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

HSA OFFICE:
Grand Rapids, MI

REPORT FOR (MONTH &YEAR):
November 2014

DATE:
December 28, 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:
Daniel K. Cobb, MIC
Mark Sekelsky

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

November was a quiet month in terms of hydrologic impacts. The main event occurred at the end of the month when snowmelt combined with 1 to 2 inches of rain which caused considerable rises on area rivers. While above normal flows occurred, no flooding was observed.

Flood Conditions

No flooding occurred. Several advisories were issued at the end of the month to cover the rises associated with the rainfall and snowmelt.

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The following rivers exceeded bankfull during the month of November 2014:

- Sycamore Creek near Holt (2 days above bankfull)
- Grand River near Ionia, Michigan (1 day above bankfull)
- Muskegon River near Croton, Michigan (1 day above bankfull)
- Kalamazoo River near New Richmond, Michigan (1 day above bankfull)

Flood Stage Report

No forecast points exceeded flood stage in our HSA during the month of November 2014. 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	174
Whitehall	White	136
Evart	Muskegon	185
Mt. Pleasant	Chippewa	138
Lansing	Grand	153
Grand Rapids	Grand	244
East Lansing	Red Cedar	184
Hastings	Thornapple	324
Battle Creek	Battle Creek	294
Battle Creek	Kalamazoo	166

General Hydrologic Information

November 2014 featured below normal temperatures and generally above normal precipitation. November precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 4.11, 2.61, and 4.17 inches, respectively (Figure 1). Precipitation departures for the month at these three sites were 0.60 of an inch above normal at Grand Rapids, 0.17 inches below normal at Lansing, and 0.80 of an inch above normal at Muskegon. Percent of mean precipitation for November 2014 is shown in Figure 2. Yearly precipitation departures were 2.94 of an inch above normal for Grand Rapids, 6.02 inches above normal for Lansing, and 5.94 inches above normal for Muskegon, Michigan.

Temperatures for the month of November were well below normal at Grand Rapids, Lansing, and Muskegon. The average monthly departures were, -5.8, -5.7, and -4.2 degrees Fahrenheit respectively.

Ice formed unseasonably early on area rivers due to the very cold temperatures. The combination of warmer temperatures and a period of rain at the end of the month caused much of the ice to dissipate without any significant impacts.

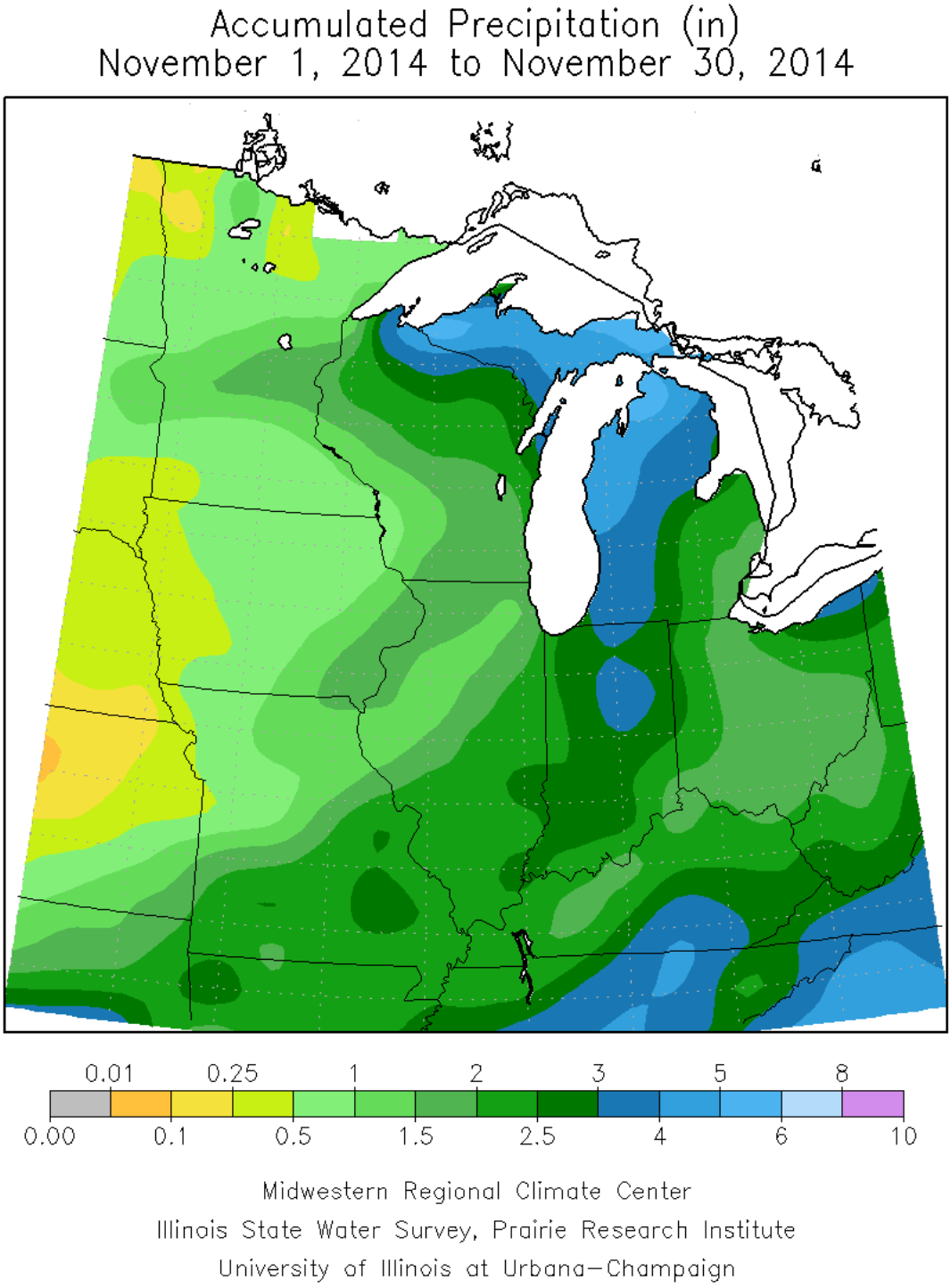

Figure 1. November Monthly Precipitation Totals

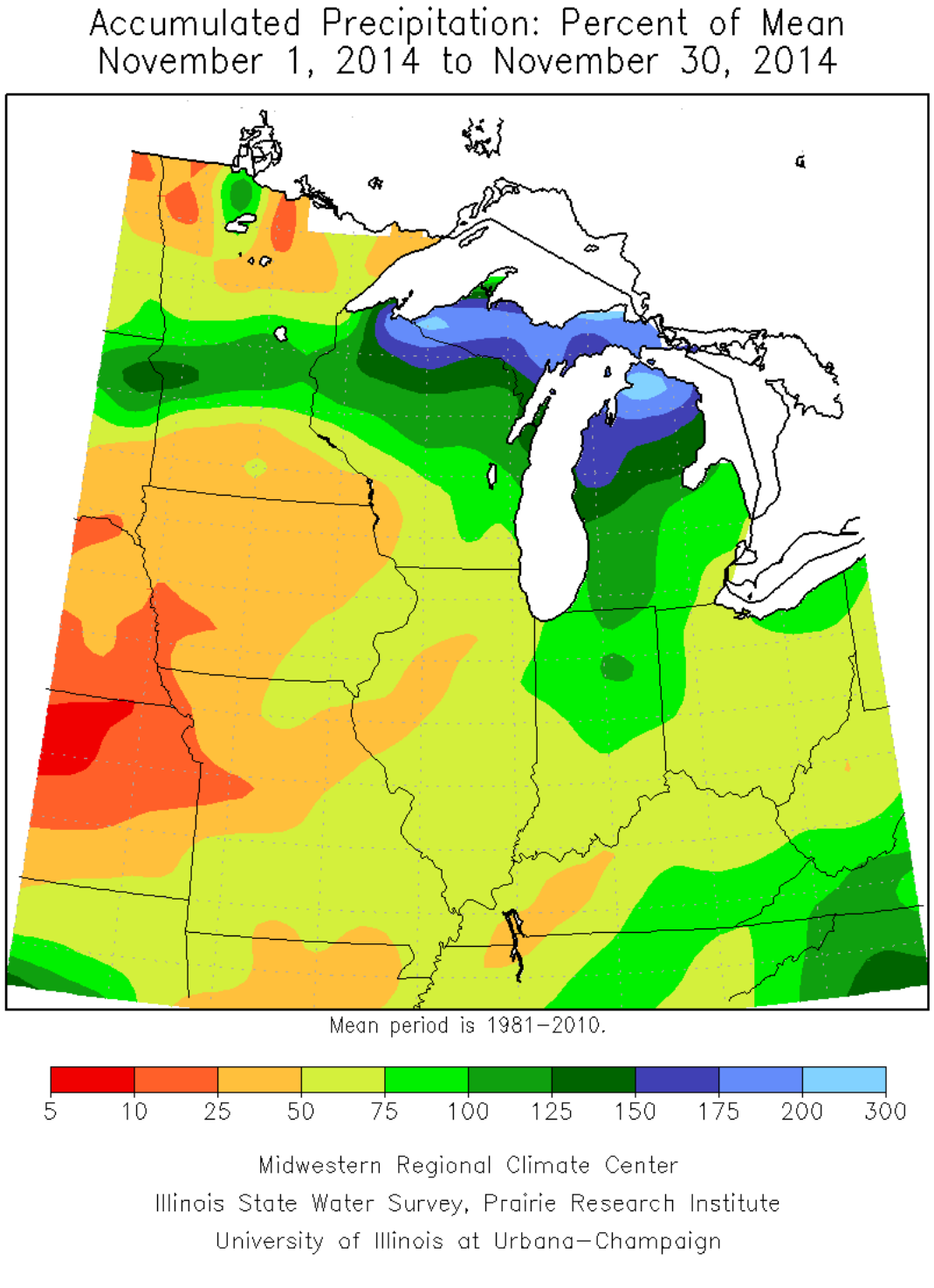

Figure 2. November Percent of Mean of Accumulated Precipitation

Hydrologic Products issued this month:

14 River Flood Advisories (ARBFLSGRR)
1 Hydrologic Outlook (ARBESFGRR)
10 River Statements (ARBRVSGRR)
30 Hydrologic Summaries (ARBRVAGRR)
30 Daily River and Lake Summary (ARBRVDGRR)

News Articles and Related Documentation

None