

NWS FORM E-5

U.S. DEPARTMENT OF COMMERCE
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

REPORT FOR (MONTH & YEAR):
December 2010

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

DATE:
January 4, 2011

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).

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

Summary

No rivers exceeded flood stage during the month of December in our Hydrologic Service Area (HSA).

Daily river forecasts were provided for the Kalamazoo River in support of the oil spill that occurred back in July on the Kalamazoo River. In early December a special briefing was provided to the oil spill incident command on the potential for ice jam and spring snowmelt flooding on the Kalamazoo River. On December 20th our office, in coordination with the oil spill incident command and the USACE Cold Regions Research and Engineering Laboratory, conducted a fly over of the impacted area along the Kalamazoo River. The fly over observed three freeze-up ice jams, all associated with retention ponds, on the Kalamazoo River in the clean up area. The first one was located behind the Ceresco Dam (approx 6 mi downstream from Talmadge Creek, the second one was located at the lower mill pond in the city of Battle Creek (approx 16 mi DS), and the third one was located at the Morrow Pond behind the Marrow dam (approx 37 mi DS).

The ice jams have a potential impact on clean up operations for the oil spill. Work crews during the month of December are continuing their efforts to clean up the oil spill at selected "hot spots" along the river. One of those clean up areas is located approximately 13 miles downstream from the oil spill, just upstream from one of the freeze up ice jams. On December 16th, temperatures reached the single digits overnight which resulted in significant frazil ice development on the river. As a result, the frazil ice packed in to the freeze up jam located near the lower mill pond in the City of Battle Creek and constricted flow, which caused river levels upstream (backwater) to rise rapidly, by several feet. As a result, cleanup crews just upstream of the freeze up ice jam had to evacuate the area immediately and head to high ground, fortunately no one was hurt nor was any equipment lost. One of the crew members mentioned the rising water literally chased them right up the bank.

Flood Conditions

None to report.

Flood Stage Report

No rivers in Southwest Lower Michigan exceeded flood stage during the month of December.

River Conditions

River levels by the end of December were near to below normal across 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	85
Whitehall	White	76
Ewart	Muskegon	78
Mt. Pleasant	Chippewa	101
Lansing	Grand	90
Grand Rapids	Grand	89
East Lansing	Red Cedar	62
Hastings	Thornapple	71
Battle Creek	Battle Creek	69
New Richmond	Kalamazoo	84

General Hydrologic Information

December 2010 was slightly colder than normal with precipitation, especially in the form of snow, below normal across the HSA (Figures 1&2).

December precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan were 1.78, 1.65, and 1.87 inches, respectively. Precipitation totals for the month at these three sites were 0.92 of an inch below normal at Grand Rapids, 0.52 of an inch below normal at Lansing, and 0.77 of an inch below normal at Muskegon, Michigan. Yearly precipitation totals were 1.26 of an inch below normal for Grand Rapids, 3.78 inches below normal for Lansing, and 2.19 inches below normal for Muskegon, Michigan.

Snowfall totals for December at Grand Rapids, Lansing, and Muskegon, Michigan were 11.4, 8.1, and 13.8 inches, respectively. Snowfall totals for the month at these three sites were 7.4 inches below normal at Grand Rapids, 5.1 inches below normal at Lansing, and 15.5 inches below normal at Muskegon, Michigan. Snow depths at Grand Rapids, Lansing, and Muskegon, Michigan at the end of the month were zero (Figure 3).

Temperatures for the month of December were near to slightly below normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of -0.2, -2.5 and 0.0 degrees Fahrenheit, respectively.

Frost depths across the HSA were eight inches or less.

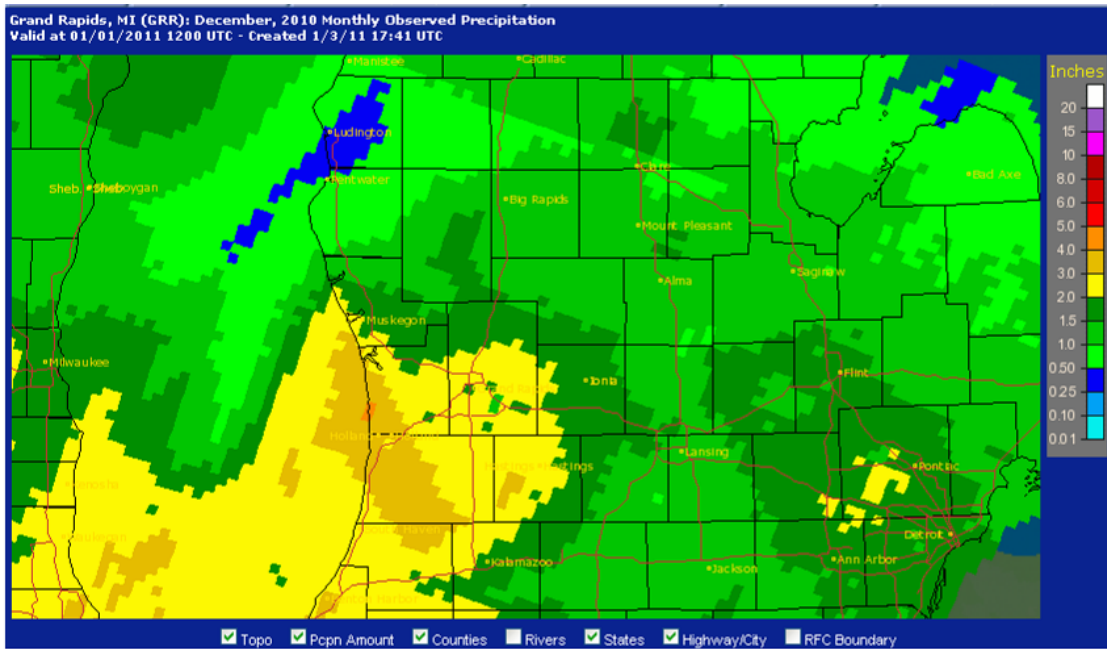


Figure 1. Observed Precipitation for December 2010

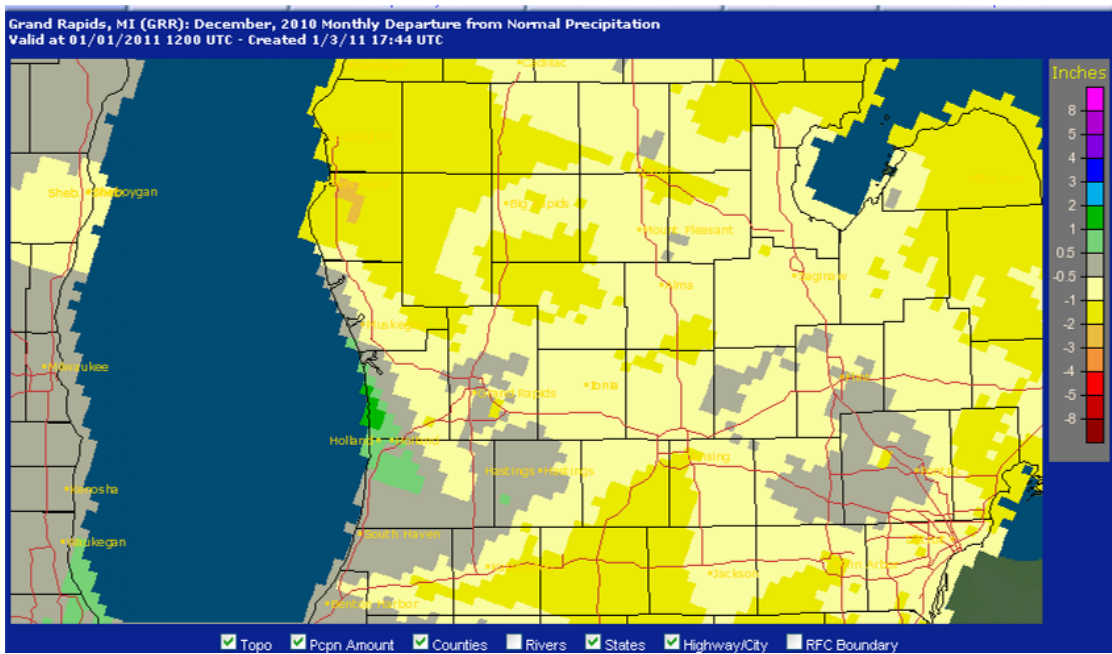


Figure 2. Monthly Departure from Normal for December 2010

Snow Depth

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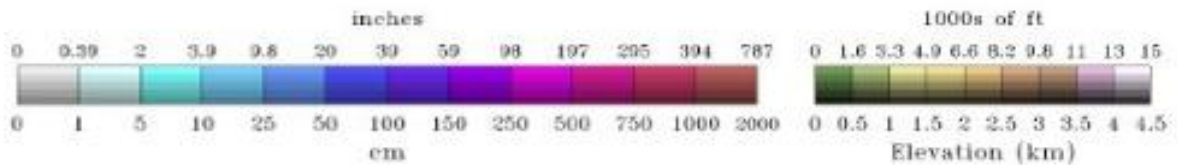
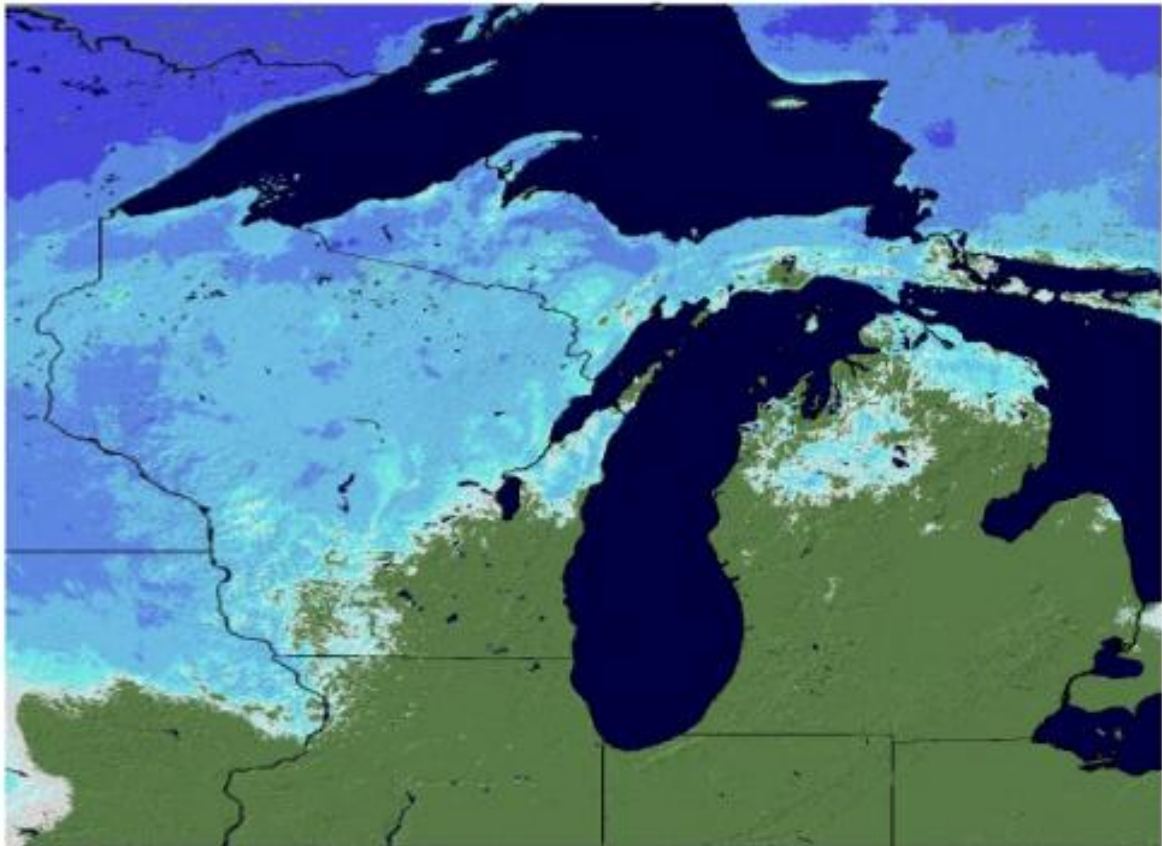


Figure 3. Snow depth at the end of December 2010.

Hydrologic Products issued this month:

- 32 Hydrologic Statements (ARBRVSGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 31 Hydrologic Summaries (ARBRVAGRR)