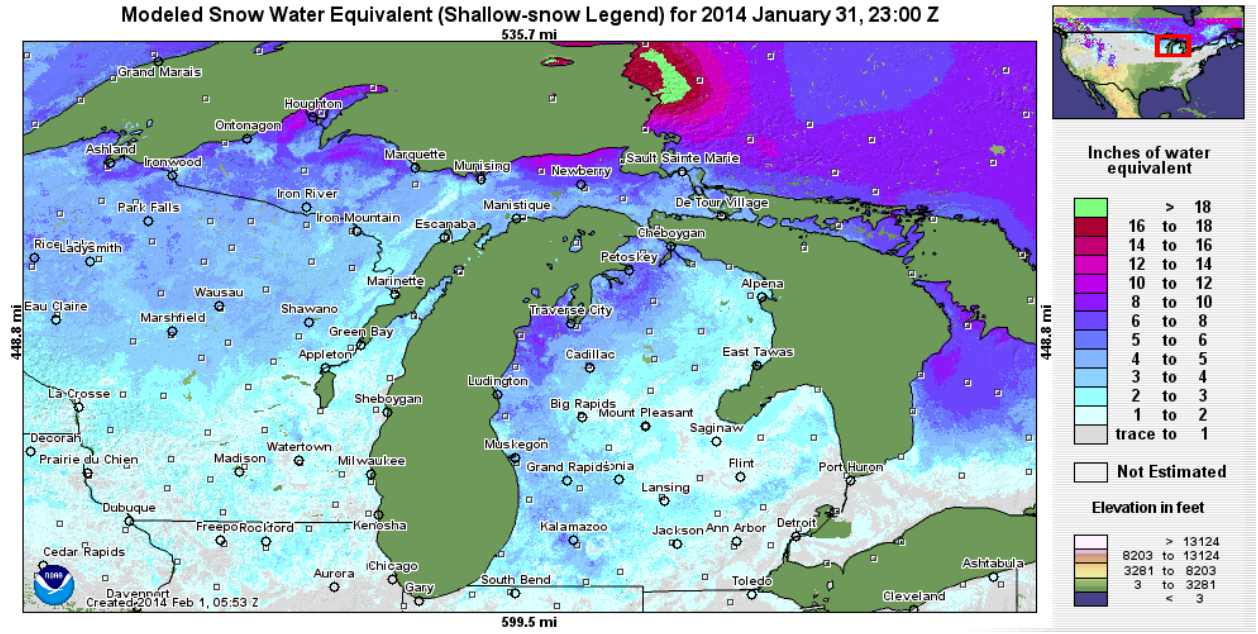

Figure 4. End of the Month Snow Water Equivalent for January

Hydrologic Products issued this month:

24 River Flood Advisories (ARBFLSGRR)
7 Hydrologic Statements (ARBRVSGRR)
3 Hydrologic Outlooks (ARBESFGRR)
31 Hydrologic Summaries (ARBRVAGRR)