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

Summary

No significant flooding occurred during the month of September.

Due to a loss of funding, the following automated river gages used in river flood forecasting in our Hydrologic Service Area (HSA) will be discontinued at the end of this month by the United States Geological Survey (USGS):

1. Red Cedar River near Williamston, Michigan
2. Pine River at Alma, Michigan
3. Kalamazoo River near Marengo, Michigan

In an effort to keep river gages up and running while reducing costs the USGS is converting the following automated river gages used in river flood forecasting in our HSA to crest-stage only gages:

1. Rogue River near Rockford, Michigan
2. Grand River at Ionia, Michigan

Flood Conditions

None to report

Flood Stage Report

None to report
**River Conditions**

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

<table>
<thead>
<tr>
<th>Location</th>
<th>River</th>
<th>% of Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scottville</td>
<td>Pere Marquette</td>
<td>110</td>
</tr>
<tr>
<td>Whitehall</td>
<td>White</td>
<td>94</td>
</tr>
<tr>
<td>Evart</td>
<td>Muskegon</td>
<td>80</td>
</tr>
<tr>
<td>Mt. Pleasant</td>
<td>Chippewa</td>
<td>119</td>
</tr>
<tr>
<td>Lansing</td>
<td>Grand</td>
<td>250</td>
</tr>
<tr>
<td>Grand Rapids</td>
<td>Grand</td>
<td>136</td>
</tr>
<tr>
<td>East Lansing</td>
<td>Red Cedar</td>
<td>277</td>
</tr>
<tr>
<td>Hastings</td>
<td>Thornapple</td>
<td>171</td>
</tr>
<tr>
<td>Battle Creek</td>
<td>Battle Creek</td>
<td>165</td>
</tr>
<tr>
<td>Battle Creek</td>
<td>Kalamazoo</td>
<td>158</td>
</tr>
</tbody>
</table>

**General Hydrologic Information**

September 2011 had below normal temperatures and precipitation for our HSA.

September precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 2.23, 2.09, and 3.14 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 2.05 inches below normal at Grand Rapids, 1.41 inches below normal at Lansing, and 0.75 of an inch below normal at Muskegon, Michigan (Figure 2). Yearly precipitation totals were 7.87 inches above normal for Grand Rapids, 5.76 inches above normal for Lansing, and 7.85 inches above normal for Muskegon, Michigan.

Temperatures for the month of September were below normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of -0.9, -1.1 and -0.5 degrees Fahrenheit, respectively.
Figure 1. September 2011 Monthly Rainfall Totals

Figure 2. September 2011 Monthly Departure from Normal Rainfall Totals
Hydrologic Products issued this month:

- 8 Hydrologic Statements (ARBRVSGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 30 Hydrologic Summaries (ARBRVAGRR)
- 30 Daily River and Lake Summaries (ARBRVDGRR)

News Articles and Related Documentation

None