

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 L. Walton, Service Hydrologist

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 in our Hydrologic Service Area (HSA) during the month of July. Several areal flood advisories and flash flood warnings were issued for counties in our HSA, but no significant flooding was reported. July will be most noted for its persistent dryness, along with well above normal temperatures, which led to steadily worsening drought conditions across the area. Across Southwest Lower Michigan Moderate (D1) to Severe (D2) Drought conditions existed at the end of July.

**Flood Conditions**

Wednesday, July 4<sup>th</sup>

At 4:55 PM EDT, an areal flood advisory was issued for eastern Mecosta County and Isabella County until 11:00 PM EDT. Slow moving thunderstorms with very heavy rainfall were moving over the advisory area.

At 5:57 PM EDT, the flood advisory for eastern Mecosta County and Isabella County remained in effect until 11:00 PM EDT. Heavy rain was still falling over the advisory area.

At 6:15 PM EDT, a flash flood warning was issued for southwestern Mecosta County and southwestern Isabella County until Midnight EDT. Slow moving thunderstorms with very heavy rainfall were moving across the warned area.

At 7:35 PM EDT, a flash flood statement was issued indicating that the flash flood warning for southwestern Mecosta County and southwestern Isabella County remained in effect until Midnight EDT. Over the past two hours radar estimated rainfall of over 4 inches had fallen between Broomfield Center and Millbrook in the warned area.

At 7:42 PM EDT, the flood advisory was cancelled for eastern Mecosta County and Isabella County and replaced with a flash flood warning.

At 10:35 PM EDT, the flash flood warning for southwestern Mecosta County and southwestern Isabella County was cancelled. No reports of flooding were received.

Thursday, July 19<sup>th</sup>

At 4:43 AM EDT, a flood advisory was issued for Clare, northern Isabella, northern Mecosta, and northern Mecosta Counties until 12:30 PM EDT. Slow moving thunderstorms with very heavy rainfall were moving over the advisory area.

At 7:02 AM EDT, the flood advisory for Clare, northern Isabella, northern Mecosta, and northern Mecosta Counties remained in effect until 12:30 PM EDT. Between Reed City and Barryton, Michigan, the radar estimated over 2 inches of rainfall during a one hour period.

At 9:44 AM EDT, the flood advisory for Clare, northern Isabella, northern Mecosta, and northern Mecosta Counties was cancelled.

At 12:51 PM EDT, a drought information statement was issued for Southwest Lower Michigan. Ongoing persistent dryness along with well above normal temperatures had led to steadily worsening drought conditions across the area. Across Southwest Lower Michigan moderate (D1) to severe (D2) drought conditions existed. Near the Indiana border with Michigan, extreme drought conditions existed (D3). Many creeks and streams are running much below normal flow. Large stem river flows are in the single percentile of normal flow, with some nearing record low flows.

#### Wednesday, July 25<sup>th</sup>

At 9:49 PM EDT, a flash flood warning was issued for Mason County until 9:30 AM EDT Thursday. Slow moving thunderstorms with very heavy rainfall were moving across the warned area.

At 10:56 PM EDT, a flash flood warning was issued for Clare County until 11:00 AM EDT Thursday. Thunderstorms with very heavy rain were moving across the warned area.

At 11:50 PM EDT, a flash flood statement was issued indicating that the flash flood warning for Mason County remained in effect until 9:30 AM EDT Thursday. Over the past three hours radar estimated rainfall of 2 to 3 inches had fallen near Freesoil and Big Sable Point in the warned area.

#### Thursday, July 26<sup>th</sup>

At 12:52 AM EDT, a flash flood statement was issued indicating that the flash flood warning for Clare County remained in effect until 11:00 AM EDT. Over the past three hours radar estimated rainfall of 3 to 4 inches had fallen mostly North of Highway 61. Leota, Michigan, had measured 3.48 inches of rainfall.

At 9:03 AM EDT, the flash flood warning was cancelled for Mason County. No reports of flooding were received.

At 9:08 AM EDT, the flash flood warning was cancelled for Clare County. No reports of flooding were received.

#### Friday, July 27<sup>th</sup>

At 7:28 AM EDT, a drought information statement was issued for Southwest Lower Michigan. Ongoing persistent dryness along with well above normal temperatures had led to persistent drought conditions across the area. Across Southwest Lower Michigan moderate (D1) to severe (D2) drought conditions still existed. Near the Indiana border with Michigan, extreme drought conditions still existed (D3). Many creeks and streams are running much below normal flow. Large stem river flows are in the single percentile of normal flow, with some nearing record low flows. The Department of Public Health in Gratiot County reported over 40 residential wells going dry.

No rivers exceeded their banks during the month of July.

### **Flood Stage Report**

No rivers exceeded flood stage during the month of July.

### **River Conditions**

River levels across the HSA were near to below normal at the end of the month. 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	114
Whitehall	White	122
Evart	Muskegon	135
Mt. Pleasant	Chippewa	105
Lansing	Grand	69
Grand Rapids	Grand	69
East Lansing	Red Cedar	68
Hastings	Thornapple	101
Battle Creek	Battle Creek	59
Battle Creek	Kalamazoo	70

### **General Hydrologic Information**

For our HSA, July 2012 was a warm and dry month. July will be most noted for its persistent dryness, along with well above normal temperatures, which led to steadily worsening drought conditions across the area. Across Southwest Lower Michigan Moderate (D1) to Severe (D2) Drought conditions existed at the end of July.

July precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 2.56, 1.75, and 2.86 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 1.22 inches below normal at Grand Rapids, 1.09 inches below normal at Lansing, and 0.49 of an inch above normal at Muskegon, Michigan (Figure 2). Yearly precipitation totals were 2.25 inches below normal for Grand Rapids, 3.00 inches below normal for Lansing, and 1.47 inches above normal for Muskegon, Michigan.

Temperatures for the month of July were significantly above normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of +6.7, +6.3 and +6.5 degrees Fahrenheit, respectively.

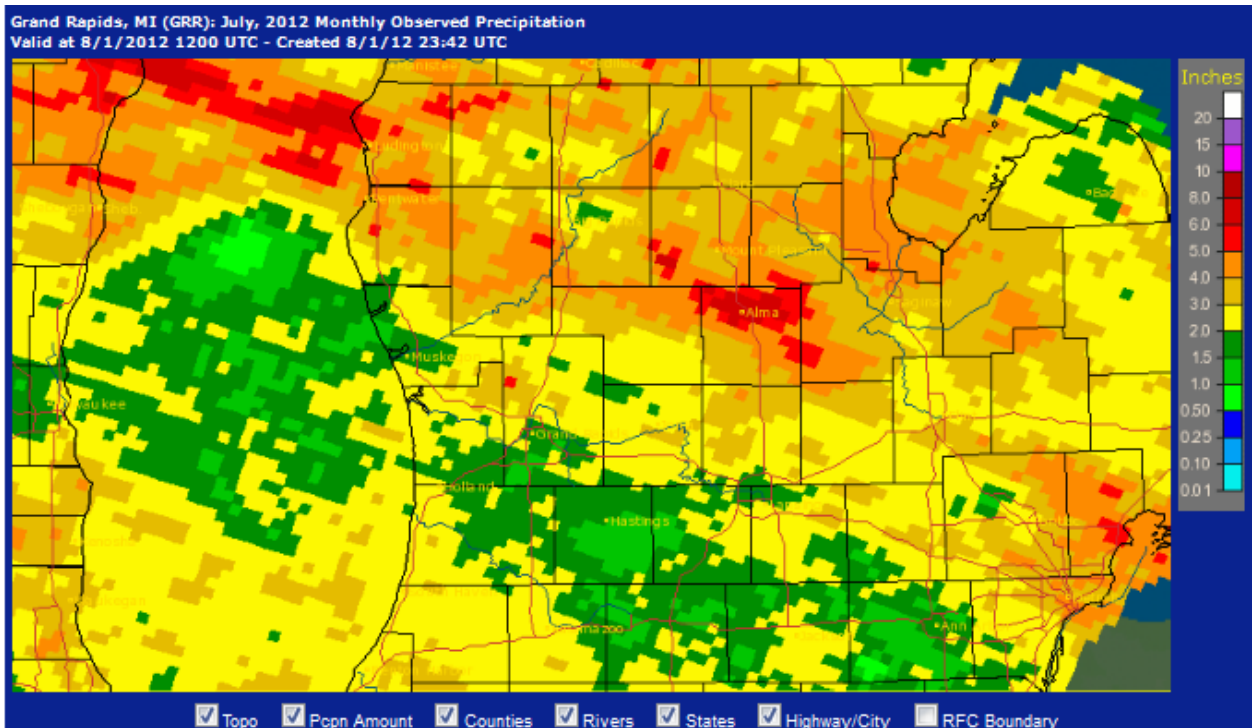


Figure 1. July 2012 Monthly Precipitation Totals

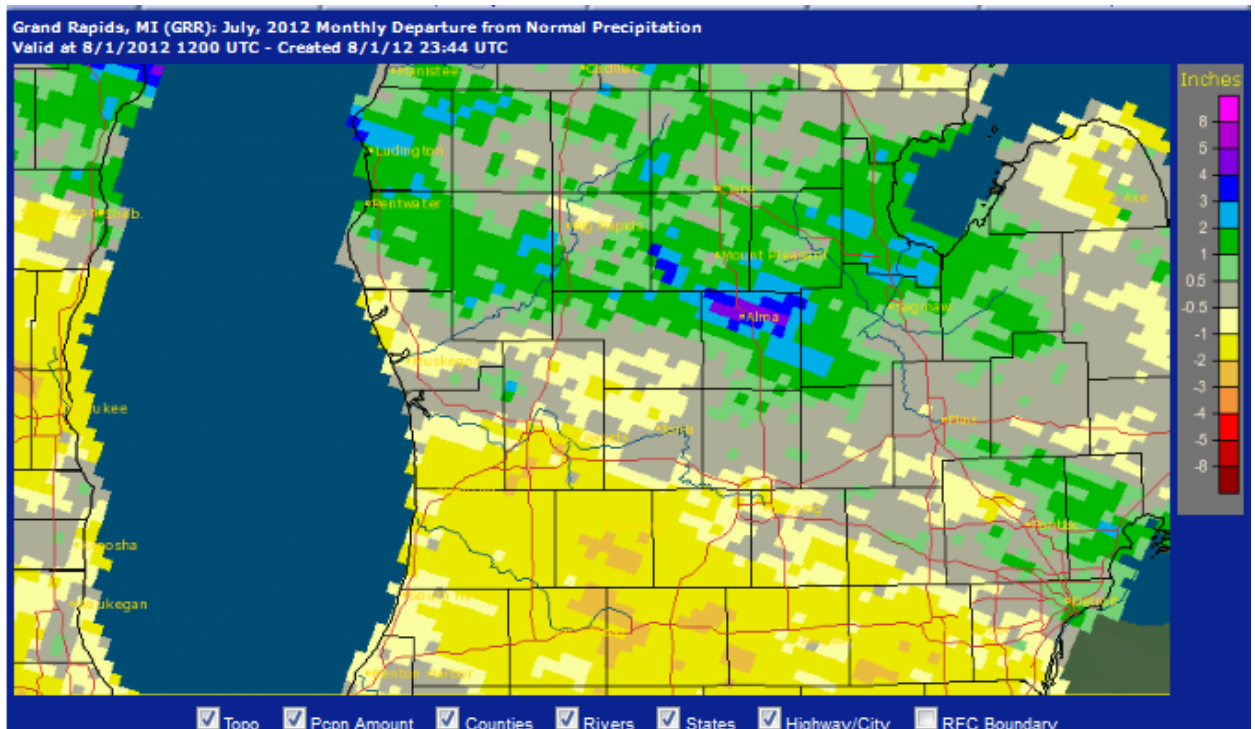


Figure 2. July 2012 Monthly Departure from Normal Precipitation Totals

**Hydrologic Products issued this month:**

- 3 Flash Flood Warnings (ARBFFWGRR)
- 6 Flash Flood Statements (ARBFFSGRR)
- 6 Areal Flood Advisories (ARBFLSGRR)
- 2 Drought Information Statements (ARBDGTGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 31 Daily River and Lake Summaries (ARBRVDGRR)
- 31 Hydrologic Summaries (ARBRVAGRR)

**News Articles and Related Documentation**

None