

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:
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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

Minor river flooding occurred during the month of June in our Hydrologic Service Area (HSA). A total of two forecast points on two rivers exceeded flood stage. Later in the month, flash flood warnings were issued for Ottawa, Kent, Calhoun, Montcalm, Isabella and Gratiot Counties. The most significant damages from flash flooding occurred in Ottawa County on the campus of Grand Valley State University where flood damages were estimated to be close to a million dollars (see attached articles).

Flood Conditions

Flood conditions in early June were carry over from the flooding that occurred in late May.

Wednesday June 1st

At 10:59 AM EDT a flood statement was issued for the following rivers:

- Grand River near Comstock Park, Michigan, flooding was occurring and the updated flood forecast called for the river to crest near 12.6 feet Wednesday afternoon.
- Portage River near Vicksburg, Michigan, flooding was occurring and the updated flood forecast called for the river to continue a slow fall, and fall below flood stage by Thursday morning.

At 9:33 PM EDT a flood statement was issued for the following rivers:

- Grand River near Comstock Park, Michigan, crested near 12.6 feet Wednesday morning and the updated flood forecast called for the river to begin a slow fall.
- Portage River near Vicksburg, Michigan, flooding was occurring and the updated flood forecast called for the river to continue a slow fall, and fall below flood stage by Thursday morning.

Thursday, June 2nd

At 10:42 AM EDT a flood statement was issued for the following rivers:

- Grand River near Comstock Park, Michigan, flooding was occurring and the updated flood forecast called for the river to continue to fall, and fall below flood stage Thursday evening.
- Portage River near Vicksburg, Michigan, flooding was occurring and the updated flood forecast called for the river to continue a slow fall, and fall below flood stage by Thursday evening.

At 9:24 PM EDT a flood statement was issued for the following rivers:

- Grand River near Comstock Park, Michigan, flooding was occurring and the updated flood forecast called for the river to continue to fall, and fall below flood stage early Friday morning.
- Portage River near Vicksburg, Michigan, flooding was occurring and the updated flood forecast called for the river to continue a slow fall, and fall below flood stage by Friday morning.

Friday, June 3rd

At 9:57 AM EDT a flood statement was issued for the following rivers:

- Grand River near Comstock Park, Michigan, flooding was occurring and the updated flood forecast called for the river to continue to fall, and fall below flood stage late Friday morning.
- Portage River near Vicksburg, Michigan, the flood warning was canceled when the river fell below flood stage and was downgraded to a river flood advisory.

At 6:00 PM EDT a flood statement was issued for the Grand River near Comstock Park, Michigan, canceling the river flood warning because the river had fallen below flood stage and was downgraded to a river flood advisory.

Wednesday, June 8th

At 10:31 PM EDT a flash flood warning was issued for Clare, Lake, Mason, and Osceola Counties effective until 4:30 AM EDT Thursday. Precipitation estimates from weather radar were indicating very heavy rain over the warned area, with over two inches of rain over the past hour.

Thursday, June 9th

At 1:39 AM EDT a flash flood statement was issued for Clare, Lake, Mason, and Osceola Counties effective until 4:30 AM EDT. Precipitation estimates from weather radar indicated a swath of 2 to 5 inches had fallen over the warned area. Moderate to occasionally heavy rain was still falling across the warned area.

At 4:25 AM EDT a flash flood statement was issued for Clare, Lake, Mason, and Osceola Counties allowing the flash flood warning to expire at 4:30 AM EDT. No specific flash flooding was reported for the warned area.

Tuesday, June 21st

At 6:20 PM EDT a flash flood warning was issued for Ottawa County effective until 11:30 PM EDT. Precipitation estimates from weather radar were indicating very heavy rain over the warned area, with over 3 inches of rain over the past several hours.

At 7:03 PM EDT a flash flood warning was issued for Kent County effective until 1:00 AM EDT Wednesday. Precipitation estimates from weather radar were indicating one to three inches over the warned area, with the heaviest rainfall over the metro area.

At 8:29 PM EDT a flash flood warning was issued for Calhoun County effective until 2:30 AM EDT Wednesday. Precipitation estimates from weather radar were indicating very heavy rain over the warned area, with over 5 inches of rain over the past several hours.

At 8:44 PM EDT a flash flood warning was issued for Gratiot, Isabella, and Montcalm Counties effective until 2:30 AM EDT Wednesday. Precipitation estimates from weather radar were indicating very heavy rain over the warned area, with 4 to 5 inches of rain over the past several hours.

At 9:48 PM EDT the flash flood warning for Ottawa County was extended until 11:30 AM EDT Wednesday. Trained spotters had reported up to 5 inches of rain north of Hudsonville, Michigan. Local law enforcement reported road washouts near the intersection of 48th and Pierce Road, and Lake Michigan Drive and Pierce Road. Ottawa County Road Commission reported that 26th Avenue between Luce Street and Winans Street was damaged, with about half of the road washout. In the city of Jenison, 17 vehicles drove into flood waters and then had to be rescued near the intersection of Church and Main Street.

At 10:06 PM EDT a flash flood statement was issued indicating that the flash flood warning for Kent County had been canceled. It was reported earlier that evening that multiple cars stalled out in water under the Railroad Bridge, near the intersection of M 28 and Division, in the city of Wyoming, Michigan. Six to eight inches of fast moving water flowed over Wilson Avenue and Lake Michigan Drive near Standale, Michigan. At the time of cancellation local law enforcement had indicated that the significant road flooding reported earlier had abated and the problem storm drains had been unplugged.

At 10:27 PM EDT the flash flood warning for Gratiot, Isabella, and Montcalm Counties was extended until 11:30 AM EDT Wednesday. Gratiot County dispatch reported up to a foot of water over many roads in the cities of Alma, St. Louis, and Ithaca, Michigan. In Isabella County, 3 miles south of Winn, Michigan, local law enforcement reported a road wash out on Fremont Road (gravel road) between Littlefield Road and South Johnson.

At 10:37 PM EDT a flash flood statement was issued indicating that the flash flood warning for Calhoun County remained in effect until 2:30 AM EDT Wednesday. Local law enforcement reported standing water on many roads on the west side of the county and in the city of Battle Creek. B Drive South, between 4 Mile Road and 4 ½ Mile Road, was reported to have flooded to a depth of 4.5 feet.

Wednesday, June 22nd

At 2:26 AM EDT the flash flood warning for Calhoun County was extended until 11:30 AM EDT.

At 11:16 AM EDT a flash flood statement was issued indicating that the flash flood warning for Gratiot, Isabella, and Montcalm Counties was canceled.

At 11:17 AM EDT a flash flood statement was issued indicating that the flash flood warning for Calhoun County was canceled.

At 11:26 AM EDT a flash flood statement was issued indicating that the flash flood warning for Ottawa County will be allowed to expire at 11:30 AM EDT. Grand Valley State University (GVSU) reported that it had the worst flooding in campus history from Tuesday night's flash flood. GVSU reported that a "wall of water blew in a set of basement double doors and flooded one hall with 5 feet of water". The flooding impacted 10 buildings on campus and flood damages were estimated to be close to a million dollars.

Thursday, June 30th

At 5:00 PM EDT a flash flood watch was issued for Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, Lake, Mason, Muskegon, Newaygo, and Oceana Counties effective through Friday afternoon. A strong warm front was forecast to move over the watch area Thursday night and into Friday morning with the potential of producing very heavy rainfall.

The following rivers exceeded bankfull during the month of June:

- Sycamore Creek near Holt, Michigan (2 days above bankfull)
- Looking Glass River near Eagle, Michigan (4 days above bankfull)
- Maple River near Maple Rapids, Michigan (7 days above bankfull)
- Thornapple River near Hastings, Michigan (4 days above bankfull)
- Grand River at Ionia, Michigan (7 days above bankfull)
- Grand River near Lowell, Michigan (4 days above bankfull)
- Grand River at Comstock Park, Michigan (4 days above bankfull)
- Grand River at Grand Rapids, Michigan (4 days above bankfull)
- Portage River near Vicksburg, Michigan (8 days above bankfull)
- St. Joseph River near Burlington, Michigan (7 days above bankfull)
- Kalamazoo River near Marshall, Michigan (1 day above bankfull)
- Kalamazoo River at Comstock, Michigan (3 days above bankfull)
- Kalamazoo River near New Richmond, Michigan (4 days above bankfull)

Flood Stage Report

Two rivers in Southwest Lower Michigan exceeded minor flood stage during the month of June.

The Portage River near Vicksburg, Michigan, with a flood stage of 5.0 feet, rose above flood stage around 2 AM EDT on May 27th, crested at 5.18 feet at around 7 AM EDT on May 30th, and fell back below flood stage around 10 AM EDT on June 2nd.

The Grand River at Comstock Park, Michigan, with at flood stage of 12.0 feet, rose above flood stage around 2 AM EDT on May 30th, crested at 12.58 feet at 7:15 AM EDT on June 1st, and fell back below flood stage around 11 AM EDT on June 3rd.

River Conditions

River levels in our HSA by the end of June were near to above normal. 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	139
Whitehall	White	140
Ewart	Muskegon	141
Alma	Pine	200
Lansing	Grand	135
Grand Rapids	Grand	166
East Lansing	Red Cedar	129
Hastings	Thornapple	111
Battle Creek	Battle Creek	133
Battle Creek	Kalamazoo	92

General Hydrologic Information

June 2011 had above normal temperatures for the entire HSA, and below normal precipitation for most of our HSA with the exception of our more northern river basins, the Muskegon, White, and Pere Marquette River Basins, which had above normal precipitation (Figure 1).

June precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 3.34, 1.85, and 2.76 inches, respectively (Figure 2). Precipitation totals for the month at these three sites were 0.33 of an inch below normal at Grand Rapids, 1.75 inches below normal at Lansing, and 0.18 of an inch above normal at Muskegon, Michigan (Figure 1). Yearly precipitation totals were 6.69 inches above normal for Grand Rapids, 5.26 inches above normal for Lansing, and 4.81 inches above normal for Muskegon, Michigan.

Temperatures for the month of June were above normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of +2.0, +1.7 and +2.6 degrees Fahrenheit, respectively.

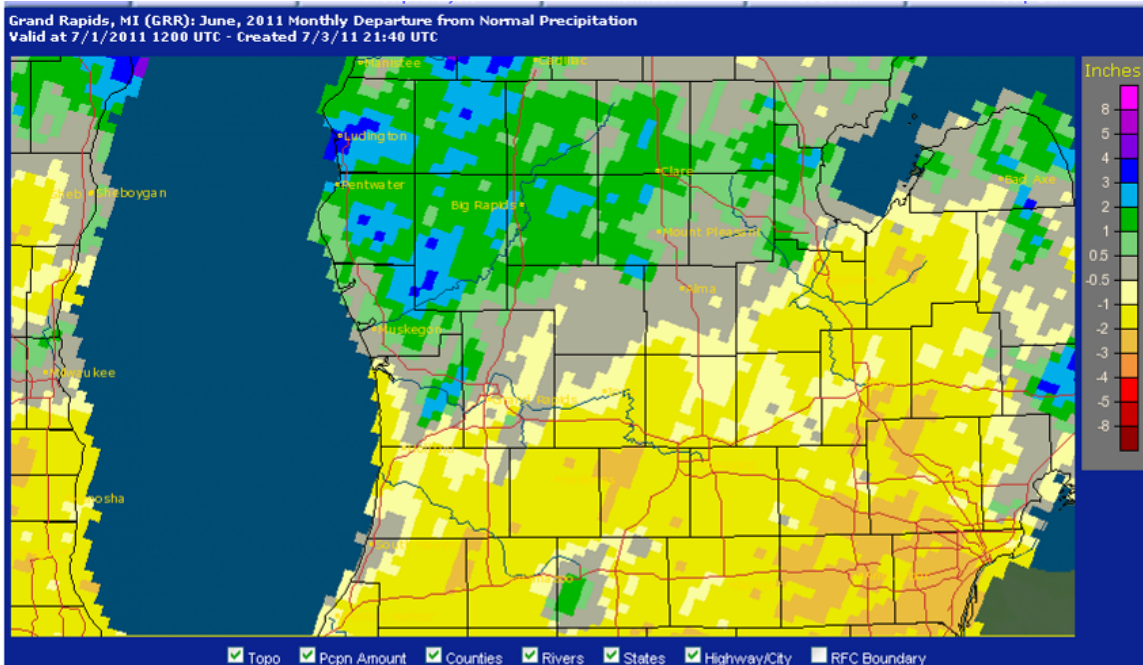


Figure 1. June 2011 Monthly Departure from Normal Rainfall Totals

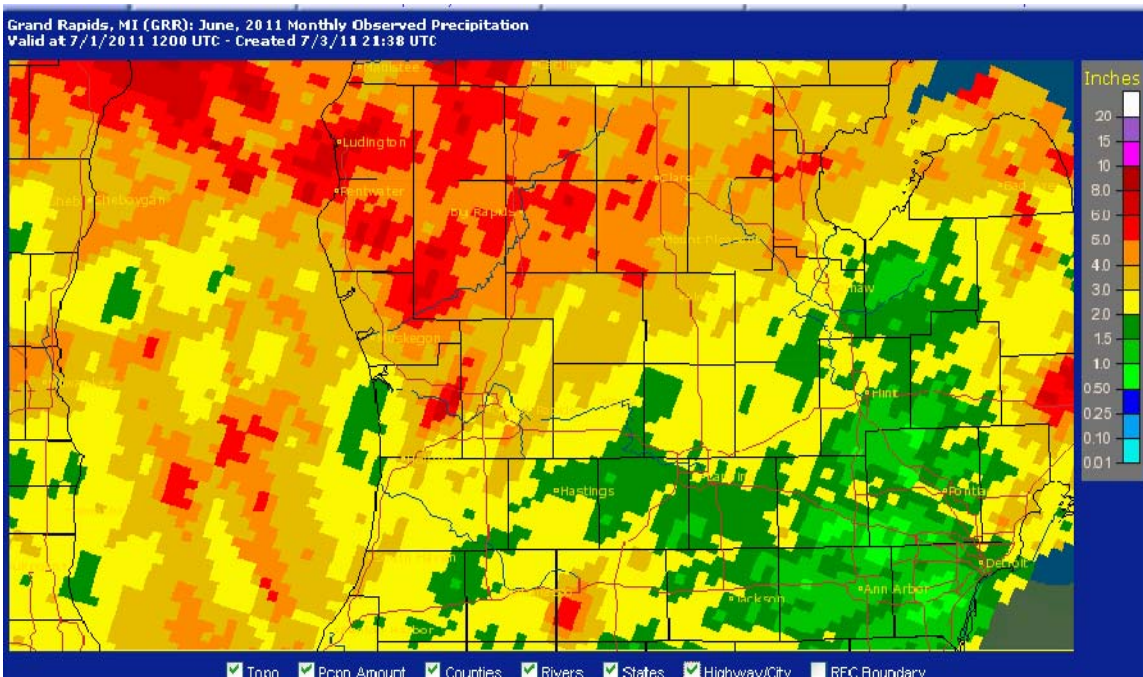


Figure 2. June 2011 Monthly Rainfall Totals

Hydrologic Products issued this month:

- 1 Flood Watch (ARBFFAGRR)
- 8 Flash Flood Warnings (ARBFFWGRR)
- 7 Flash Flood Statements (ARBFFSGRR)
- 7 River Flood Statements (ARBFLSGRR)
- 30 River Flood Advisories (ARBFLSGRR)
- 55 Hydrologic Statements (ARBRVSGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 30 Hydrologic Summaries (ARBRVAGRR)
- 30 Daily River and Lake Summaries (ARBRVDGRR)