

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

During the month of June, flash flood warnings were issued for 9 counties in our Hydrologic Service Area (HSA). Areal flood warnings were issued for 14 counties in our HSA. Minor river flooding occurred on the Thornapple River near Hastings and the Pere Marquette River near Scottville, Michigan. Flood advisories were issued for 17 counties in our HSA. Presidential Disaster Declarations were issued for Allegan, Barry, Eaton, Lake, Mason, Osceola, and Ottawa counties as the result of damage from extensive flooding. Damage to public infrastructure (mostly road and bridge washouts) was estimated to exceed 8.8 million dollars for these seven counties. Unfortunately, the significant flooding during the month of June resulted in four deaths. Three out of the four deaths occurred as the result of vehicles driving into swollen streams and rivers.

Flood Conditions

Active weather began on the 5th of June, when a line of strong thunderstorms marched through most of the HSA. A warm front lifted north into the area, and waves of showers and thunderstorms moved through over the next few days. A nearly stationary band of showers and thunderstorms extended from Milwaukee, Wisconsin, to Lansing, Michigan, allowing individual thunderstorms to move over the same area for most of the day. Rainfall amounts under this band ranged from three to locally seven inches, with most falling within a three hour period. This band of showers and thunderstorms was finally forced out of the area when a cold front swept through on June 9th. This active weather pattern produced widespread severe weather and significant flooding. A flood advisory was issued on June 6th, at 9:25 PM EDT, for Lake, Osceola, Clare, and Newaygo Counties as this band of showers and thunderstorms with isolated heavy rain moved into our HSA. At 7:40 PM EDT on June 7th, a flood advisory was issued for Muskegon, Ottawa, Kent, Ionia, Allegan, Barry, Eaton, Van Buren, Kalamazoo, Calhoun, Clinton, Ingham, and Jackson counties as another round of thunderstorms with heavy rain moved over the area. Portions of the flood advisory area were upgraded to a flash flood warning at 10:12 PM EDT (June 7th), and included Ottawa, Kent, Ionia, Allegan, Barry, and Eaton Counties. As the event progressed and flooding continued, the flash flood warning was replaced with an areal flood warning on June 8th at 4:04 AM EDT for Ottawa, Kent, Ionia, Allegan, Barry

and Eaton counties. A flood advisory was issued at 10:57 PM EDT on June 7th, for Clinton, Ingham, and Jackson Counties when thunderstorms producing very heavy rain moved into the area. A river flood warning was issued for the Thornapple River near Hastings at 10:33 AM EDT, on June 8th. At 10:27 PM EDT on June 8th an areal flood warning was issued for Muskegon, Oceana, Mason, Lake, Osceola, Newaygo, Montcalm and Mecosta Counties. The areal flooding had subsided by June 10th, and the river flood warning for the Thornapple River near Hastings was cancelled on June 13th. Some of the more significant impacts are listed below:

- In Allegan County, at approximately 4 AM EDT Sunday, June 8th, two individuals delivering the local morning newspaper drowned when their car plunged into a 50 foot ravine created by a washout road.
- In Ottawa County, at around 1 PM EDT Sunday, June 8th, a 76 year old farmer drowned while trying to remove boards from the Worley Drain Dam that regulates waters from Bass Creek.
- In Ottawa County, a significant number of roads washed out in the city of Holland and water levels on roads in some low lying locations reached the roof tops of cars.
- In Allegan, Barry, Eaton, and Ottawa counties, damage to public infrastructure (mostly road and bridge washouts) was estimated to exceed 3.5 million dollars for this event.
- A Presidential Disaster Declaration for flooding was issued for Allegan, Barry, Eaton, and Ottawa Counties, which were the hardest hit during this event.

On Thursday evening of the 12th of June, a line of thunderstorms moved northeast out of Southern Wisconsin and into West Central Lower Michigan. A flood advisory was issued for Lake and Mason Counties at 10:24 PM EDT, when heavy rain associated with thunderstorms moved into the area. The thunderstorms producing heavy rainfall continued to train across the same area and the flood advisory was upgraded to a flash flood warning for Lake and Mason counties at 10:58 PM EDT. A river flood warning was issued for the Pere Marquette River near Scottville at 3:07 AM EDT, on June 13th. At 10:32 AM EDT on June 13th, a flash flood warning was issued for northeast corner of Osceola County. As the event progressed, and the flooding continued, the flash flood warning was replaced with an areal flood warning for Mason, Lake, and Osceola Counties at 3:41 PM EDT, on June 13th. The areal flood warning was canceled on the 15th of June, when the water receded off of area roads. Rainfall totals in the hardest-hit areas for this event ranged from 5 to 11 inches and occurred over a 6 to 8 hour time period. The river flood warning for the Pere Marquette River near Scottville was cancelled on June 14th when the river fell below flood stage. Some of the more significant impacts are listed below:

- In Mason County, the Michigan Department of Transportation shut down U.S. 31 from Manistee to Scottville when the road washed out.
- In Mason County, there were four washouts on M-116 on the drive to Ludington State Park. One of those washouts was eight feet deep.
- In Mason County, the Department of Natural Resources evacuated and

then closed Ludington State Park due to flooding and concerns about the Hamlin Lake Dam.

- Mason County officials shut down 47 roads.
- In Kent County, one man died early Friday morning when his rental car drove off the road and into the Thornapple River during high flows. Sheriff's investigators believe the car entered the river about 4 AM EDT, June 13th.
- In Mason, Lake, and Osceola Counties, damage to public infrastructure (mostly road and bridge washouts) was estimated to exceed 5 million dollars for this event.
- A Presidential Disaster Declaration for flooding was issued for Mason, Lake, and Osceola Counties.

On Saturday, June 28th, at 1:17 AM EDT, a flood advisory was issued for Clinton, Ingham, and Eaton Counties when heavy rain associated with a line of thunderstorms moved over the area. No significant flood damage was reported with this event.

Flood Stage Report

The Thornapple River near Hastings, Michigan, with a flood stage of 7 feet, went above flood stage at 3:00 AM on June 9th, crested at 8.32 feet at 11:45 AM on June 10th, and fell back below flood stage on June 13th, at 3:15 AM.

The Pere Marquette River near Scottville, Michigan, with a flood stage of 5.5 feet, went above flood stage at 7:00 AM on June 13th, crested at 5.81 feet at 9:15 AM on June 13th, and fell back below flood stage on June 14th, at 9:15 PM.

Please refer to NWS Form E-3 "Flood Stage Report".

River Conditions

River levels by the end of June were near to above normal for 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	113
Whitehall	White	116
Evart	Muskegon	193
Mt. Pleasant	Chippewa	137
Lansing	Grand	100
Grand Rapids	Grand	101
East Lansing	Red Cedar	103
Hastings	Thornapple	110
Battle Creek	Battle Creek	102
Comstock	Kalamazoo	100

General Hydrologic Information

June of 2008 will most be remembered for being warmer and wetter than normal. June precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan were 5.66 4.89, and 4.76 inches, respectively. Precipitation totals for the month at these three sites were 1.99 inches above normal at Grand Rapids, 1.29 inches above normal at Lansing, and 2.18 inches above normal at Muskegon, Michigan. For the year, precipitation totals were above normal at Grand Rapids, Lansing, and Muskegon, Michigan. Yearly precipitation totals were 5.08 inches above normal for Grand Rapids, 1.41 inches above normal for Lansing, and 7.09 inches above normal for Muskegon, Michigan.

Temperatures for the month of June were above normal at Grand Rapids, Lansing, and Muskegon, with average monthly departures of +1.8, +1.9 and +0.4 degrees Fahrenheit, respectively.

Hydrologic Products issued this month:

- 10 Flood Watches (ARBFFAGRR)
- 4 Flash Flood Warnings (ARBFFWGRR)
- 9 Flash Flood Statements (ARBFFSGRR)
- 8 Areal Flood Warnings (ARBFLWGRR)
- 19 Areal Flood Statements (ARBFLSGRR)
- 14 Flood Advisories (ARBFLSGRR)
- 3 River Flood Warnings (ARBFLWGRR)
- 14 River Flood Statements (ARBFLSGRR)
- 26 Hydrologic Statements (ARBRVSGRR)
- 30 Hydrologic Summaries (ARBRVAGRR)
- 30 Daily River and Lake Summaries (ABRRVDGRR)