

RIVER STAGES AND FLOODS

By BENNETT SWENSON

A number of local rain storms of unusual intensity occurred in various parts of the country during August. Noteworthy also were the high monthly totals of precipitation in the Middle Atlantic area which had one of the wettest Augusts of record.

Floods during the month were mainly local floods resulting from intense rains over small areas and which, in some cases, caused considerable damage. Floods occurred principally in New York, Pennsylvania, New Jersey, Virginia, North Carolina, Michigan, Iowa, Nebraska, Kansas, Oklahoma, and Texas.

St. Lawrence drainage.—The following report of damaging floods in Upper Michigan on August 21–22 is submitted by the Official in Charge, East Lansing, Mich.:

During the night of August 21–22, excessive rains fell over much of western Upper Michigan, centering particularly in the central and lower parts of the Ontonagon, and the upper reaches of the Potato and Cranberry River basins. The resulting flood waters in those streams and their tributaries caused much damage to highways, bridges, and other property in their paths. Three persons were drowned when the cabin in which they were sleeping, located on a creek tributary to the Potato River, was carried away.

Flood waters mounted higher than the floors of highway bridges over the Baltimore River and over the Middle Branch of the Ontonagon. A bridge over the Main Ontonagon near Rockland was carried away, and several culverts were washed out. Relatively little damage was suffered by crops.

Most of the rain fell during a period of a few hours. The rainfall at Kenton amounted to 4.92 inches, and at Ewen to 8.25 inches, while unofficial measurements exceeding 10 inches were reported from a few places.

Station	Amount (inches)	Began 21st	Ended 22d
Ironwood	2.38	8 p. m.	6:30 a. m.
Ontonagon	2.42	6 p. m. to 9 p. m., and later during the night.	
Mass	3.48	7:20 p. m.	3:15 a. m.
Watersmeet	1.25	Midnight	5 a. m.
Stambaugh	1.70	During the night	
Ewen	8.25	7:30 p. m.	After 1 a. m.
Kenton	4.92	8:30 p. m.	6:45 a. m.
Painesdale	1.10	7 p. m. to 10 p. m. (21st).	
Houghton	1.77	6 p. m.	3 a. m.
L'Anse	1.05	During the night	7 a. m.
Michigamme	2.80	10 p. m.	6 a. m.
Ishpeming	2.65	10:20 p. m.	7:30 a. m.
Marquette	1.66	21st	22d: less than 24 hrs.

Atlantic Slope drainage.—A severe thunderstorm in the vicinity of Greenfield, Montague City, Millers Falls, and Turners Falls, Mass., occurred during the late afternoon of August 14, causing considerable damage, but did not produce flood stages in the tributary or main river. At Montague City, 4.23 inches of rain fell in 4½ hours.

On August 13, heavy rains caused streams to flood in southern Schuyler and Tompkins Counties in New York. There was considerable damage to roads, bridges and crops and some homes in Watkins Glen and Montour Falls were flooded. Rapid rises occurred in the Chemung River basin but did not reach flood stage in the main streams. On August 22, thunderstorms and heavy rains in the Westfield-Fredonia, N. Y., area flooded highways and washed out roads and bridges. Due to undermining, a train was derailed near Mayville, N. Y., killing one person.

Slight overflows occurred in the Susquehanna River at Oneonta, N. Y., on the 1st and again on the 17th but no appreciable damage resulted.

In the Delaware River Basin, flash flooding occurred in the vicinity of Perkasio, Pa., on the 8th, 9th, and 10th, and a flood on Brandywine Creek on the 9th, produced a stage at Chadds Ford of 14.8 feet, or 0.2 foot lower than the 1936 flood. Considerable damage was caused by the heavy rains. High water in Perkiomen Creek resulted in some flooding in the Schuylkill at Philadelphia where the crest on August 9 was from 1 to 2 feet higher than in the flood of May 23, 1942.

Overflow in the Anticosti River northeast of the city of Washington occurred between August 7 and 11. In the District of Columbia, between 5 and 7 inches of rain fell within 48 hours on August 7–9. Local heavy rains in the middle James River basin caused slight flooding in the James River at Breomo Bluff, Va., on August 14–15 and at Columbia, Va. The heaviest rains occurred in Amherst County on the 14th, and a flash flood in Beck's Creek near Lynchburg, Va., caused a sudden rise in the James River of 7 feet at Lynchburg.

Near the middle of the month, light to very heavy showers occurred over eastern North Carolina. Fayetteville, N. C., on the Cape Fear, reported a 48-hour amount of 7.73 inches, 6.20 inches of this occurring in the 24 hours ending on the morning of the 13th. The stages in the Cape Fear were low and flood stages were not reached. Light overflows, however, occurred in the Roanoke and Neuse Rivers.

Upper Mississippi Basin.—No flooding occurred in the main channel of the Mississippi, however excessively heavy local rains caused light to moderate floods in the Iowa, Cedar, and Rock Rivers and slight overflows in the Zumbro, Whitewater, and Root Rivers.

A heavy rain of 5.25 inches at Waterloo, Iowa, on July 30, and heavy to excessive rains at points near there on July 29–30, started a rise in the Cedar River at Waterloo reaching a crest stage of 12.2 feet on August 1. On August 1–2 heavy to excessive rains continued near Cedar Rapids, Iowa. These rains combined with the rise at Waterloo, produced flood stages in the Iowa River at Wapello, Iowa.

Exceptionally intense rains over the Rock River basin in northern Illinois and southern Wisconsin on August 1–2 caused some flooding in that river. A crest stage of 10.2 feet (0.2 foot above flood stage) was reached near the mouth at Moline, Ill., on August 9.

Missouri River Basin.—High water in the Big Sioux River, which began during the last part of July, continued into August, cresting at Akron, Iowa, on the 2d at 18.3 feet. Heavy rains occurred again on August 28–29, averaging about 3 inches over the upper Floyd River area, causing moderate overflow from Sheldon, Iowa, to below James, Iowa. The Big Sioux River also was affected by the rainfall and overflowed somewhat.

A flood in the Republican River resulted from heavy rains in the vicinity of Superior, Nebr., and downstream to Scandia, Kans. The average depth of rainfall was 2.6 inches with the heaviest amounts at Superior (6.37 inches) and at Hardy, Nebr., (4.76 inches). Damages were confined to the lowest fields along the stream with more extended areas flooded near Scandia, Kans.

Slight overflows which caused no material damage occurred in the Little Blue River from Endicott, Nebr., to below Hanover, Kans. A moderate overflow of 3.5 feet was reached in the upper Solomon River at Beloit, Kans., on August 16, with some damage to crops in the lowlands.

Ohio Basin.—Local flooding occurred in the Tygart River at Dailey, W. Va., on August 9 and in the upper Holston River in Tennessee and Virginia on August 9 and 10, with more extensive floods in the Wabash River from August 1 to 5.

A report on the flooding in the Wabash River is submitted by the Official in Charge, Indianapolis, Ind., as follows:

For practically the entire month river stages throughout the Wabash River Valley were quite low. The only exception was that of a rapid rise and light to moderate flooding in the upper stretches of the Wabash River from below LaFayette to past Bluffton, Ind., near the source, as a result of excessive rainfall on the night of July 30-31, preceding. These excessive rains were confined to the area of the upper Wabash Valley, including the southern tributaries, as well as the Tippecanoe Valley on the north, and amounted to an average of about 3.5 inches from below Logansport upstream. This rather restricted and very heavy fall was undoubtedly due to the presence of moist tropical air in the upper portion of a depression trough, as influenced by the action of the fronts outlined on the 1:30 AM EST map. Rainfall was substantial but much less in amount to the northward, as well as to the southward over the upper West Fork of the White. In these areas however, it was not sufficient to produce flood waters, and faded to practically nothing in much of the south half of the State, including the Wabash Valley from and below Covington, Ind.

In general, the excessive rains began about 9 to 10 p. m. on July 30 and continued until 5 to 6 a. m. of July 31. The initial rise in the central section of the Wabash was rapid and most pronounced, as indicated by the record of the Wabash, Ind., gage; but while steady, was somewhat slower in the other sections of the district. The particularly rapid rise at Wabash was probably due to the extremely great amount of rain falling over the Salamonie tributary, which empties into the main river a short distance above the Wabash gage. Over this Salamonie section the fall was approximately 1 inch greater than in the other parts of the excessive rainfall area; and evidently passed the rate of infiltration and the initial detention capacity of the soil much sooner and in greater degree than elsewhere.

Arkansas Basin.—Heavy rains in the upper Neosho River basin caused a slight overflow at Burlington, Kans., on August 26.

Exceptionally intense rains over a period of a few hours in a small area east of Stillwater, Okla., and west of Perkins, Okla., produced unusually high stages in the smaller streams in the area between Stillwater and Tulsa, Okla. Council Creek, near Stillwater, reached the highest stage known. Damage was considerable.

West Gulf of Mexico drainage.—A severe local rain storm between Sanderson and Longfellow, Tex., on August 23, resulted in very high rates of discharge in Downy Draw and Sanderson Valley, which are both dry as a rule.

There was some overflow in the Rio Hondo in the vicinity of Roswell, N. Mex. The overflow was the result of abnormally high flow sustained throughout the month and a heavy local thundershower on August 29 over the watershed above Roswell.

FLOOD-STAGE REPORT FOR AUGUST 1942

[All dates in August unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Susquehanna: Oneonta, N. Y.	12	{ 1 17	{ 1 17	{ 12.4 12.1	{ 1 17
James:					
Bremo Bluff, Va.	19	{ 14 19	{ 15 20	{ 20.1 16.8 19.4 12.6	{ 14-15 10 15 19
Columbia, Va.	10				
Roanoke:					
Randolph, Va.	21	{ 9 10	{ 10 12	{ 23.4 37.6	{ 10 11
Weldon, N. C.	31	{ 19 15	{ 21 29	{ 33.1 11.0	{ 23-26 20-21
Williamston, N. C.	10				
Neuse: Smithfield, N. C.	13	{ 19	{ 22	{ 14.5	
MISSISSIPPI SYSTEM					
<i>Upper Mississippi Basin</i>					
Rock: Moline, Ill.	10	{ 8	{ 11	{ 10.2	{ 9
Cedar: Waterloo, Iowa.	12	{ 1	{ 1	{ 12.2	{ 1
Iowa: Wapello, Iowa.	10	{ 6	{ 8	{ 11.0	{ 7
<i>Missouri Basin</i>					
Big Sioux: Akron, Iowa.	12	{ July 31	{ 5	{ 18.3	{ 2
Floyd: James, Iowa.	14	{ 31	{ Sept. 3	{ 16.2	{ Sept. 2
Solomon: Beloit, Kans.	18	{ 14	{ 17	{ 21.5	{ 16
Republican:					
Scandia, Kans.	10	{ 26	{ 26	{ 12.3	{ 26
Concordia, Kans.	8	{ 26	{ 26	{ 8.8	{ 26
Clay Center, Kans.	15	{ 27	{ 27	{ 15.6	{ 27
Little Blue:					
Endicott, Nebr.	11	{ 27	{ 29	{ 14.4	{ 28
Hanover, Kans.	14	{ 28	{ 30	{ 15.8	{ 29
<i>Ohio Basin</i>					
Tygart: Dailey, W. Va.	9	{ 9 24	{ 9 24	{ 9.6 11.4	{ 9 24
Kentucky: Lock No. 9, Valley View, Ky.	20	{ 23	{ 23	{ 20.8	{ 23
Wabash:					
Bluffton, Ind.	10	{ 2	{ 5	{ 11.7	{ 3
Wabash, Ind.	12	{ 2	{ 4	{ 12.4	{ 4
Lafayette, Ind.	11	{ 1	{ 2	{ 12.7	{ 2
<i>Arkansas Basin</i>					
Neosho: Burlington, Kans.	23	{ 26	{ 26	{ 24.5	{ 26