

RIVER STAGES AND FLOODS FOR NOVEMBER 1948

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River stages during November were above normal for the fifth consecutive month in the Missouri basin and in portions of the Ohio River Basin in Ohio and Tennessee. It was also above normal along the Atlantic and East Gulf of Mexico Drainage Areas from Pennsylvania to Mississippi. River stages were below normal in the New England States, except Maine, for the fifth consecutive month. Heavy rainfall brought ground water and river levels back to normal in Maine for the first time in over a year.

Severe flooding with record to near record stages developed in several streams in Georgia and Alabama towards the close of the month. Flash floods forced several families to leave their homes along the Peachtree and Nancy Creeks in Georgia and along the South Chickamauga Creek near Chattanooga, Tenn. Severe flooding occurred on First Creek at Knoxville, Tenn. The rivers in South Carolina reached their highest levels in three years. Moderate flood stages were reached along the James in Virginia. Light to moderate overflow occurred in most streams in Mississippi and North Carolina with some severe flooding in portions of Mississippi. Light flooding occurred in streams in Indiana, Louisiana, and Washington, and light to moderate flooding in Florida.

Precipitation during the month was above normal east of the Mississippi River except in Florida and the central portion of Illinois. It was above normal in the States immediately to the west of the Mississippi and along an irregular belt extending through the state of Washington. The greatest precipitation (4 to 6 times normal) occurred over northern Georgia, Alabama, and central Mississippi. The first snow of the season, other than in the higher elevations, occurred in Wyoming during the second week of October and during the third week in Pennsylvania and up-state New York. Some light snow fell as far south as northern New Mexico during the beginning of November. Arkansas, Missouri, and West Virginia reported their first snow on November 10. Heavy snow fell from western Kansas to the northern Lake region from the 18th to the 20th. Snow depths ranged from several inches in western Kansas to about a foot in eastern South Dakota, much of Minnesota and northern Wisconsin. Several inches fell during the same period in eastern Washington, and in the Central and Northern Rockies. Only a light snow cover, except in the mountains, remained on the ground by the end of November.

Atlantic Slope drainage.—Heavy rains (1.5 to 2 inches) over the James River Basin in Virginia on the 28th–29th caused crests 1.9 to 4.2 feet above bank-full stage below Brevoort Bluff. Flood damage was negligible.

Only light local flooding resulted from the heavy rains over eastern North Carolina during the night of November 3d and early morning of the 4th. The rainfall averaged nearly 2 inches over the upper branches of the Cape Fear and Tar Rivers and almost 4 inches over the upper tributaries of the Neuse, but very little run-off occurred as the initial ground water stages were very low. The only above bank-full stages that occurred was on the Cape Fear at Elizabethtown and on the Neuse at Smithfield. General flooding developed on all the rivers in eastern North Carolina during the latter part of November and the beginning of December from the heavy rains on the 28th–29th. Favorable conditions, for high run-off, existed prior to this storm as occasional heavy rains during the interim period had maintained high initial ground water stages.

Most of the streams in South Carolina reached their highest levels in 3 years from the heavy rains during the 24-hour period ending at 8 a. m. on the 29th. Conditions were favorable for high run-off as the soil was saturated prior to this storm from the moderate rains that fell during an earlier rainy period of one week or more. All the rivers rose rapidly to above flood stage except the Waccamaw. Considerable damage resulted to lowland crops, highways, bridges, and some to railroad property.

A major freshet, with considerable damage, occurred in the Savannah River drainage basin at and above Butler Creek, Ga., during the last few days of the month and the first part of December. The rainfall, above Augusta, Ga., averaged 1.75 inches on the 27th, 1.25 inches on the 28th and 1.60 inches on the 29th. Several houses were washed off their foundations.

The Ocmulgee River, at Macon, Ga., topped the previous highest stage of 26.1 feet of March 22, 1942, by 1.9 feet. It crested within 2 days after reaching flood stage on the 27th. Such severe flooding is unusual in the normally dry month of November. This year it was unusually wet, especially after the 19th, with no less than 7 days of heavy to excessive rain. The first important rain occurred on the 19th–20th with 1 to 3 inches of rain falling over the extreme upper reaches of the Ocmulgee. Two to four inches of additional rain fell over the upper half of the basin during the period 22d–24th. The most important rains occurred on the 27th when upper and middle stream stations reported 3 inches or more. Additional heavy rain occurred on the two following days. Much of Macon, nearest to the river, was inundated forcing many families to leave their homes. Damage to streets, roads, bridges, building foundations, equipment and furnishings of homes and stores was considerable. Flash floods occurred in the Atlanta area on the Peachtree and Nancy Creeks from the excessive rains on the 27th, flooding a large number of homes and other buildings. Twenty-five families were forced to leave their homes and others had to be evacuated by boat. Considerable damage was done to building foundations, furnishings, lawns, streets, and roads. One radio transmitting station was put out of service.

East Gulf of Mexico drainage.—The Chattahoochee River rose to several feet above bank-full stage from Norcross, Ga., to Columbia, Ala., during the latter part of November. This flooding was due to recurrent heavy to excessive rains during the last decade of the month. One to 3 inches of rain fell over the entire length of the river on the 19th–20th. Two to four inches of additional rain fell from the 22d–24th with the heaviest falls between West Point and Athens, Ga. Five to seven inches occurred between West Point and Griffin, Ga., on the 27th with additional heavy rains on the 28th–29th. The river at West Point rose into yards and stores in some sections causing damages to furnishings.

The Flint River rose rapidly after the heavy rains on the 27th inundating several acres of farm land and damaging roads and bridges. At Montezuma, Ga., the river rose to a depth of 4 feet in some streets.

Heavy to excessive rains during the period from the 16th–28th caused moderate flooding in the Conecuh River in Alabama and slight flooding in the lower Choctawhatchee in Florida. The rainfall averaged almost 11 inches during this period. Most of the damage along the Conecuh River was to crops, livestock, highways, and bridges. Only minor damage occurred along the Choctawhatchee.

The heavy rains of the 26th–27th brought one of the few large November rises in the history of both the Warrior and Tombigbee Rivers. The rains averaged 5.5 inches

over the Warrior Basin, 6.7 inches from Demopolis to Jackson, Ala., and 4 inches over the Upper Tombigbee area. The initial ground water stages were high due to the recurrent, unseasonably heavy rains during the decade preceding this rain.

The second highest November crest of record (63.5 feet) was reached on the Warrior at Tuscaloosa, Ala., at 6 a. m. on the 29th. It rose 32 feet in 48 hours and 18 feet during the last 24 hours.

The highest crest of record for this time of year (37.4 feet) was recorded on the Upper Tombigbee at Aberdeen, Miss., on December 1 (previous highest stage was 36.9 feet in 1925). The crest at Demopolis, Ala. (59.1 feet), was the highest since December 1932 (62.7 feet), and the second highest December crest of record. The crest passage was slowed up at Lock No. 1 (Jackson, Ala.) by the unusually high water in the Alabama River. When both rivers are high at the same time they merge at a considerable distance north of where they usually join to form the Mobile River. The water from the Alabama backed up or held up the water from the Tombigbee, and as a result the flow of the Tombigbee was not only held up at Lock No. 1, but the bayous and creeks 15 to 20 miles north of Mobile were from 4 to 6 feet above normal levels until the 4th week in December.

The second highest stage of record (26 feet) was reached on the Pearl River at Edinburg, Miss., on December 1 (previous highest crest, 26.2 feet, March 8, 1935). Heavy to severe flooding was in progress along the Pearl as far as Pearl River, La., by the end of the month. Record to near record stages were occurring along the Leaf River in Mississippi and moderate to heavy flooding along the Chickasawhay.

Upper Mississippi Basin—For the second consecutive month, stream flow was unusually low in the extreme upper Mississippi, Chippewa, and Wisconsin Rivers and the water in the reservoirs was reduced to such low levels that hydroelectric power was cut down. Even though precipitation was near normal during the month it did not increase the stream flow appreciably.

Thin ice formed on the pools in the Mississippi during the last decade.

Ohio Basin—Slight flooding occurred along the West Fork of the White River at Edwardsport, Ind., from the 7th to the 9th due to the heavy rains on the 5th and 6th.

Heavy rains (2.5 inches) over the French Broad River in western North Carolina on the 28th–29th resulted in slightly above bank-full stages at Asheville and Hot Springs. November 1948, was the wettest November on record (7.15 inches) at Asheville. The previous record was 4.85 inches in 1938. The discharge of the French Broad at Asheville was the greatest for November in a period of 50 years.

The storm of the 27th–29th, over the Tennessee River Basin climaxed a month of frequent heavy rain and established a new record of rainfall over the basin for November. Ground conditions were ideal for high run-off as this storm followed within 12 hours a general rain

(0.8 inch) over the basin. Some very high flows resulted.

The average rainfall over the entire drainage area of 40,000 square miles was 2.92 inches. Approximately 2.75 inches fell over the lower half of the basin and 3.25 inches over the upper half. The main river drainage area between Chattanooga and Knoxville received the greatest concentration of rain with a general average over this portion of about 4.25 inches. The highest amount recorded during this storm was 6.05 inches at Twenty-Mile, in the mountains of western North Carolina.

The stages on the main river were held below flood level at critical points through the regulation and control activities of the Tennessee Valley Authority. Some agricultural lowlands immediately below some of the downstream dams were flooded. Along the main river at Chattanooga the highest point reached was 28.9 feet (30 feet flood stage).

Several unregulated creeks rose to flood stage and above for a short period. Most damaging of these were South Chickamauga Creek near Chattanooga, Tenn., and First Creek in Knoxville, Tenn. South Chickamauga Creek reached a record stage of 19.8 feet. It rose so rapidly that many houses were flooded and people and livestock had to be evacuated. Brainerd Hills and East Brainerd, two new subdivisions along the Chickamauga Creek are subject to flooding at a stage of 18.5 feet. Some damage resulted to basements, yards, shrubbery, and roads in these subdivisions.

Lower Mississippi Basin.—Rainfall averaged over 14 inches over the Yazoo Basin during the month. This was the greatest recorded rainfall in the basin in over 50 years. Nearly half of the rain fell during the storm of the 18th–19th with most of it falling during a 24-hour period. Rains ranged from 5 to 8 inches with the heaviest rains falling over the central Yalobusha Basin. Rivers rose rapidly as a result of this excessive fall, and considerable farm and woodland was overflowed with considerable damage. The Tallahatchie River crested at Swan Lake, Miss., 2.6 feet above bank-full stage on December 1. The Mississippi River remained well below flood stage throughout the month.

In the Atchafalaya Basin strong on-shore winds and the accompanying high tide caused the lower Atchafalaya River to rise above bank-full stage at Morgan City, La., for several hours during the night of the 18th–19th. No damage was reported.

West Gulf of Mexico drainage.—Scattered heavy rains over the Calcasieu River Basin during the last half of the month caused the Calcasieu to rise to 2.3 feet above flood stage at Kinder, La., by the 30th. It was still rising at the end of the month.

Pacific Slope drainage.—Two small freshets occurred in the Columbia Basin during November.

Heavy rains during the 24-hour period ending during the morning of the 24th caused moderate flooding in the Snohomish River at Snohomish, Wash., and the Snoqualmie River at Tolt, Wash., with light flooding in the Skykomish River at Gold Bar, Wash.

FLOOD STAGE REPORT FOR NOVEMBER

[All dates in May unless otherwise specified]

| River and station | Flood stage | Above flood stages—dates | | Crest ¹ | |
|-------------------------------------|-------------|--------------------------|---------|--------------------|-----------|
| | | From— | To— | Stage | Date |
| | | | | | |
| ATLANTIC SLOPE DRAINAGE | | | | | |
| James: | | | | | |
| Bremo Bluff, Va. | 19 | 29 | 30 | 20.9 | 30 |
| Columbia, Va. | 18 | 29 | 30 | 22.2 | 30 |
| State Farm, Va. | 12 | 30 | Dec. 1 | 15.5 | 30 |
| Richmond, Va. | 8 | 30 | Dec. 1 | 10.0 | 30-Dec. 1 |
| Roanoke: | | | | | |
| Alta Vista, Va. | 10 | 29 | (?) | 23.0 | 29 |
| Randolph, Va. | 21 | 29 | (?) | 24.0 | 29 |
| Weldon, N. C. | 31 | 30 | (?) | | |
| Scotland Neck, N. C. | 28 | 30 | (?) | | |
| Williamston, N. C. | 10 | 27 | (?) | | |
| Tar: Rocky Mount, N. C. | 9 | 30 | (?) | | |
| Neuse: | | | | | |
| Neuse, N. C. | 14 | 29 | (?) | | |
| Smithfield, N. C. | 13 | 5 | 7 | 15.5 | 6 |
| Goldsboro, N. C. | 14 | 29 | (?) | | |
| Kinston, N. C. | 14 | 30 | (?) | | |
| Cape Fear: | | | | | |
| Moncure, N. C. | 20 | 29 | 29 | 23.1 | 29 |
| Fayetteville, N. C. | 35 | 30 | (?) | 44.3 | 30 |
| | | 6 | 6 | 21.4 | 6 |
| Lock No. 2, Elizabethtown, N. C. | 20 | 26 | 26 | 20.8 | 26 |
| Lynchess: Effingham, S. C. | 14 | 30 | Dec. 7 | 15.9 | Dec. 5 |
| Pee Dee: | | | | | |
| Cheraw, S. C. | 30 | 29 | Dec. 2 | 37.0 | 30 |
| Pee Dee, S. C. | 19 | 26 | (?) | 24.2 | Dec. 5 |
| Black: Kingstree, S. C. | 12 | 30 | Dec. 5 | 12.5 | Dec. 3 |
| Saluda: | | | | | |
| Pelzer, S. C. | 6 | 27 | (?) | 12.3 | 29 |
| Chappells, S. C. | 13 | 29 | Dec. 2 | 24.6 | 29 |
| Broad: | | | | | |
| Gaffney, S. C. | 10 | 29 | 29 | 12.4 | 29 |
| Blairs, S. C. | 14 | 28 | Dec. 2 | 29.0 | 30 |
| Congaree: Columbia, S. C. | 19 | 29 | Dec. 1 | 25.6 | 30 |
| Catawba: | | | | | |
| Catawba, N. C. | 8 | 29 | 30 | 10.5 | 29 |
| Catawba, S. C. | 11 | 29 | 30 | 19.0 | 29 |
| Wateree: Camden, S. C. | 23 | 29 | Dec. 2 | 31.4 | 30 |
| Broad: Carlton, Ga. | 15 | 27 | 30 | 23.6 | 29 |
| Edisto: | | | | | |
| Orangeburg, S. C. | 8 | 23 | Dec. 6 | 9.6 | 30 |
| Givhans Ferry, S. C. | 10 | 29 | (?) | 14.6 | Dec. 3 |
| Savannah: | | | | | |
| Calhoun Falls, S. C. | 8 | 29 | 29 | 8.5 | 29 |
| Augusta, Ga. | 32 | 29 | (?) | 36.2 | 30 |
| Butler Creek, Ga. | 21 | 28 | (?) | 26.4 | 30 |
| Ogeechee: Midville, Ga. | 6 | 30 | (?) | | |
| Ocmulgee: Macon, Ga. | 18 | 27 | 30 | 28.0 | 28-29 |
| Oconee: Milledgeville, Ga. | 20 | 27 | 30 | 38.5 | 29 |
| EAST GULF OF MEXICO DRAINAGE | | | | | |
| Chattahoochee: | | | | | |
| Norcross, Ga. | 16 | 29 | 30 | 19.6 | 30 |
| West Point, Ga. | 19 | 27 | 30 | 22.4 | 29 |
| Columbus, Ga. | 34 | 27 | 30 | 42.0 | 28 |
| Eufaula, Ala. | 40 | 28 | 30 | 55.1 | 30 |
| Columbia, Ala. | 42 | 29 | 30 | 48.5 | 30 |
| Flint: Montezuma, Ga. | 20 | 30 | 30 | 24.4 | 30 |
| Apalachicola: Blountstown, Fla. | 15 | 15 | 23 | 20.6 | 30 |
| Choctawhatchee: Caryville, Fla. | 12 | 24 | Dec. 6 | 13.2 | Dec. 2 |
| Conecuh: | | | | | |
| River Falls, Ala. | 35 | 27 | Dec. 1 | 41.6 | 30 |
| Brewton, Ala. | 17 | 28 | Dec. 5 | 21.2 | Dec. 2 |
| Oostanaula: | | | | | |
| Resaca, Ga. | 22 | 29 | Dec. 3 | 31.4 | 30 |
| Rome, Ga. | 25 | 28 | Dec. 5 | 31.9 | 30 |
| Etowah: | | | | | |
| Canton, Ga. | 17 | 29 | 30 | 22.0 | 29 |
| Cartersville, Ga. | 24 | 29 | 30 | 30.0 | 29 |
| Coosa: | | | | | |
| Gadsden, Ala. | 22 | 28 | Dec. 10 | 28.8 | Dec. 4-5 |
| Childersburg, Ala. | 25 | 29 | Dec. 1 | 28.3 | 30 |
| Wetumpka, Ala. | 45 | 28 | Dec. 4 | 54.6 | 29 |
| Tallapoosa: Milledgeville, Ala. | 40 | 27 | 30 | 49.0 | 28 |
| Cahaba: Centerville, Ala. | 23 | 28 | 30 | 33.6 | 28 |

FLOOD STAGE REPORT FOR NOVEMBER 1948—Con.

| River and station | Flood stage | Above flood stages—dates | | Crest | |
|---|-------------|--------------------------|---------|-------|------------|
| | | From— | To— | Stage | Date |
| | | | | | |
| Alabama: | | | | | |
| Montgomery, Ala. | 45 | 28 | Dec. 6 | 56.0 | 30-Dec. 1 |
| Seima, Ala. | 47 | 28 | Dec. 9 | 56.3 | Dec. 3 |
| Millers Ferry, Ala. | 48 | 27 | Dec. 13 | 56.3 | Dec. 10 |
| Black Warrior: | | | | | |
| Tuscaloosa Lock and Dam, Ala. | 47 | 28 | Dec. 2 | 63.5 | 29 |
| Lock No. 7, Eutaw, Ala. | 35 | 29 | Dec. 11 | 52.8 | Dec. 3 |
| Tombigbee: | | | | | |
| Aberdeen, Miss. | 34 | 22 | 24 | 34.6 | 23 |
| | | 29 | Dec. 4 | 37.4 | Dec. 1 |
| Gainesville, Ala. | 36 | 28 | Dec. 12 | 45.4 | Dec. 6 |
| Lock No. 4, Demopolis, Ala. | 39 | 23 | Dec. 15 | 59.1 | Dec. 6-7 |
| Lock No. 3 | 33 | 21 | (?) | 58.2 | Dec. 8 |
| Lock No. 2 | 46 | 27 | Dec. 18 | 59.6 | Dec. 9 |
| Lock No. 1 | 31 | 24 | (?) | 40.1 | Dec. 12-13 |
| Leaf: | | | | | |
| Hattiesburg, Miss. | 22.5 | 28 | Dec. 2 | 24.1 | 29 |
| Beaumont, Miss. | 20 | 23 | 25 | | |
| | | 26 | Dec. 6 | 26.3 | Dec. 1 |
| Chickasawhay: | | | | | |
| Enterprise, Miss. | 20 | 27 | Dec. 2 | 32.5 | 30 |
| Shubuta, Miss. | 30 | 28 | Dec. 6 | 35.7 | Dec. 3 |
| Waynesboro, Miss. | 35 | Dec. 3 | Dec. 5 | 37.9 | Dec. 4 |
| Pascagoula: Merrill, Miss. | 22 | 25 | (?) | 25.7 | 28 |
| | | 22 | 22 | | |
| Bogue Chitto: Franklinton, La. | 11 | 26 | 28 | 12.9 | 27 |
| | | 28 | (?) | | |
| Pearl: | | | | | |
| Edinburg, Miss. | 20 | 27 | (?) | 26.0 | Dec. 1 |
| Jackson, Miss. | 18 | 20 | (?) | 32.9 | Dec. 6 |
| Monticello, Miss. | 15 | 26 | (?) | 22.9 | Dec. 2 |
| Columbia, Miss. | 17 | 27 | (?) | 21.2 | Dec. 3 |
| Bogalusa, La. | 15 | 21 | (?) | | |
| Pearl River, La. | 12 | 24 | (?) | 16.7 | 30 |
| MISSISSIPPI SYSTEM | | | | | |
| <i>Ohio Basin</i> | | | | | |
| White: Edwardsport, Ind. | 12 | 7 | 9 | 12.7 | 8 |
| <i>French Broad:</i> | | | | | |
| Asheville, N. C. | 6 | 28 | Dec. 1 | 8.3 | 28 |
| Hot Springs, N. C. | 8 | 28 | 30 | 9.8 | 28 |
| First Creek: Knoxville, Tenn. | 5 | 28 | 29 | 7.2 | 28 |
| South Chickamauga Creek: Chickamauga, Tenn. | 10 | 28 | Dec. 1 | 19.8 | 29 |
| Squatchee: Whitwell, Tenn. | 12 | 28 | Dec. 2 | 15.7 | 29 |
| Elk: Prospect, Tenn. | 21 | 28 | Dec. 1 | 26.7 | 30 |
| Shoal Creek: Iron City, Tenn. | 9 | 28 | 29 | 13.7 | 28 |
| Bear Creek: Bishop, Ala. | 11 | 18 | Dec. 2 | 16.1 | 29 |
| Duck: Hurricane Mills, Tenn. | 17 | 30 | Dec. 2 | 18.1 | Dec. 1 |
| <i>Tennessee:</i> | | | | | |
| Paducah (nr), Ky. | 34 | Dec. 1 | Dec. 9 | 39.3 | Dec. 5 |
| Florence, Ala. | 18 | 28 | Dec. 4 | 22.6 | 29 |
| Savannah, Tenn. | 39 | Dec. 1 | Dec. 5 | 41.0 | Dec. 4 |
| <i>Lower Mississippi Basin</i> | | | | | |
| Tallahatchie: Swan Lake, Miss. | 26 | 23 | (?) | | |
| <i>Atchafalaya Basin</i> | | | | | |
| Atchafalaya: Morgan City, La. | 6 | 18 | 19 | 6.4 | 18 |
| WEST GULF OF MEXICO DRAINAGE | | | | | |
| Calcasieu: Kinder, La. | 16 | 29 | Dec. 3 | 18.7 | 30 |
| PACIFIC SLOPE DRAINAGE | | | | | |
| <i>Puget Sound</i> | | | | | |
| Snoqualmie: Tolt, Wash. | 50 | 24 | 25 | 53.0 | 24 |
| Skykomish: Gold Bar, Wash. | 10 | 24 | 24 | 10.1 | 24 |
| Snohomish: Snohomish, Wash. | 20 | 24 | 26 | 24.7 | 24 |

¹ Provisional.
² Continued at end of month.