

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 flooding occurred within this Hydrologic Service Area.

Record flooding occurred in the Grand Rapids Hydrologic Service Area (HSA) during the month of January due to backwater from ice jams.

Extreme cold temperatures in December were followed by rain and temperatures in the 50s in early January which resulted in a significant ice jam along the Muskegon River near Rogers Heights. A flood warning was issued for the Muskegon River near Rogers Heights on January 4th. The ice jam occurred in a shallow section of the Muskegon River right before it enters into the pond at Rogers Dam, the combination of shallow depth and slow water velocity resulted in the ice getting hung up in the river. Backwater from the ice jam caused localized flooding in that area. Local emergency services reported high water flooding crawl spaces of several homes and multiple homes surrounded by water, with access roads underwater. The flood warning was discontinued on January 13th when the ice jam broke up and river levels fell back within banks.

The combination of a melting snowpack and warm rainy conditions resulted in significant rises on area rivers in our HSA beginning January 14th. The potential for flooding was mentioned in numerous Hazardous Weather Outlooks for Southwest Lower Michigan beginning January 7th. A flood watch was issued for all of our HSA on January 11th. Thunderstorms with heavy rain fell over a significant snowpack the evening of January 12th, and early in the morning on the 13th, an Urban and Small Stream Flood Advisory was issued for our entire HSA. Flood warnings were issued for 11 forecast points the morning of January 13th. Of the 11 forecast points issued in the flood warnings, one reached record flooding, three had minor flooding, and the rest crested below flood stage.

The warm rainy conditions were followed by extremely cold temperatures which resulted in significant ice build up on area rivers. The cold temperatures and rapidly fluctuating river levels resulted in significant ice jams forming on area rivers. In total, eight different ice jams formed, with four on the Grand River, one on the Kalamazoo River, one on the Flat River, one on the Thornapple River, and one on the Muskegon River.

On January 14th, an ice jam began to reform in the same location on the Muskegon River near Roger Heights and extended all the way up to the city of Big Rapids, and a flood

watch was immediately issued for this area. The flood watch was upgraded to a flood warning that evening when the ice jam caused river levels to begin exceeding its banks in the area and water began to surround homes. The ice jam exceeded 4 miles in length.

On January 17th, ice jams formed on the Grand River in Ottawa County (Robinson Twp.) and Eaton County (Delta and Windsor Twp.) A flood warning was immediately issued for the Grand River in Robinson Township as water levels were rising fast behind the ice jam and getting close to flood stage. A flood watch was issued for Delta and Windsor Townships in Eaton County along the Grand River and was upgraded to a flood warning later that day when water levels rose out of banks and began to get close to flooding homes in the Grand Pointe Subdivision. Dozens of residents filled sandbags in an effort to save their homes. Backwater from the ice jam ultimately resulted in 15 homes in the Grand Pointe Subdivision being flooded. The ice jam in Eaton County extended from the Lansing Dam all the way up to the city of Dimondale, a distance of approximately 8 miles.

On January 18th, a flood warning was re-issued for the Grand River in Robinson Township when the flood category went from minor to moderate flooding as a result of the backwater from the ice jam. . The high river levels on the Grand River in Robinson Township forced the shut off of utilities and the evacuation of 50 homes located in two subdivisions, with water levels reaching the first floor of over 43 homes. Ottawa County emergency services had declared a state of emergency for Robinson Township. Also on this day, Eaton County emergency services declares a state of emergency for Windsor Township.

On January 19th, ice jams formed on the Kalamazoo River in Allegan County (Allegan Twp.) and on the Grand River in Ionia County (Portland Twp.) and flood watches were immediately issued for both areas. The flood watch for the Kalamazoo River in Allegan Township was upgraded to a flood warning when the ice jam caused river levels to rise out of banks and flood access roads to the water treatment and waste water treatment plants in the city of Allegan. About 100 volunteer firefighters from around the county worked in assembly line fashion at the Allegan County Fairgrounds to fill more than 10,000 sandbags. The city of Allegan was forced to sandbag both treatment plants to protect them from high water as a result of the backwater from the ice jam. The flood warning for the ice jam on the Muskegon River near Rogers Heights was cancelled on the 19th when river levels fell back within banks.

On January 20th, a flood warning was re-issued again for the Grand River in Robinson Township when the flood category went from moderate to major flooding as a result of the backwater from the ice jam. Allegan County emergency management declares a state of emergency as a result of the flooding caused by the ice jam on the Kalamazoo River. Also on the 20th, the flood warning for the ice jam on the Grand River in Delta and Windsor Townships located in Eaton County was cancelled when river levels fell back within banks and river levels stabilized.

On January 21st, the flood watch for Portland Township in Ionia County along the Grand River was cancelled when river levels significantly fell in the area of the ice jam and the river levels had stabilized. The flood warning for the ice jam on the Kalamazoo River in Allegan Township located in Allegan County was cancelled when river levels fell back

within banks and river levels stabilized. Also on the 21st, the flood warning for the Grand River in Robinson Township continues and the river has reached a record level of 18.3 feet which is 5 feet above flood stage. This new record exceeds the old record of 18.0 feet set back in 1994

On January 22nd, a significant snow event resulted in the growth of many ice jams in area rivers. As a result, a flood watch was re-issued on the 22nd for the ice jam on the Kalamazoo River in Allegan County as river levels remained within bank but continued to fluctuate in the area of the ice jam which had grown to exceed 4 miles in length. A flood watch was also re-issued for the ice jam on the Grand River in Portland Township located in Ionia County when the ice jam grew by several miles overnight to a length of approximately 8 miles. A flood watch was also issued for the Flat River in Ionia County when an ice jam was reported causing significant river level fluctuations near the city of Smyrna.

On January 23rd, a flood warning was issued for the Grand River at Comstock Park when an ice jam formed just downstream in the city of Grand Rapids and caused river levels to rise back over the 6th Street Dam and flood Comstock Park. The river rose 0.85 feet above flood stage and fell back below flood stage 27 hours later as the water worked its way around the ice jam. It turns out, that after a fly over of the Grand River by one of the local TV stations, the Grand River had an ice jam that extended from Grand Haven (near Lake Michigan) through the city of Grand Rapids for a distance of over 40 river miles.

On January 24th, the flood watch for the ice jam on the Flat River in Ionia County near the city of Smyrna was cancelled when river levels fell significantly within banks and river levels stabilized. The flood warning for the Grand River at Comstock Park was cancelled when the river fell back below flood stage on the 24th.

On January 27th, the flood watch for the ice jam on the Kalamazoo River in Allegan Township located in Allegan County was cancelled when river levels fell significantly within banks and river levels stabilized in the area.

On January 28th, the flood watch for the ice jam on the Grand River in Portland Township located in Ionia County was cancelled when river levels fell significantly within banks and river levels stabilized in the area.

By January 31st, only one flood warning is still in effect for our HSA and it is for the Grand River in Robinson Township. River levels are falling and forecast to continue a slow fall. The river does not actually fall below flood stage until February 12th, 2005.

January Precipitation

January was a wet month throughout Southwest Lower Michigan. January precipitation totals at first order and contract stations across our HSA were above normal for Grand Rapids, Lansing and Muskegon, Michigan. January precipitation totals at Grand Rapids, Lansing, and Muskegon, were 4.67, 4.39, and 3.32 inches, respectively. Precipitation for the month at these three sites were 2.64 inches above normal at Grand Rapids, 2.78 inches above normal at Lansing, and 1.10 inches above normal at Muskegon, Michigan. For Lansing, it was the wettest January on record and for Grand Rapids it was the fifth wettest

January on record.

Snowfall totals for the month of January were above normal for Grand Rapids with 27.8 inches (+6.7") and Lansing with 26.8 inches (+12.8"), and below normal for Muskegon with 27.0 inches (-7.4"). Snow depth at the end of the month ranged from 6 inches at Grand Rapids and Lansing to 12 inches at Muskegon, Michigan.

January Temperatures

Temperatures for the month of January were near normal at Grand Rapids, Lansing, and Muskegon, with average monthly departures of -0.7, +0.2, and -0.4 degrees Fahrenheit, respectively. A cold snap occurred around the middle of January and resulted in significant ice formation on area rivers. The arrival of the arctic air mass, resulted in high temperatures for the next two weeks being mostly in the teens. This resulted in average temperatures of 9 to 10 degrees below normal during those two weeks, which enhanced ice formation on rivers. A return to near normal conditions closed out the month. At Grand Rapids the soil temperatures at the end of the month were 28 degrees near the surface and 38 degrees Fahrenheit at a depth of 60 inches. The cold snap in January occurred with little snow on the ground which resulted in frost depths of around 10 inches at WFO GRR at the end of the month.

January River Levels

Significant river ice and ice jams formed on most of the rivers in Southwest Lower Michigan after a cold snap in mid-January which impacted discharge/stage relationships and river gage readings. Ice jams formed on the Muskegon (Mecosta County), Flat (Ionia County), Grand (Ottawa, Kent, Ionia, and Eaton Counties), Thornapple (Kent and Barry Counties), and Kalamazoo Rivers (Allegan County). River levels across the Grand Rapids HSA by the end of January were above normal and ice impacted.

Hydrologic Products issued this month:

1 Hydrologic Outlook (ARBESFGRR) was issued
33 Flood Watches (ARBFFAGRR) were issued
12 Flood Warnings (ARBFLWGRR) were issued
99 Flood Statements (ARBFLSGRR) were issued
41 Hydrologic Statements (ARBRVSGRR) were issued
31 Hydrologic Summaries (ARBRVAGRR) were issued

cc:

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