NWS FORM E-5	U.S. DEPARTMENT OF COMMERCE	HSA OFFICE:
	NOAA, NATIONAL WEATHER SERVICE	**Grand Rapids, MI**
.		REPORT FOR (MONTH &YEAR):
		February 2015
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS		
		DATE:
		March 23, 2015
.		
TO:	NATIONAL WEATHER SERVICE (W/OS31)	
	HYDROMETEOROLOGICAL INFO CENTER	SIGNATURE:
	1325 EAST-WEST HIGHWAY, RM 13468	Daniel K. Cobb, MIC
	SILVER SPRING, MD 20910	Mark Sekelsky, Lead Forecaster

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

Historically cold temperatures and less than normal precipitation prevailed for the hydrologic service area. River levels remained steady for the month with ice expanding in coverage.

Flood Conditions

No significant flooding occurred . Rivers became ice affected, but no impacts evolved because the arctic air mass continued through the month.

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No rivers exceeded bankfull during the month of February 2015:

Flood Stage Report

No forecast points exceeded flood stage in our HSA during the month of February 2015.
As a result, no NWS Form E-3 "Flood Stage Report" was sent.

River Conditions

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

Location	River	% of Normal
Scottville	Pere Marquette	*
Whitehall	White	*
Evart	Muskegon	*
Mt. Pleasant	Chippewa	*
Lansing	Grand	25
Grand Rapids	Grand	*
East Lansing	Red Cedar	35
Hastings	Thornapple	48
Battle Creek	Battle Creek	52
Battle Creek	Kalamazoo	49

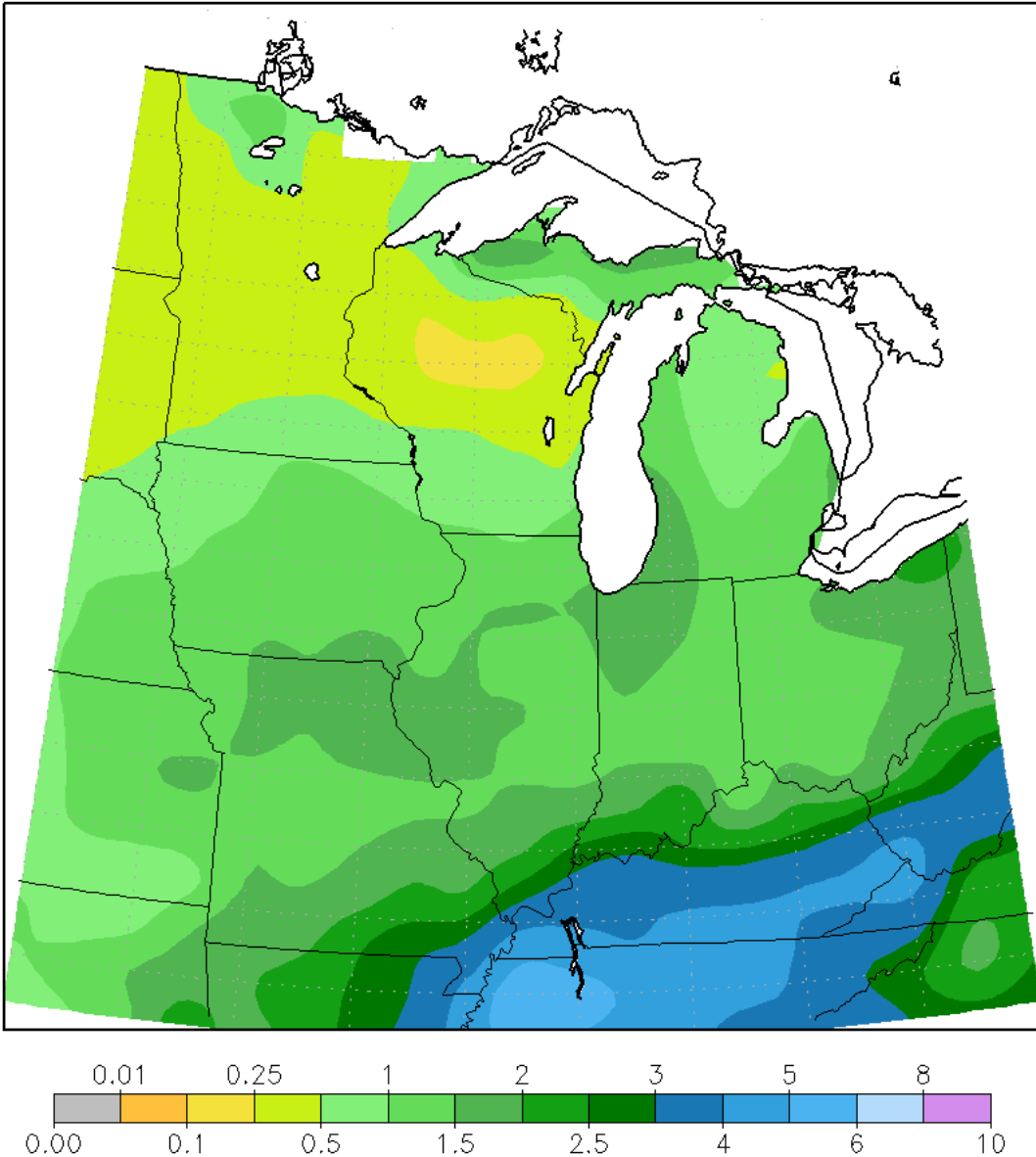* - Ice Affected

General Hydrologic Information

February 2015 was a historically cold month.   Due to the presence of arctic air through the month, the pattern remained dry. Well below normal precipitation fell at all sites. February precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 1.17, 0.90, and 1.57 inches, respectively (Figure 1). Precipitation departures for the month at these three sites were 0.62 of an inch below normal at Grand Rapids, 0.57 inches below normal at Lansing, and 0.26 of an inch below normal at Muskegon. Percent of mean precipitation for February 2015 is shown in Figure 2.   Yearly precipitation departures were 0.84 inches below normal for Grand Rapids, 0.87 inches below normal for Lansing, and 0.57 inches below normal for Muskegon, Michigan.

Temperatures for the month of February were well below normal at Grand Rapids, Lansing, and Muskegon. The average monthly departures were, 13.5, 14.5, and 11.2 degrees Fahrenheit respectively.

At the start of the month ice was present on many of the rivers. Through the bitter cold stretch, which lasted through the month, the ice continued to expand resulting in many of the waterways becoming ice affected. At the end of the month, the ice was likely thicker and more widespread than normal. No notable impacts occurred because water levels were below normal to start the cold stretch and the fact that no heavy rain events or considerable warmups developed.

By the end of the month, snow water equivalent values ranged from 1 to 3 inches. Locally higher amounts were located in the typical heavy snow belt regions in the lower reaches of the Grand, Muskegon, Kalamazoo, White and Pere Marquette basins.
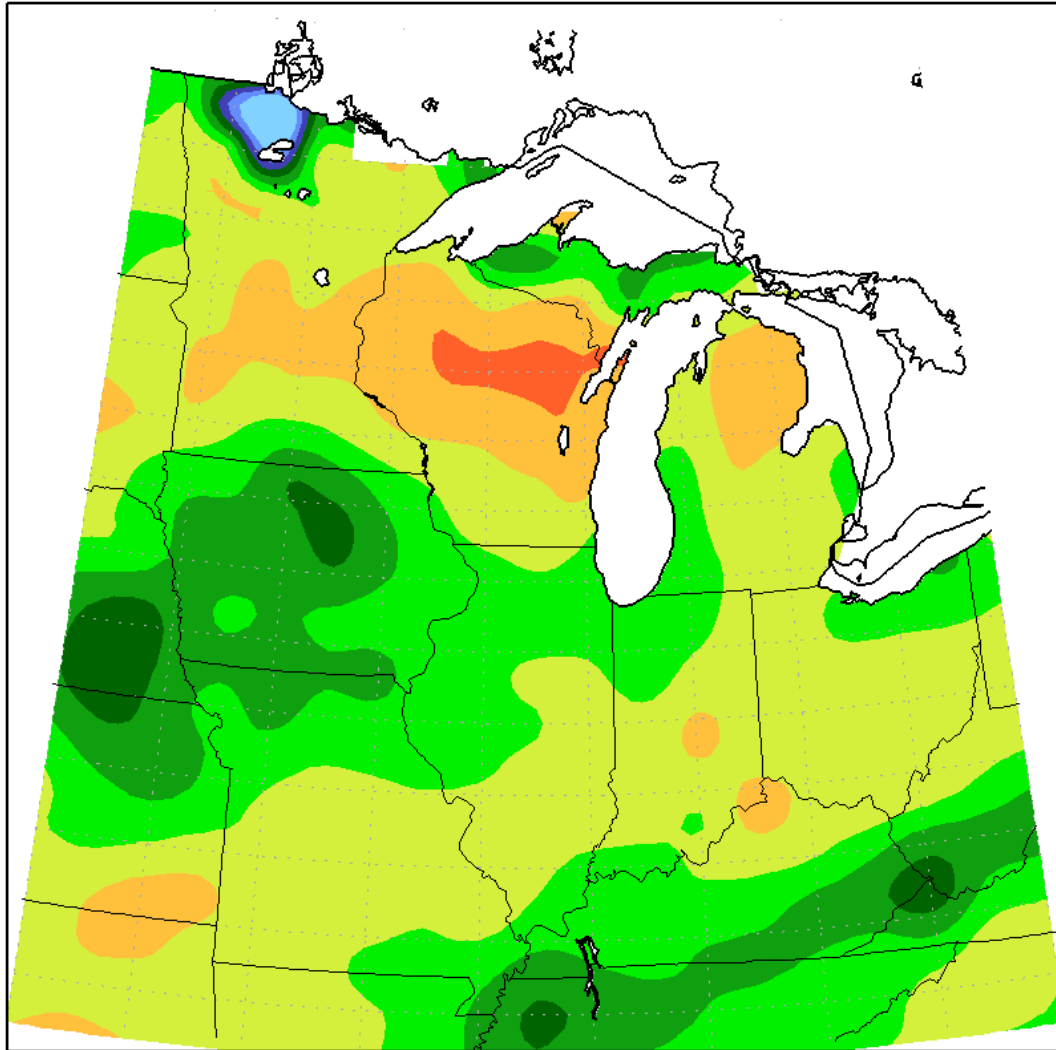
Figure 1. February Monthly Precipitation Totals

Accumulated Precipitation: Percent of Mean
February 1, 2015 to February 28, 2015

Mean period is 1981–2010.

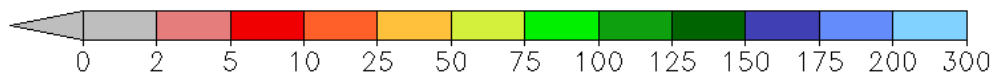0 2 5 10 25 50 75 100 125 150 175 200 300

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

Figure 2. February Percent of Mean of Accumulated Precipitation

<u>Hydrologic Products issued this month:</u>

1 Hydrologic Outlook (ARBESFGRR)
28 Hydrologic Summaries (ARBRVAGRR)

<u>News Articles and Related Documentation</u>

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None
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