Floods of May 1968 in South Arkansas

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1970-A

Prepared in cooperation with the Arkansas State Highway Commission

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By R. C. GILSTRAP

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By R. C. Gilstrap

ABSTRACT

The floods of May 1968 in south Arkansas produced the greatest peak discharges in the history of recorded streamflow at several gaging stations. Most notable of these floods was on Cossatot River near DeQueen, which has a continuous record since 1938. The peak discharge of 122,000 cubic feet per second was almost twice the previous maximum discharge of 62,000 cubic feet per second in 1961. At Lake Greeson near Murfreesboro, water flowed over the spillway for the first time since construction of the dam in 1949. The lake reached an elevation of 564.60 feet, which is 1.60 feet above the spillway crest. The previous maximum stage of 557.84 feet occurred in 1953. No lives were lost as a result of the flood, but property damage amounted to about $18 million.

Heavy rains began on May 7 and continued to May 18. The periods of heaviest rainfall were May 9–10, 13, and 16–17. The maximum 24-hour rainfall recorded was 10.1 inches at Gillham Dam near DeQueen on May 13.

INTRODUCTION

Heavy rain fell on south Arkansas from May 7–18, with the greater amounts falling in a belt from Little Rock to the southwest corner of the State (fig. 1). In general, runoff from the rainfall of May 9–10 was not heavy. But, wetting of the soil during this period induced the high rates of runoff and severe flooding across the entire storm area from rains of May 13. Floods during the period May 9–10 were greatest on the upper reaches of Saline River, tributary to Ouachita River, and on Little Missouri River and tributaries, and Caney Creek, tributary to Red River. Many of the streams rose rapidly after rainfall of as much as 10.1 inches in 24 hours; however, most of the floods were of short duration, with the exception of those on a few of the larger and slower flowing streams. The greatest flooding during the period May 16–17 was on Smackover Creek and on the smaller streams in the southern part of the storm area. Floods on Bayou Bartholomew were not outstanding.

Extensive damage, estimated at $18.3 million, was caused by flooding during the storm period. Fortunately, no lives were lost, although

many residential and industrial areas were flooded. Millions of acres of timberland, productive farmland, and pastures were inundated, eroded, and silted over. Many highways and highway bridges were inundated, washed out, or otherwise damaged.

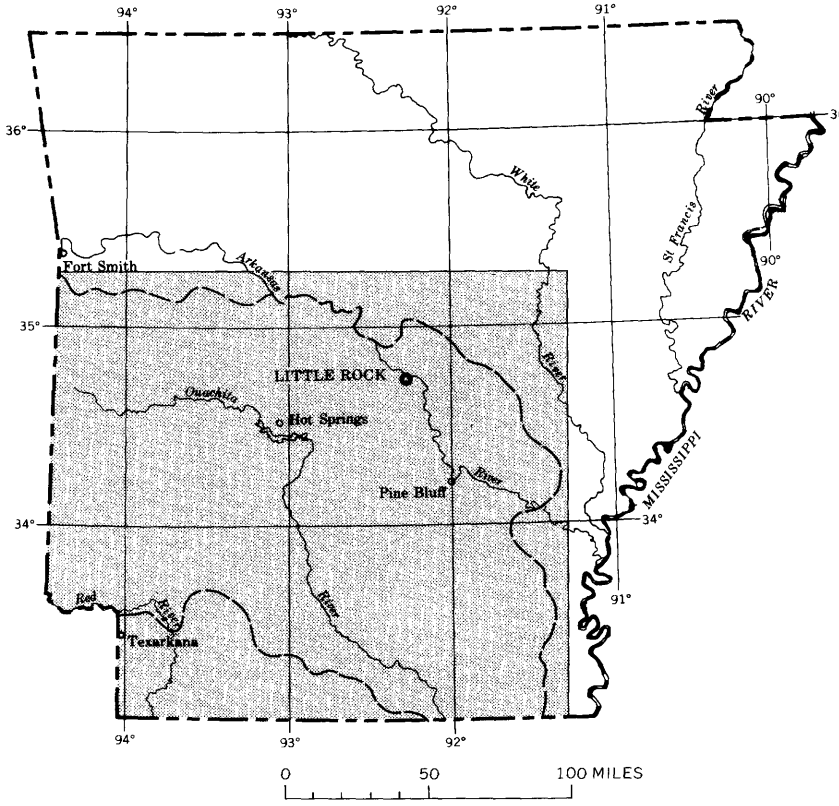

FIGURE 1.—Map showing area of report (shaded) and approximate flood boundary (dashed lines).

The purpose of this report is to supplement, in a more detailed form, data of stage and discharge published in the annual surface-water records of the U.S. Geological Survey. This report includes: discussion of precipitation, a description of floods, information on flood damage, flood profiles, flood-frequency data, rainfall and runoff data, a summary table of stages and discharges, and detailed information on stages, discharge, and reservoir contents for May 1968.

Flood data included in this report were collected at 95 sites as shown on plate 1. Each of these sites is given an identifying number for reference in the report. The sites are numbered sequentially in downstream

order. A permanent U.S. Geological Survey gaging-station number is also shown, except for a few miscellaneous sites on a few U.S. Army Corps of Engineers stations where permanent numbers have not been assigned.

ACKNOWLEDGMENTS

The data in this report were collected as part of the cooperative programs between the U.S. Geological Survey and the U.S. Army Corps of Engineers, the Arkansas State Highway Commission, and the Arkansas Geological Commission. The U.S. Weather Bureau and other Federal agencies, several State and private organizations, and individuals supplied information in this report, and appropriate acknowledgment is made in the text.

The data were collected and compiled in the district office under the supervision of R. T. Sniegocki, district chief, Arkansas District, Water Resources Division.

The field surveys and office computations were coordinated by E. P. Mathews, assistant district chief, and J. L. Patterson, associate district chief.

Cooperation of the U.S. Weather Bureau in providing rainfall data and the Corps of Engineers in providing estimates of flood damage is gratefully acknowledged.

DEFINITIONS OF TERMS AND ABBREVIATIONS

The terms and abbreviations of streamflow and other hydraulic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to gaging stations where a continuous record of discharge is obtained.

Crest-stage gaging station is a partial-record station at a particular site where peak streamflow data are collected systematically during a period of years for use in hydrologic analysis.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second. The volume of water represented by a flow of 1 cubic foot per second for 24 hours is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.03719 inch from 1 square mile.

Acre-foot (acre-ft) is the quantity of water required to cover an acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, or 325,851 gallons. The term is usually used in relation to storage and volume of runoff.

Runoff, in inches (in.), is the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on its surface.

Contents is the volume of water in a reservoir or lake expressed in acre-feet. Volume is computed on the basis of a level pool and does not include bank storage.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as a volume per unit of time.

Cubic feet per second per square mile (cfs per sq mi) is the average nuber of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Time of day is expressed in 24-hour time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. All time noted is Central Daylight Time.

PRECIPITATION

Antecedent precipitation in the area included in this report had some effect on the rate of runoff. Monthly totals of precipitation, which consisted of snow and rain during March and hail and rain during April, ranged from 2.43 to 12.35 inches, averaged more than 6 inches across the storm area, and were above normal in March and slightly above normal in April. The precipitation of March and April had the same general distribution across the storm area as that of May. As a result of these 2 months of above-normal precipitation, streamflow was considerably above normal at the beginning of the flood period.

The primary cause of the floods was the heavy rain that began on May 7 and continued to May 18. Periods of heaviest rainfall were May 9–10, 13, and 16–17. Most of the rain fell on May 13, with 7.5 inches recorded at several stations and 10.1 inches at Gillham Dam. Several rain gages recorded rates of rainfall of more than 2 inches per hour. The gage at Gillham Dam recorded 2.6 inches per hour. Monthly totals of rainfall at stations in south Arkansas for May 1968 ranged from 5.74 to 21.55 inches. Several stations recorded more than 20 inches of rainfall during the month and more than 18 inches for the period May 7–18. Plate 1 shows the pattern of rainfall across the area for only the period May 7–18. This map is based on U.S. Weather Bureau climatological data.

Smaller amounts of rain fell on May 3, 21–22, and 24–31 but had little effect on the floods.

FLOODS

ARKANSAS RIVER BASIN

POTEAU RIVER

The drainage basin of the Poteau River varies from rolling, hilly to rugged, mountainous terrain. Rainfall on the area averaged about 5 inches on May 13 and about 3.5 inches during May 7–12. The flood on the main stem of the Poteau River was moderately high. However, the floods on James Fork, a tributary to Poteau River, were outstanding. The peak discharge of 25,400 cfs from a drainage area of 43.9 square miles at the crest-stage gaging station James Fork near Midland was the maximum for the period 1963–68 and was about 1.9

times the discharge for the 50-year flood. The peak discharge of 30,000 cfs from a drainage area of 148 square miles at the gaging station James Fork near Hackett was more than double the previous maximum for the period 1958–68 and slightly exceeded the 50-year flood.

PETIT JEAN RIVER

The drainage basin of Petit Jean River varies from rolling pasture and cultivated land to wooded, rugged, mountainous terrain. Rainfall on the area ranged from 3.75 to 5.65 inches on May 13 and from 4.00 to 4.65 inches during May 7–12. The record maximum stage in the basin was exceeded only at the crest-stage gaging station Pack Saddle Creek tributary near Waldron, in operation since 1961. The peak discharge of 689 cfs from a drainage area of 0.93 square mile is about equal to the discharge of a 50-year flood based on the recurrence intervals of the peak discharges on nearby larger streams. Although four gages recorded very high stages, none of the other gages in the Petit Jean River basin recorded record-breaking stages and discharges. The peak discharge of 27,300 cfs at the gaging station near Booneville was among the highest. The peak stage was only 1.21 feet lower than the maximum for the period of record, 1938–68.

The gaging station Blue Mountain Reservoir near Waveland recorded a peak stage of 418.33 feet, which was 0.67 foot below the spillway crest, and was the second highest since storage began in 1947. The maximum contents of 250,530 acre-feet was 97 percent of the capacity at spillway-crest level. The computed peak inflow of 43,000 cfs to the reservoir on May 13 has a recurrence interval of 13 years. Since regulation by Blue Mountain Dam began in 1947, the peak discharge of 20,000 cfs at the gaging station Petit Jean River at Danville was the second highest.

The peak discharge of 630 cfs at the crest-stage gaging station Jake Creek near Chickalah was the second highest for the period 1961–68.

FOURCHE LA FAVE RIVER

Fourche La Fave River is in west-central Arkansas. The drainage basin, a long, narrow valley in a rugged mountainous area, received moderate rainfall which averaged 3.2 inches on May 13 and 4.0 inches during May 7–12. As a result of the moderate rainfall, the peak discharges generally were not outstanding. However, the gaging station Nimrod Lake near Nimrod recorded a peak stage of 370.15 feet, which was 2.85 feet below the spillway crest and was the second highest since storage began in 1942. The maximum contents of 286,300 acre-feet was 85 percent of the capacity at spillway-crest level.

BAYOU METO

The drainage basin of Bayou Meto in the upper reaches is rolling and hilly and in the lower reaches is flat cultivated land where floods can be disastrous. Rainfall during May 7–18 on the area averaged about 11.3 inches. Because of the flat slopes and the large overbank storage along Bayou Meto, the three periods of rainfall produced an accumulative effect on stream discharge, and only one peak discharge occurred along the lower reaches. The peak discharge of 4,700 cfs at the gaging station near Lonoke was the maximum for the period of record beginning in 1954 and was slightly greater than the 50-year flood.

The peak discharge of 1,020 cfs from a drainage area of 8.54 square miles at the crest-stage gaging station White Oak Branch near Lonoke was the second highest for the period 1961–68.

FOURCHE CREEK

The drainage basin of Fourche Creek is rough and hilly terrain in the upper reaches and is very flat to hilly terrain in the lower reaches. About 4.5 inches of rain fell on the area on May 13 and from 5.4 to 7.6 inches May 7–12. This heavy rainfall produced severe flooding along Fourche Creek, especially in the lower reaches. Indirect measurements of peak discharge were made at three miscellanous sites on tributaries to Fourche Creek in the western part of Little Rock.

The drainage area of 8.50 square miles upstream from the miscellaneous site Rock Creek at Shackleford Road in Little Rock is partly residential. The peak discharge was 3,450 cfs.

The drainage area of 4.71 square miles upstream from the miscellaneous site Grassy Flat Creek at Rodney Parham Road in Little Rock is about half residential. The peak discharge was 1,560 cfs.

The drainage area of 2.78 square miles upstream from the miscellaneous site Coleman Creek at 28th Street in Little Rock is a residential area. The peak discharge was 1,140 cfs.

RED RIVER BASIN

RED RIVER

The part of the Red River drainage basin in Arkansas along the main stem is flat, rolling terrain. Between 11 and 12 inches of rain fell on this area during May 7–18. Peak stages and discharges resulting from the storm were not outstanding at the two gaging stations on the main stem of the Red River. Storage in Lake Texoma, 241 miles upstream from the gaging station Red River at Index, has some effect on floodflow. Runoff from Little River, which normally discharges into Red River 2½ miles upstream from the gaging station

Red River at Fulton, was stored in Millwood Reservoir. Discharges from the reservoir during the storm period were: 18,600 cfs, May 16; 0 cfs, May 17–19; 3,760 cfs, May 20; and 12,100 cfs, May 21.

LITTLE RIVER

The part of the Little River drainage basin in Arkansas along the main stem varies from relatively flat terrain to rolling hills; however, the drainage basins of the larger tributaries to Little River, especially in the upper reaches, are very rugged and mountainous. Rolling Fork, Cossatot River, and Saline River are the principal tributaries to Little River in Arkansas. Rainfall on the area during May 7–12, which averaged about 5.9 inches, saturated the ground. Rainfall May 13, which averaged about 7 inches on the area, and as much as 9.2 to 10.1 inches in spots, produced the floods. Most notable of the floods was on Cossatot River near DeQueen. The peak stage of 22.60 feet was 1.90 feet higher than the previous maximum in 1961. The peak discharge of 122,000 cfs, which was about twice the previous maximum of 62,000 cfs, was 2.01 times the discharge for the 50-year flood. Peak discharges at the gaging stations on the three principal tributaries to Little River were greater than the discharge for the 50-year flood.

In the Little River basin the peak discharges on two of the smaller streams were outstanding. The peak discharge of 6,240 cfs from a drainage area of 6.43 square miles at the crest-stage gaging station Pepper Creek near DeQueen probably had a magnitude of at least the 50-year flood, based on the recurrence interval of floods on the larger streams in the area. Also, the scour along the channel and through the bridge indicates that the flood was a rare event. The peak discharge of 552 cfs from a drainage area of 0.64 square mile at the crest-stage gaging station Mill Slough tributary near Lockesburg was probably a rare event. Floods on the main stem of Little River were not outstanding as a result of the storm.

OUACHITA RIVER

The drainage basin of the Ouachita River from its source to Malvern is rugged and mountainous, and from Malvern to the Arkansas-Louisiana State line it is relatively flat, where the river spreads out during floods to a width of as much as 5 miles. Records of the U.S. Weather Bureau show that from 3.2 to 9.1 inches of rain fell on the area upstream from Blakely Mountain Dam on May 13 and from 3.6 to 5.2 inches, May 7–12. The gaging station Lake Ouachita near Hot Springs, which has a continuous record since 1952, recorded a peak stage of 588.63 feet, which was 4.62 feet higher than the previous maximum and 3.37 feet below the spillway crest. The maximum contents of 2,609,300 acre-feet was 94 percent of the capacity at spillway-

crest level. The computed maximum inflow to the lake was 136,000 cfs on May 13. Previously, the greatest flood since 1923 at the gaging station in operation from 1937 to 1950 near this location was 123,000 on March 30, 1945. The records, however, are not entirely comparable because the peak discharge recorded at the gaging station in 1945 represented the peak of a flood wave moving down a natural stream channel; whereas, the rate of peak inflow to the lake represents inflow to the lake throughout its length. Normally, the peak inflow to the lake would be greater than the natural peak streamflow.

The flow in the Ouachita River is controlled by three reservoirs: Lake Ouachita, formed by Blakely Mountain Dam; Lake Hamilton, formed by Carpenter Dam; and Lake Catherine, formed by Remmel Dam. Reduction in peak stages on the Ouachita River by storage in Lake Ouachita was estimated by the Corps of Engineers to have been 4.0–5.0 feet from Blakely Mountain Dam to Remmel Dam and 4.9 feet near Malvern.

The drainage area of 457 square miles between Blakely Mountain Dam and Ouachita River near Malvern is fan-shaped, rugged, hilly terrain. Rainfall on the area ranged from 6.1 to 9.1 inches on May 13 and from 4.6 to 5.6 inches May 7–12. The gaging station Ouachita River near Malvern recorded a peak stage of 26.02 feet, the maximum stage since regulation by Lake Ouachita began in 1952. The peak discharge of 110,000 cfs from the 457 square miles of drainage area below Blakely Mountain Dam was 1.51 times the discharge for the 50-year flood. Runoff above Blakely Mountain Dam was stored in Lake Ouachita. The only discharge from the lake on May 14 was leakage through the gates of about 20 cfs. Releases from the lake during the month are shown in the table of daily discharges for the station Ouachita River at Blakely Mountain Dam near Hot Springs. The maximum daily mean discharge released during the period May 7–14 was 3,030 cfs on May 12.

Temporary storage in DeGray Reservoir, formed by DeGray Dam on Caddo River, had some controlling effect on flow in the Ouachita River. Reduction in peak stage of 2.9 feet on the Ouachita River at Arkadelphia by storage in the reservoirs mentioned previously was estimated by the Corps of Engineers.

The gaging station Ouachita River at Arkadelphia recorded a peak stage of 30.08 feet, which was only 0.22 foot lower than the maximum for the period since 1929. The peak discharge of 162,000 cfs was 95 percent of the previous maximum.

Storage in Lake Greeson, formed by Narrows Dam on Little Missouri River, had some controlling effect on flow in the Ouachita River. Reduction in peak stage on the Ouachita River by storage in reservoirs on the Ouachita River and tributaries was estimated by

the Corps of Engineers to have been 1.9 feet at Camden, 1.0 foot at Lock and Dam 8, and none at Lock and Dam 6.

The gaging station Ouachita River at Camden recorded a peak stage of 43.08 feet, which was only 1.74 feet lower than the maximum for the period 1886–1968. The discharge of 183,000 cfs was 75 percent of the previous maximum. Figure 2 is a view of U.S. Highway 79 across Ouachita River east of Camden.

FIGURE 2.—U.S. Highway 79 across Ouachita River east of Camden. Photograph by U.S. Army Corps of Engineers.

CADDO RIVER

The Caddo River drainage basin is rugged and mountainous and was in the area of the heaviest rainfall. Records of the U.S. Weather Bureau show that from 7 to 10 inches of rain fell on the area on May 13 and from 5 to 6 inches fell during May 7–12. As a result of this heavy rainfall, record-breaking floods were produced on the Caddo River. The recorded peak stage of 31.40 feet at the gaging station at Glenwood was 4.40 feet higher than the previous maximum for the period of record beginning in 1939. The peak discharge of 88,000 cfs was 35 percent greater than the previous maximum in 1945.

The recorded peak stage of 35.64 feet at the gaging station near Alpine was 5.48 feet higher than the previous maximum for the period

1938–68. The peak discharge of 85,000 cfs was 32 percent greater than the previous maximum in 1961.

The computed maximum inflow to DeGray Reservoir of 120,000 cfs has a ratio of 1.7 times the discharge for the 50-year flood. Storage in DeGray Reservoir near Arkadelphia reduced the maximum discharge in Caddo River from 120,000 cfs to 42,000 cfs, which was flow through the uncontrolled diversion tunnel.

The peak discharge of 2,540 cfs from a drainage area of 2.34 square miles at the crest-stage gaging station Little Sugarloaf Creek near Bonnerdale is the maximum for the period 1962–68. Based on the recurrence interval of the peak discharges on the larger streams in the area, the Bonnerdale peak discharge probably has a magnitude greater than the 50-year flood.

LITTLE MISSOURI RIVER

The drainage basin of Little Missouri River in the upper reaches is rugged and mountainous and in the lower reaches is relatively flat and rolling hills. Rainfall May 7–12 on the area, ranging from 3.4 to 7.9 inches, saturated the ground but produced only moderate flooding on most streams. Rainfall of as much as 8.0 to 10.0 inches fell on the area May 13. The combination of these two events produced the peak stages and discharges on streams in this area.

Most notable of these floods was at the gaging station Lake Greeson near Murfreesboro, which has a continuous record since 1949. The recorded peak reservoir stage of 564.60 feet, May 18–19, was 6.76 feet higher than the previous maximum stage and 1.60 feet above the spillway crest. Figure 3 is a view of Narrows Dam and Lake Greeson showing water flowing over the spillway for the first time. The maximum contents of 423,800 acre-feet was 18 percent greater than the previous maximum. The computed maximum inflow to the reservoir on May 13 was 97,000 cfs, which has a recurrence interval 2.05 times the discharge for the 50-year flood.

Reduction in peak stages on Little Missouri River by storage in Lake Greeson was estimated by the Corps of Engineers to have been 4.9 feet upstream from Ozan Creek and 1.3 feet downstream from Ozan Creek.

At a nearby crest-stage station, Prairie Creek tributary near Kirby, a peak discharge of 306 cfs from a drainage area of .16 square mile was the maximum for the period 1963–68. The discharge probably had a magnitude of at least the discharge for the 50-year flood. The unit discharge of 1,910 cfs per square mile was the maximum unit runoff in the report area.

The peak stage and discharge on Little Missouri River at the gaging station near Delight was the result of the heavy rainfall May 9–10

FIGURE 3.—Narrows Dam and Lake Greeson on Little Missouri River near Murfreesboro. Photograph by U.S. Army Corps of Engineers.

on the drainage basin of Ozan Creek, which discharges into Little Missouri River 7.9 miles upstream from the Delight station, and the heavy rainfall May 7–10 on the rest of the Little Missouri River drainage basin below Narrows Dam. The peak discharge of 45,000 cfs from the 476-square-mile drainage area below Narrows Dam has a recurrence interval of 32 years. Runoff above Narrows Dam was stored in Lake Greeson. Discharges from the lake during the storm period were: 10 cfs, May 7; 1,120 cfs, May 8; 1,740 cfs, May 9; 1,370 cfs, May 10; and 962 cfs, May 11.

SALINE RIVER

The drainage basin of Saline River above the gaging station at Benton is a hilly, mostly wooded, fan-shaped valley. Rainfall May 7–12 on the area, ranging from 5.08 to 5.90 inches, saturated the ground and caused moderate flooding. Rainfall May 13 on the area, ranging from 4.8 to 6.85 inches, produced a peak stage of 26.50 feet, which is the maximum for the period 1938–68 and was 4.00 feet lower than the maximum for the period beginning in 1927.

The drainage basin below the gaging station at Benton is relatively

flat terrain. Because of the flat slopes and the large overbank storage, the rainfall produced an accumulative effect on streamflow, resulting in the highest peak stage and the second highest peak discharge at the gaging station near Sheridan for the period 1938–68.

Partly because of the flat slopes and the large overbank storage, and partly because the larger amounts of rain fell on the upper reaches during May 7–14 and on the lower reaches during May 16–17, the three periods of rainfall blended to produce the maximum peak stage and discharge at the gaging station near Rye. The peak stage was 31.40 feet, which is 0.90 foot higher than the previous maximum for the period beginning in 1927.

In contrast with the record high stages and discharges on the main stem of Saline River, the peaks on the tributaries downstream from Benton were generally not outstanding. However, the peak discharge of 159 cfs from a drainage area of 0.27 square mile at the crest-stage gaging station Saline River tributary near Rison was the maximum for the period 1964–68 and was probably a rare event.

BAYOU BARTHOLOMEW

Bayou Bartholomew, which has broad and flat flood plains, is a slow-flowing, meandering stream in southeast Arkansas. Records of the U.S. Weather Bureau show that from 5.11 to 10.77 inches of rain fell on the drainage basin during May 1968. As a result of the relatively small amount of rainfall on the area, the floods were not outstanding. Because the stream is slow flowing, the rainfall of all three storms blended to produce the peak stages and discharges at the three gaging stations on the main stem. The gaging station Bayou Bartholomew at Wilmot did not crest until June 4; however, the crest was only 0.26 foot higher than the maximum stage recorded on May 31.

On the small tributaries to Bayou Bartholomew, the floods varied from outstanding to moderate. Of the small-area crest-stage gaging stations in the basin, only Nevins Creek tributary near Pine Bluff recorded a new maximum for the relatively short period of record, 1961–68. The peak discharge at the station was 231 cfs from a drainage area of 0.79 square mile. Considering the flat topography of the basin, the peak discharge probably was a rare event.

FLOOD DAMAGE

Floods of May 1968 caused extensive damage to industrial, residential, and agricultural areas. Surveys of flood damage were made by the Corps of Engineers, Farmers Home Administration, Agricultural Stabilization and Conservation Service, and other Federal, State,

county, and private organizations. Based on surveys made by the Corps of Engineers, total damage in the report area amounted to $18.3 million.

In the Arkansas River basin the most extensive flood damage was along Bayou Meto. This stream, with broad and flat flood plains, flows through a very productive agricultural area. Planted crops were washed away, silted over, or were under water too long to recover. Planting and replanting of crops were delayed. As a result of flooding, roads were closed and bridges were washed out. Damage was more extensive to county roads than to State highways.

Flood damage was much less on Fourche Creek than on Bayou Meto. In the Fourche Creek area highways were closed, and industrial and residential areas were inundated. Figure 4 is a view of a flooded residential area in the eastern part of Little Rock. Figure 5 is a view looking south from Little Rock at Arch Street Pike and Interstate Highway 30.

The only estimate available of flood damage on Poteau River, James Fork, Petit Jean River above Blue Mountain Reservoir, and Fourche La Fave River above Nimrod Lake was $8,300 to secondary roads reported by the Arkansas State Highway Department.

FIGURE 4.—Fourche Creek in the east part of Little Rock. Photograph by Larry Obsitnik, Arkansas Gazette

FIGURE 5.—Fourche Creek, Arch Street Pike, and Interstate Highway 30 south of Little Rock. Photograph by Larry Obsitnik, Arkansas Gazettte.

In the Little River basin in Arkansas, the most extensive flood damage was on the tributaries to Little River. No flood damages were reported on Red River. Figure 6 is a view of a damaged bridge on U.S. Highway 70 across Saline River near Dierks.

The Agricultural Stabilization and Conservation Service estimated the flood damage to 1,504 acres of eroded or silted-over pastures and grassland in the Little River basin in Arkansas amounted to $27,257. In the same general area, the Farmers Home Administration reported 600 head of cattle lost or drowned; 150 miles of fence damaged or destroyed; productive farmland, pastures, and grassland eroded or silted over; planting and replanting of crops delayed; and farm machinery and equipment silted with sand and mud.

In the Ouachita River basin, flood damage was extensive in residential, industrial, and agricultural areas. Figures 7–9 are views of

FIGURE 6.—Damaged bridge on U.S. Highway 70 across Saline River near Dierks. Photograph by Arkansas State Highway Department.

FIGURE 7.—Ouachita River in north part of Arkadelphia. Photograph by U.S. Army Corps of Engineers.

FIGURE 8.—Ouachita River at Arkadelphia. Photograph by Larry Obsitnik, Arkansas Gazette.

FIGURE 9.—Ouachita River east of Arkadelphia. Photograph by Larry Obsitnik, Arkansas Gazette.

FIGURE 10.—Saline River south of Benton. Photograph by Larry Obsitnik, Arkansas Gazette.

Ouachita River flooding in the vicinity of Arkadelphia. In the Ouachita River basin, the Farmers Home Administration reported 800 head of cattle lost or drowned; productive farmland, pastures, and grassland eroded or silted over; farm machinery and equipment silted with sand and mud; and planting and replanting of crops delayed.

Figure 10 is a view of a pecan orchard on Saline River south of Benton.

Several State highways and county roads were closed because of floodwaters. Roads and bridges were washed out. Figure 11 is a view of a washed-out bridge on Arkansas State Highway 346 across Caddo River near Alpine.

Damage figures by the Corps of Engineers, listed in table 1, were used in this report because their estimates include the entire report area, by river basins. Damage figures given by other agencies in this report were probably included in the Corps of Engineers estimates, except for the $8,300 damage to secondary roads in the Arkansas River basin which was reported by the Arkansas State Highway Department.

Estimates by the Corps of Engineers of flood damage prevented by the reservoirs in the Ouachita River basin, flood prevention works, and levees along the Ouachita River amounted to $6,296,000.

FIGURE 11.—Damaged bridge on Arkansas State Highway 346 across Caddo River near Alpine. Photograph by Arkansas State Highway Department.

TABLE 1.—*Estimated flood damage in report area*

[Furnished by the Corps of Engineers]

River basin	Flood damage in dollars
Arkansas River basin:	
Petit Jean River	124,000
Fourche La Fave River	104,000
Fourche Creek	850,000
Bayou Meto	4,733,000
Total	5,811,000
Red River basin:	
Rolling Fork	310,000
Cossatot River	430,000
Saline River	280,000
Little River	10,000
Ouachita River and tributaries	11,430,000
Total	12,460,000
Grand total	18,271,000

MAGNITUDE AND FREQUENCY OF FLOODS

The Geological Survey expresses the frequency of a flood in terms of its recurrence interval, which is defined as the average intervals in which a flood of a given magnitude will be equaled or exceeded as an annual maximum discharge. The probability of the occurrence

of a given flood is the reciprocal of its recurrence interval. For example, a flood with a recurrence interval of 10 years has a 10-percent chance of being equaled or exceeded in any one year, and a flood with a recurrence interval of 50 years has a 2-percent chance of being equaled or exceeded in any one year. Recurrence intervals, however, are average figures and are based on historical data. Because of the erratic nature of flood events, a flood with a recurrence interval of 50 years may not occur in a 50-year period, or may occur several times in 50 years.

Flood-frequency relations for streams in Arkansas have been defined by Patterson (1964). The State was divided into hydrologic areas and flood-frequency regions on the basis of floodflow characteristics of the streams in the various areas and regions. Plate 1 shows the locations of the hydrologic areas and flood-frequency regions for the part of the State in the report area.

The relationship of annual peak discharge to drainage area for each combination of hydrologic area and flood-frequency region for selected recurrence intervals is shown in figures 12–15. The range in drainage areas shown in these figures represents the range of base

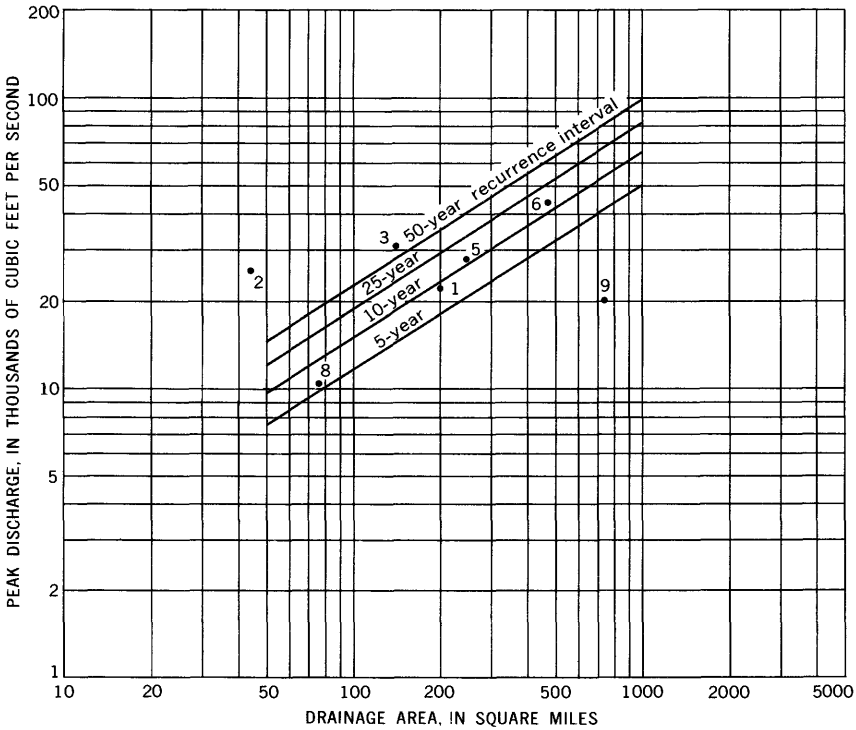

FIGURE 12.—Relation of peak discharge to drainage area in flood region B, hydrologic area 2. Number corresponds to reference number in table 6 and site location shown on plate 1.

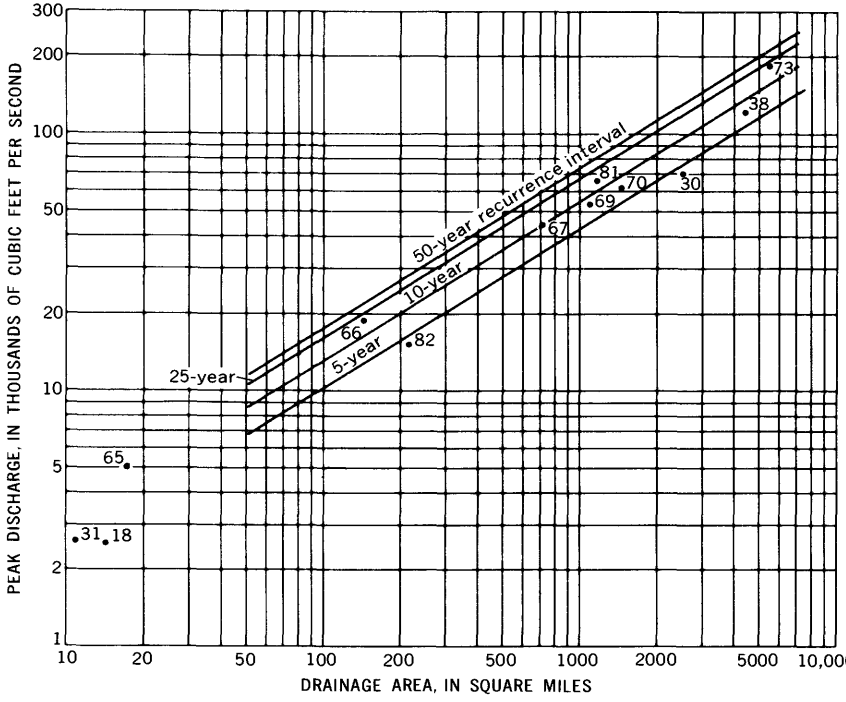

FIGURE 13.—Relation of peak discharge to drainage area in flood region D, hydrologic area 2. Number corresponds to reference number in table 6 and site location shown on plate 1.

data used in defining the curves. Flood-frequency relations computed by extrapolation are subject to error.

To illustrate the relative frequency of the peak discharges for the floods of May 1968, the peak discharges for areas greater than 10 square miles have been plotted against their respective drainage areas on the appropriate figures 12–15. For example, figure 12 shows that the peak discharge of 30,000 cfs from a drainage area of 148 square miles on James Fork near Hackett will occur on the average of once in slightly more than 50 years, whereas a peak discharge of 10,300 cfs from a drainage area of 74 square miles on Dutch Creek at Waltreak will occur on the average of once in 5 years.

Frequency relations are not defined for small drainage areas, but the peak discharges on some of the small drainage areas probably exceeded the discharge for the 50-year flood.

RAINFALL AND RUNOFF

The amount and rate of runoff from a particular basin is influenced by many complex factors; the amount and intensity of rainfall, the

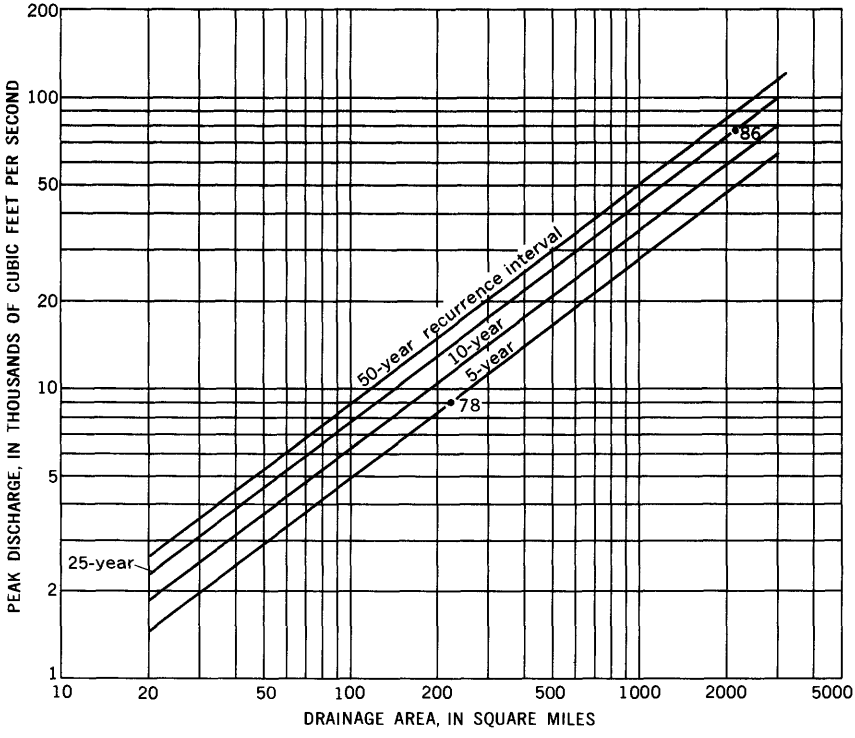

FIGURE 14.—Relation of peak discharge to drainage area in flood region D, hydrologic area 7. Number corresponds to reference number in table 6 and site location shown on plate 1.

topography, the size and shape of the drainage basin, the geology, and the antecedent soil moisture, to name a few. To show the relation of rainfall to runoff across the storm area, five gaging stations that have drainage areas ranging from 0.79 to 2,062 square miles were selected. The topography of these drainage areas varies from steep and rugged mountainous areas to relatively flat areas. The average annual rainfall on the report area ranges from about 42 inches just south of the Arkansas River in the northwest corner of the storm area to about 56 inches in the west-central part.

Runoff, in inches, was computed for May 1968 from records of daily discharge at each of the five stream-gaging stations. These values were accumulated for the month, as were the rainfall values for the same period. The period of runoff for a particular storm was determined from a hydrograph of accumulated rainfall and accumulated runoff.

Hydrographs of accumulated rainfall and accumulated runoff for each of the five areas are shown in figures 16–20. Table 2 gives the

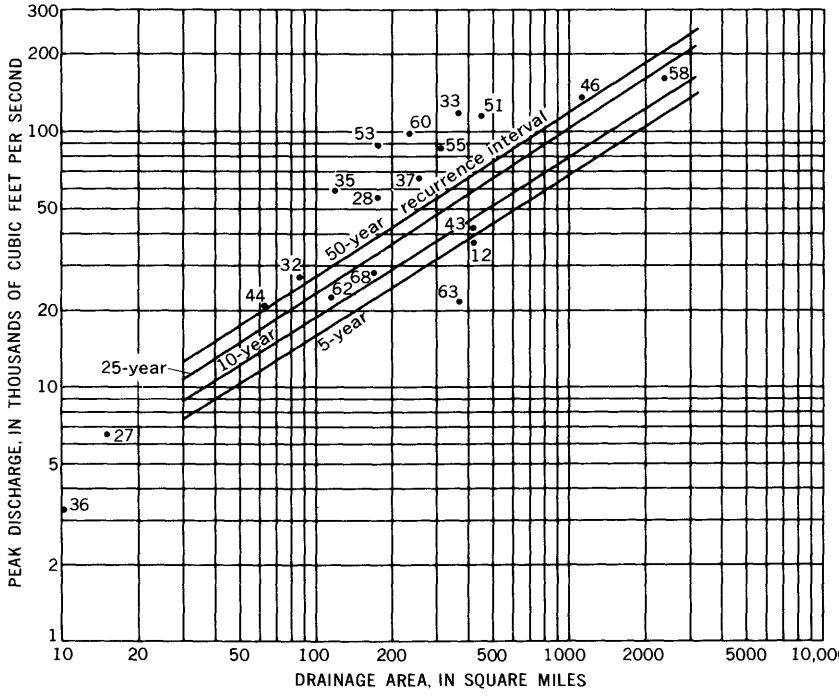

FIGURE 15.—Relation of peak discharge to drainage area in flood region D, hydrologic area 9. Number corresponds to reference number in table 6 and site location shown on plate 1.

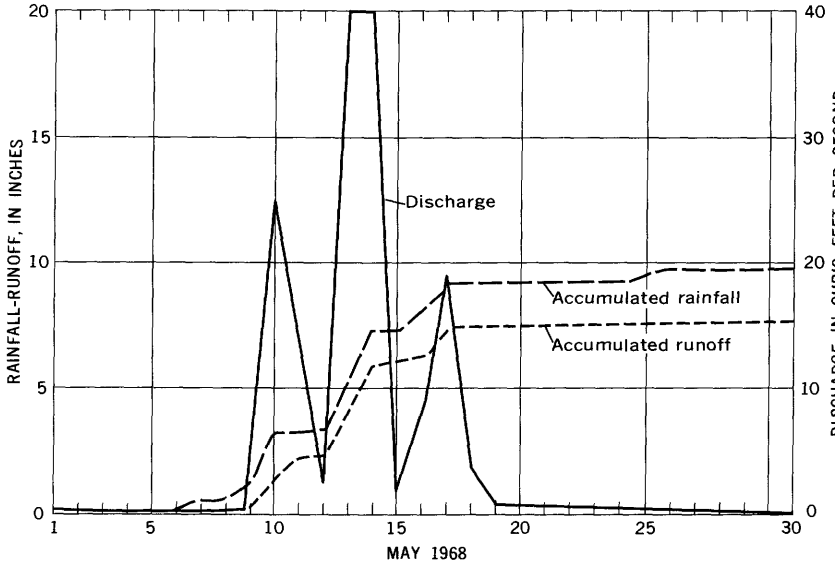

FIGURE 16.—Rainfall-runoff hydrograph for Nevins Creek tributary near Pine Bluff.

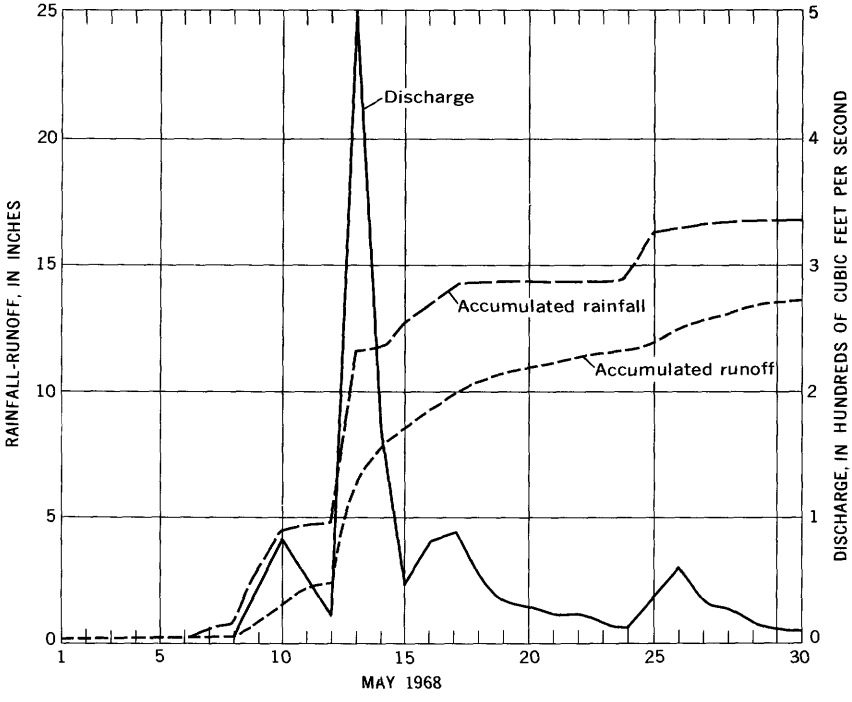

FIGURE 17.—Rainfall-runoff hydrograph for Glazypeau Creek at Mountain Valley.

total rainfall and the total runoff and the dates of each of the storm periods during May 1968. Flooding began shortly after the rain began and continued for periods of from 2 to 5 days after the rain ceased. The length of the period varied with the nature of the storm and the topography and size of the drainage area.

Total rainfall for May 1968 in the selected areas ranged from 9.77 to 20.1 inches. Rainfall values were determined for Cossatot River, Glazypeau Creek, and Nevins Creek tributary basins from records obtained at one recording rain gage in each area. The gage on Nevins Creek tributary basin failed to operate properly May 17–31, and the total rainfall of 9.77 inches for the month was determined by adjusting the May 1–17 rainfall of 9.13 inches on the basis of records at a nearby recording gage and the discharge at the gaging station.

In the Saline River drainage basin above the gaging station Saline River at Benton, the average rainfall was determined by averaging the rainfall at four rain gages, one of which was a recording rain gage. Above the gaging station Saline River near Rye, the average rainfall was determined by averaging the rainfall at seven rain gages, two of which were recording rain gages. The amounts of rainfall and

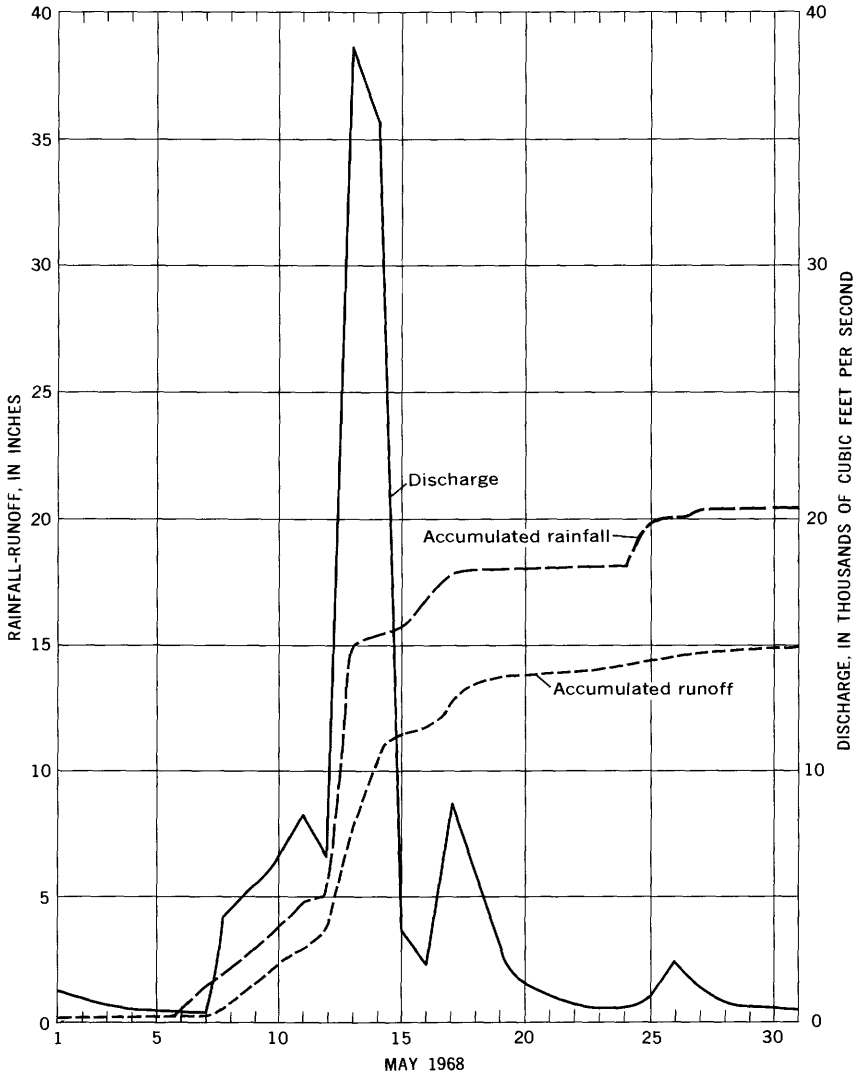

FIGURE 18.—Rainfall-runoff hydrograph for Cossatot River near DeQueen.

runoff for each storm period and the totals for the month are listed in table 2.

The gaging station Nevins Creek tributary near Pine Bluff is a crest-stage station equipped with dual-digital recorders to collect rainfall and stage simultaneously. The drainage area of 0.79 square mile is fairly flat, rolling wooded terrain. The soil is sandy and gravelly and pervious, and generally the stream flows only during storm periods; however, because the soil was saturated prior to the storm, the stream

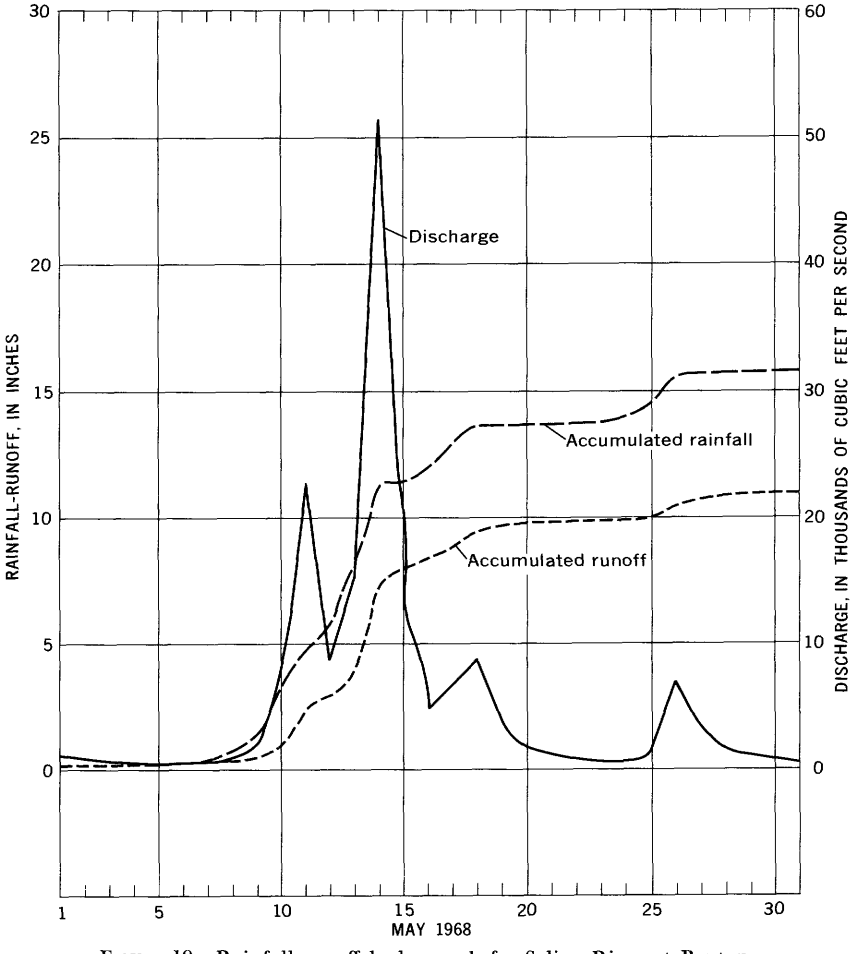

FIGURE 19.—Rainfall-runoff hydrograph for Saline River at Benton.

flowed the entire month. The average annual precipitation throughout the drainage area is about 50 inches. For May 1968, total rainfall was 9.77 inches and total runoff was 7.66 inches (table 2). Figure 16 is a hydrograph showing rainfall and runoff at this station.

The gaging station Glazypeau Creek at Mountain Valley is a crest-stage station equipped with dual-digital recorders to collect rainfall and stage simultaneously. The drainage area of 4.3 square miles is a rugged, hilly valley of sandy, rocky, and clay soil. The stream is spring fed and flows continuously. The average annual precipitation on the drainage area is 54 inches. The total rainfall recorded at this station was 16.64 inches, and the total runoff was 13.46 inches (table 2). Figure 17 is a hydrograph showing rainfall and runoff at this station.

The drainage area above the gaging station Cossatot River near

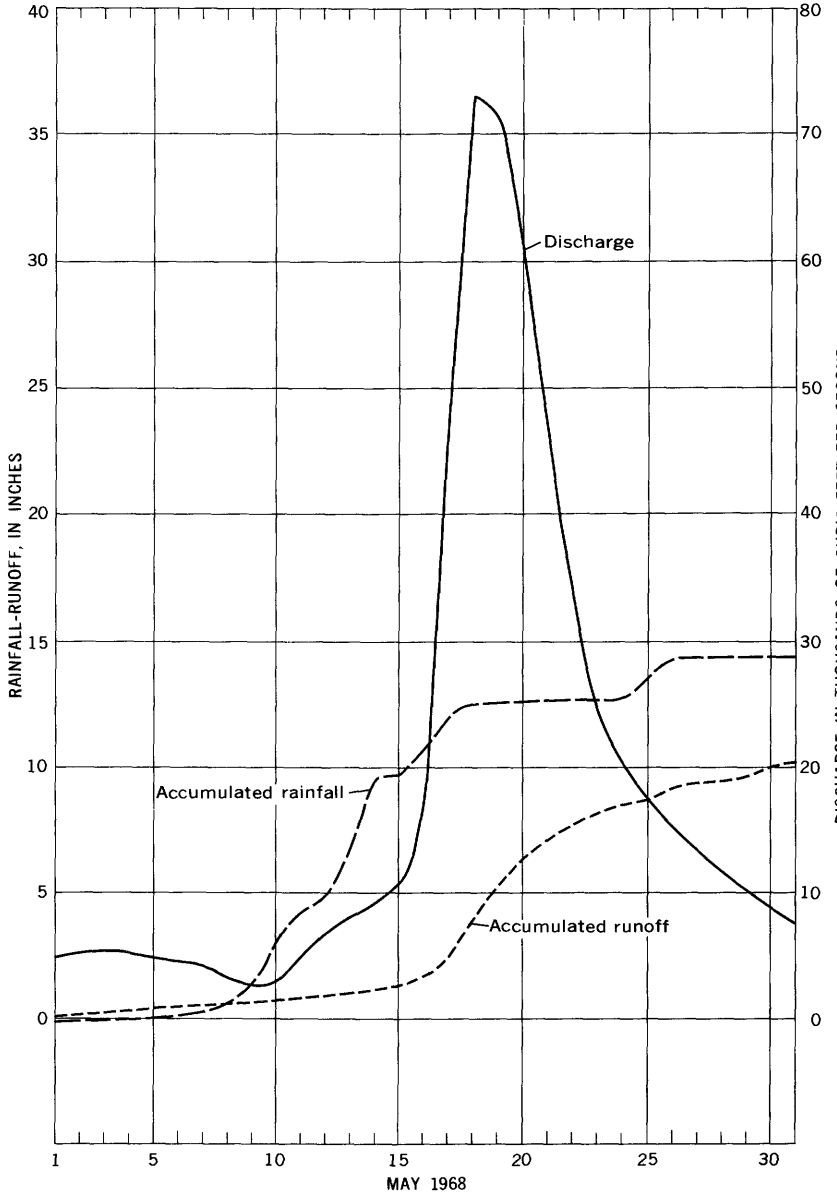

FIGURE 20.—Rainfall-runoff hydrograph for Saline River near Rye.

DeQueen is 361 square miles and is wooded, rugged, and mountainous. The stream is perennial from near its source to its mouth. The av-

TABLE 2.—*Rainfall and runoff, in inches, for selected river basins in Arkansas, May 1968*

Period	Rainfall	Runoff
Nevins Creek tributary near Pine Bluff (Drainage area, 0.79 square mile)		
May 7–11	2.71	1.93
May 12–14	3.96	3.76
May 15–17	1.70	1.28
Total for month	9.77	7.66
Glazypeau Creek at Mountain Valley (Drainage area, 4.3 square miles)		
May 8–11	4.13	1.70
May 12–13	6.83	4.20
May 14–17	.85	1.93
Total for month	16.64	13.46
Cossatot River near DeQueen (Drainage area, 361 square miles)		
May 6–11	4.7	2.55
May 12–14	10.1	7.57
May 15–18	2.4	1.74
Total for month	20.1	14.84
Saline River at Benton (Drainage area, 569 square miles)		
May 7–11	4.56	2.06
May 12–14	5.86	4.25
May 15–18	2.38	1.35
Total for month	15.85	10.89
Saline River near Rye (Drainage area, 2,062 square miles)		
May 1–31	14.39	—
Total for month	14.39	10.15

erage annual precipitation on the drainage area is 50–56 inches. The only rain gage in the area is a recording rain gage at Gillham Dam, which is near the center of the drainage basin. The total rainfall recorded at this station was 20.1 inches and the total runoff was 14.84 inches (table 2). Gillham Dam was under construction, inoperative, and had no effect on streamflow. Figure 18 is a hydrograph showing rainfall and runoff at this station.

The drainage basin of Saline River, tributary to Ouachita River, is a fan-shaped hilly valley in its upper reaches where the runoff is fast, and is a flat to rolling valley in its lower reaches where runoff is slow.

The drainage area above the gaging station Saline River at Benton is 569 square miles and has an average annual precipitation of 50–54 inches. Four rain gages are evenly distributed in the drainage area;

this is equivalent to one gage for each 142 square miles. Totals of rainfall measured at the four rain gages in the area were 15.25, 15.5, 16.29, and 16.35 inches and averaged 15.85 inches. Total runoff, which was computed from daily discharges, was 10.89 inches (table 2). Floodflow was insignificantly affected by storage in Lake Winona (drainage area, 44 sq mi) during the storm period. Water flowed over the spillway for the entire month, except May 5–9 when about 1.6 inches of rainfall was reported. Figure 19 is a hydrograph showing rainfall and runoff at this station.

The drainage area above the gaging station Saline River near Rye is 2,062 square miles and has an average annual precipitation of 48–54 inches. At this station the stream is perennial. Seven rain gages are evenly distributed in the drainage area. This is equivalent to one rain gage for each 295 square miles. Totals of rainfall measured at the seven rain gages in the area were 11.50, 12.53, 13.63, 15.25, 15.5, 16.29, and 16.35 inches, and averaged 14.44 inches. Total runoff, which was computed from daily discharges, was 10.15 inches (table 2). Figure 20 is a hydrograph showing rainfall and runoff at this station.

FLOOD-CREST STAGES

Information of flood crests, such as elevation, date, and place of determination, in Red River basin is given for the Ouachita River in table 3; the Saline River, tributary to Ouachita River, in table 4; and Bayou Bartholomew in table 5.

TABLE 3.—*Flood-crest elevations on Ouachita River, floods of May 1968*
[Most of data furnished by the U.S. Army Corps of Engineers and Arkansas Power and Light Company]

Place of determination	Day of month	Miles above mouth	Elevation (feet)
Near Mount Ida	14	553.4	683.5
Lake Ouachita	19	487.0	588.6
Lake Hamilton	13	467.9	402.1
Lake Catherine	13	455.9	311.3
Near Malvern	14	450.1	254.1
At Arkadelphia	14	420.6	190.4
At Camden	17	354.1	114.8
Near Calion	—	307.0	97.0
At Lock and Dam 8	21	297.9	95.9
At Moro Bay	—	286.2	90.0
Near Crossett	—	252.1	83.0
At Lock and Dam 6	31	239.4	82.4
Near Arkansas-Louisiana State line	30	238.5	82.4

The record of flood stages is a useful guide in the location of buildings, roads, and other structures along these streams. Flood records

TABLE 4.—*Flood-crest elevations on Saline River, floods of May 1968*
[Most of data furnished by the U.S. Army Corps of Engineers]

Place of determination	Day of month	Miles above mouth	Elevation (feet)
At Benton	14	198.1	287.4
At U.S. Highway 270 near Prattsville	—	167.3	218.2
Near Sheridan	16	131.4	174.2
Near Fordyce	—	99.2	151.3
Near Rye	18	71.0	126.4
Near Warren	—	58.0	115.3
Near Fountain Hill	—	33.5	99.2

TABLE 5.—*Flood-crest elevations on Bayou Bartholomew, floods of May 1968*
[Most of data furnished by the U.S. Army Corps of Engineers]

Place of determination	Day of month	Miles above mouth	Elevation (feet)
At U.S. Highway 79 near Pine Bluff	May 18	356.1	215.8
At 31st Street in Pine Bluff	18	354.6	209.0
At State Highway 15 near Pine Bluff	18	352.6	199.9
On county road, 4 miles southeast of Pine Bluff	18	345.6	197.8
Near Star City	20	285.7	176.2
Near McGehee	26	200.5	141.7
At Wilmot	June 4	107.3	98.7
At Arkansas-Louisiana State line	—	102.2	84.9
Near Jones, La	June 5	101.7	83.7

are also useful as basic data on time and travel of flood crests and channel storage. The profiles are based on gaging-station data for convenient comparison with other floods. Profiles of flood-crest elevations in the Red River basin along the Ouachita River, Saline River, and Bayou Bartholomew are shown in figures 21, 22, and 23.

MEASUREMENT OF FLOOD DISCHARGE

The method generally used by the Geological Survey to determine discharge at a gaging station is to develop a stage-discharge relation from current-meter measurements made at intervals throughout the range in stage experienced. Short extensions of the rating curves are generally based on logarithmic plotting, area-velocity studies, slope-conveyance studies, or by use of other hydrologic principles. The record of stage is generally obtained from a water-stage recorder installation that provides a continuous graphic or punch-tape record.

It was impossible to obtain current-meter measurements at or near the time of peak discharge at many of the gaging stations. On the smaller streams the duration of the flood peaks was too short to permit measurement.

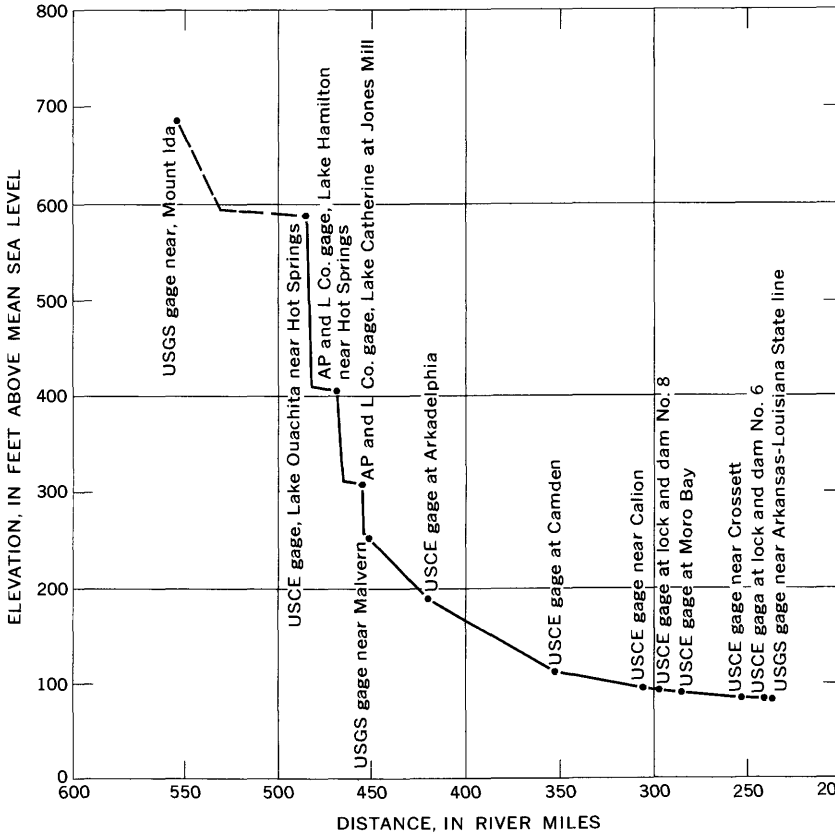

FIGURE 21.—Profile of May 1968 flood-crest elevations on Ouachita River.

For many gaging stations at which no high-water current-meter measurements were made, the peak discharge was obtained by slope-area, contracted-opening, flow-through-culvert measurements, or other types of indirect discharge measurements. These indirect measurements are based on field surveys of high-water profiles, channel geometry, and hydraulic-structure geometry, and are computed in accordance with established hydraulic principles. They are indirect only in the sense that the data are collected subsequent to the passage of the peak discharge.

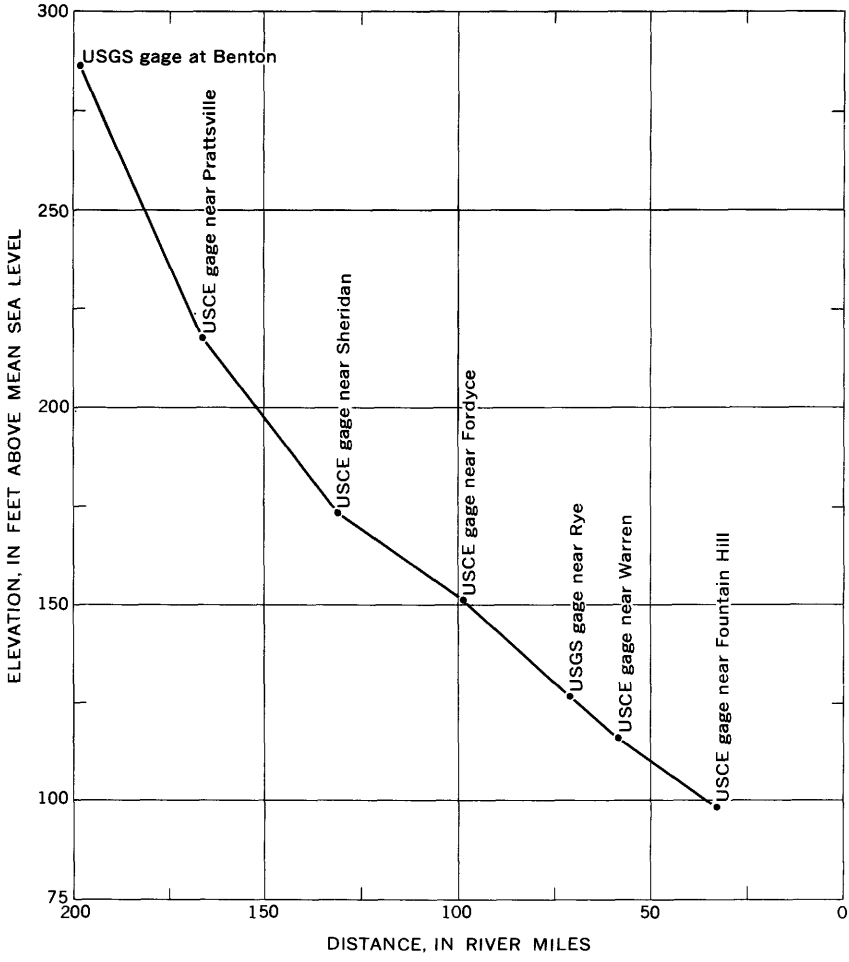

FIGURE 22.—Profile of May 1968 flood-crest elevations on Saline River.

SUMMARY OF PEAK STAGES AND DISCHARGES

Maximum stage and discharge information collected at 95 sites in the report area is summarized in table 6. The data were collected at gaging stations, crest-stage gages, reservoirs, and miscellaneous sites. The sites are listed in the downstream order currently (1970) used by the U.S. Geological Survey. A brief explanation of the data included in table 6 is given below:

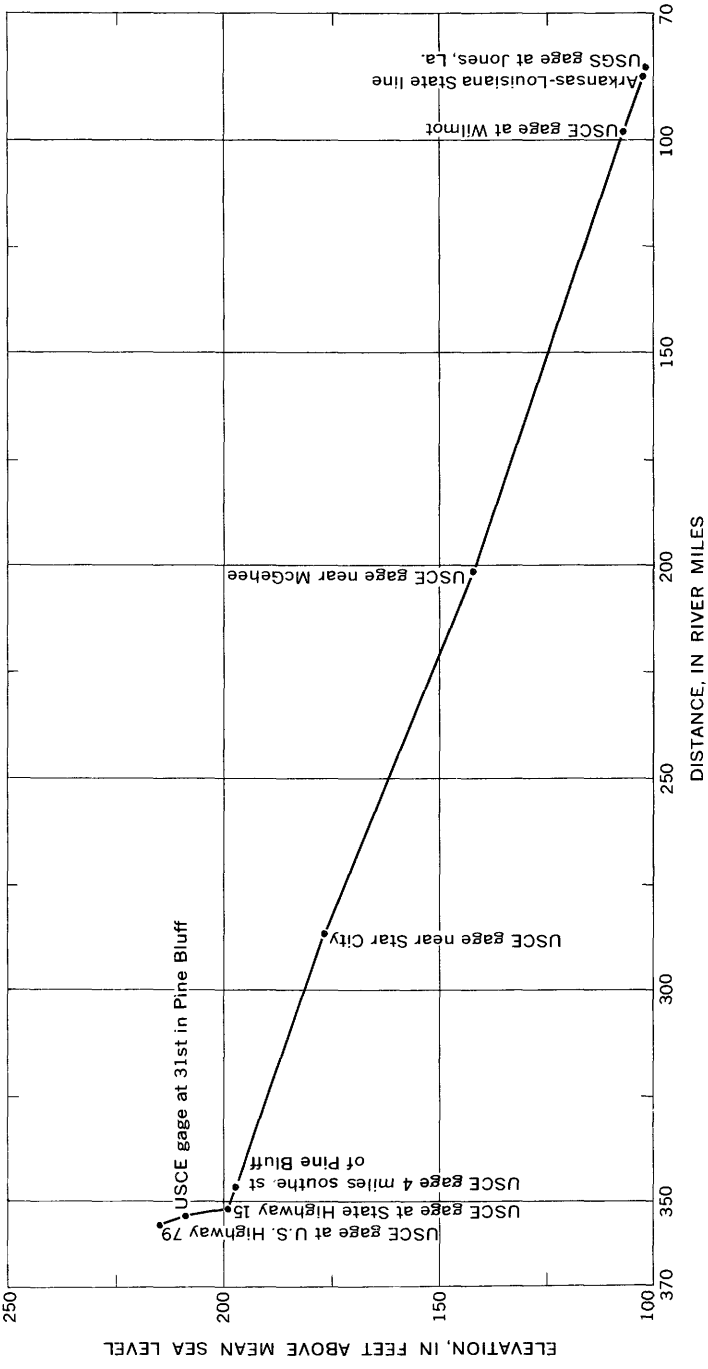

FIGURE 23.—Profile of May 1968 of flood-crest elevations on Bayou Bartholomew.

Reference number.—A sequential number assigned to each of the 95 sites for which data are included in this report, beginning with number 1 as the most upstream site. These numbers are used to identify the sites on plate 1 and in the discharge tables shown in the following section.

Permanent station number.—The number used in the Geological Survey Water-Supply Papers of the surface-water supply of the United States and in the annual reports of the surface-water records of Arkansas. Lack of data in the column indicates a Corps of Engineers station or a miscellaneous site for which a permanent number has not been assigned. The number for each station includes the part (geographical division of principal river basins) number. All stations in this report are in Part 7.

Stream and place of determination.—The permanent name adopted for the site to which the listed data apply.

Drainage area.—The drainage area of a stream at a specified location is the area measured in a horizontal plane which is enclosed by a drainage divide.

Maximum previously known.—At most sites for which flood data are listed, records have been collected prior to 1968. The peak stage and discharge listed is the maximum known during the indicated period and does not imply that records are available for each year during this period.

Maximum during May 1968.—The maximum experienced during the flood period.

Recurrence interval.—The average interval of time in which the peak discharge of May 1968 can be expected to be equaled or exceeded once. Where the recurrence interval is greater than 50 years, the ratio of the peak discharge to the discharge of the 50-year flood is shown.

STATION DESCRIPTIONS AND DISCHARGE TABLES

Detailed information on stage and discharge during the floods of May 1968 is presented in this section. Much of the information is in addition to that published in the annual surface-water reports. In general, the information given for each gaging station consists of a description of the station, a table of daily mean discharges, and a table of stages and discharges at indicated time. The tables also give the monthly mean discharge, in cubic feet per second; the volume of runoff, in acre-feet; and at selected stations where the flow is not regulated, runoff, in inches. For stations at reservoirs, the tables give elevation or gage height, in feet, and contents, in acre-feet, at indicated time each day. For the miscellaneous sites and crest-stage stations, only the station description is presented, because only the maxi-

TABLE 6.—*Summary of flood stages and discharges*

Reference No.	Permanent station No.	Stream and place of determination	Drainage area (sq mi)	Maximum previously known: Period of record	Year	Gage height (ft)	Discharge (cfs)	Maximum May 1968: Day	Gage height (ft)	Cubic feet per second	Recurrence interval (yr)
		Arkansas River basin									
1	7–2470	Poteau River at Cauthron	200	1935–68	1935	27.4	(1)	....	.....	.....	.....
				1939–68	1960	23.76	32,200	14	21.75	22,000	8
2	2493	James Fork near Midland	43.9	1963–68	1964	8.17	5,800	14	13.49	25,400	[2]1.88
3	2494	James Fork near Hackett	148	1958–68	1961	21.84	13,600	14	23.00	30,000	[2]1.10
4	2582	Pack Saddle Creek tributary near Waldron	.93	1961–68	1968	6.05	267	13	[3]9.42	689	(1)
5	2585	Petit Jean River near Booneville	247	1938–68	1939	23.42	43,200	14	22.21	27,300	11
6	2590	Blue Mountain Reservoir near Waveland	488	1947–68	1957	[4]422.54	[5]298,560	18	[4]418.33	[5]250,530	.....
								13	.....	[6]43,000	.....
7	2595	Petit Jean River near Waveland	517	1939–68	1939	29.95	62,600	14	26.67	7,660	.....
8	2600	Dutch Creek at Waltreak	74	1927–68	1927	19.5	14,600	14	17.58	10,300	6
9	2605	Petit Jean River at Danville	741	1916–68	1939	31.82	70,800	14	25.18	20,000	.....
10	2606.3	Jake Creek near Chickalah	1.6	1961–68	1968	8.16	675	13	8.01	630	(1)
11	2613	Tan-a-hill Creek near Boles	2.34	1960–68	1960	12.3	1,660	13	7.26	590	(1)
12	2615	Fourche La Fave River near Gravelly	413	1939–68	1960	30.30	69,400	14	26.95	37,400	5
13	2618	Brogan Creek near Rover	1.03	1962–68	1966	9.59	1,010	13	6.39	380	(1)
14	2620	Nimrod Lake near Nimrod	680	1942–68	1945	[4]374.80	[5]369,700	20	[4]370.15	[5]286,300	.....
								15	.....	[6]36,000	.....
15	2625	Fourche La Fave River near Nimrod	680	1935–68	1935	28.8	39,000	25	9.24	5,290	.....
16	2630	South Fourche La Fave River near Hollis	211	1941–68	1945	19.47	54,400	14	13.79	21,400	4
17	2631	Fourche La Fave River tributary near Perryville	1.50	1962–68	1966	9.51	662	13	7.86	320	(1)
18	2634	Little Maumelle River at Ferndale	14.9	1963–68	1966	12.19	4,300	13	10.88	2,500	(1)
19	.....	Rock Creek at Shackleford Road in Little Rock	8.50	.....	.....	.....	.....	13	[4]370.66	3,450	(1)
20	.....	Grassy Flat Creek at Rodney Parham Road in Little Rock	4.71	.....	.....	.....	.....	13	[4]336.92	1,560	(1)
21	.....	Coleman Creek at 28th Street in Little Rock	2.78	.....	.....	.....	.....	13	[4]274.30	1,140	(1)
22	2638.6	Mile Branch near Tomberlin	2.6	1963–68	1967	10.97	490	13	10.93	475	(1)
23	2639.1	Cypress Branch near Jacksonville	2.36	1961–68	1963	12.06	1,280	13	[7]12.53	800	(1)
24	2640	Bayou Meto near Lonoke	203	1954–68	1958	25.13	3,440	18	26.55	4,700	[2]1.10
25	2641	White Oak Branch near Lonoke	8.54	1961–68	1964	9.34	1,500	13	8.97	1,020	(1)
		Red River basin									
26	7–3370	Red River at Index	[8]48,030	1936–68	1938	34.25	297,000	19	23.56	125,000	
27	3387	Twomile Creek near Hatfield	16.1	1963–68	1968	8.67	1,830	13	11.89	6,260	(1)
28	3395	Rolling Fork near DeQueen	181	1947–68	1947	25.6	110,000	13	23.34	54,500	[2]1.36
29	3398	Pepper Creek near DeQueen	6.43	1961–68	1961	7.03	1,440	13	[9]9.39	6,240	(1)
30	3400	Little River near Horatio	2,674	1915–68	1915	38.0	124,000	14	33.22	69,900	4
31	3402	West Flat Creek near Foreman	10.6	1962–68	1965	11.92	2,500	17	11.93	2,500	(1)
32	3403	Cossatot River near Vandervoort	89.4	1961–68	1961	23.0	48,000	13	18.13	26,900	[2]1.11
33	3405	Cossatot River near DeQueen	361	1938–68	1961	20.70	62,000	13	22.60	122,000	[2]2.01
34	3405.3	Mill Slough tributary near Lockesburg	.64	1963–68	1964	7.27	385	17	[3]8.57	552	(1)

35	3410	Saline River near Dierks	124	1920–68	1961	22.50	52,000	13	22.95	59,200	[2]1.95
36	7–3411	Rock Creek near Dierks	9.48	1961–68	1961	12.6	9,390	13	8.58	3,050	(1)
37	3412	Saline River near Lockesburg	260	1961–68	1961	25.7	(1)	....	.....	.....	.....
				1963–68	1967	16.97	15,600	14	20.86	64,700	[2]1.33
38	3413	Millwood Reservoir near Ashdown	4,144	1966–68	1968	[4]261.94	[5]292,800	22	[4]282.49	[5]1,457,000	.....
								16	.....	[6]120,000	.....
39	3415	Red River at Fulton	[8]52,380	1927–68	1938	36.45	338,000	....	.....	.....	.....
					1945	37.4	.....	21	24.40	122,000	.....
40	3417	Caney Creek near Hope	12.9	1963–68	1966	12.80	5,410	10	12.24	4,050	(1)
41	3558	Lewis Creek tributary near Mena	.64	1961–68	1967	3.86	225	13	3.94	235	(1)
42	3559	Big Fork tributary at Big Fork	.16	1964–68	1966	7.45	44	13	8.21	66	(1)
43	3560	Ouachita River near Mount Ida	410	1941–68	1960	32.18	57,300	14	28.40	40,100	6
44	3565	South Fork Ouachita River at Mount Ida	64	1949–68	1960	13.69	17,900	13	15.00	20,000	50
45	3567	Barnes Branch near Mount Ida	1.85	1961–68	1965	12.01	675	13	12.22	760	(1)
46	3575	Lake Ouachita near Hot Springs	1,105	1952–68	1957	[4]584.01	[5]2,402,100	19	[4]588.63	[5]2,609,300	.....
								13	.....	[6]136,000	.....
47	3575.01	Ouachita River at Blakely Mountain Dam near Hot Springs	1,105	1950–68	1953	.....	9,400	31	.....	9,350	.....
48	3577	Glazypeau Creek at Mountain Valley	4.3	1961–68	1963	11.85	2,110	13	11.44	1,250	(1)
49	3585	Lake Hamilton near Hot Springs	1,441	1930–68	1945	[4]402.28	[5]208,100	13	[4]402.12	[5]206,648	.....
50	3590	Lake Catherine at Jones Mill	1,516	1924–68	1927	[4]315.75	[5]59,160	13	[4]311.30	[5]48,750	.....
51	3595	Ouachita River near Malvern	1,562	1903–05, 1922–68	1923	30.3	140,000	14	26.02	110,000	[2]1.51[10]
52	3595.2	Ouachita River tributary near Malvern	3.0	1962–68	1964	7.75	555	13	8.26	650	(1)
53	3597	Caddo River at Glenwood	192	1939–68	1945	27.0	65,000	13	31.40	88,000	[2]2.13
54	3597.5	Little Sugarloaf Creek near Bonnerdale	2.34	1962–68	1966	11.11	1,550	13	13.11	2,540	(1)
55	3598	Caddo River near Alpine	312	1938–68	1945	30.16	64,200	13	35.64	85,000	[2]1.60
56	.....	DeGray Reservoir near Arkadelphia	453	1968	.....	.....	.....	14	[4]329.6	[5]96,420	.....
57	3599.1	Caddo River below DeGray Dam near Arkadelphia	480	1964–68	1966	18.98		14	.....	[6]120,000	.....
							37,500	14	21.55	[11]44,300	.....
58	3600	Ouachita River at Arkadelphia	2,311	1905–06, 1929–68	1948	30.3	170,000	14	30.08	162,000	.....
59	3601.5	Pearson Creek tributary near Dalark	.40	1961–68	1964	5.81	147	13	4.93	101	(1)
60	3605	Lake Greeson near Murfreesboro	237	1949–68	1953	[4]557.84	[5]359,330	18-19	[4]564.60	[5]423,800	.....
								13	.....	[6]97,000	.....
61	3605.01	Little Missouri River at Narrows Dam Near Murfreesboro	237	1950–68	1957	.....	5,210	23	.....	3,600	.....
62	3608	Muddy Fork Creek near Murfreesboro	121	1940–68	1945	29.7	47,100	13	21.35	22,000	14
63	3610	Little Missouri River near Murfreesboro	380	1927–68	1927	21	(1)	....	.....	.....	.....
				1928–31, 1937–68	1945	19.84	120,000	13	14.44	20,800	.....
64	3610.2	Prairie Creek tributary near Kirby	.16	1963–68	1966	5.7	182	13	7.29	306	(1)
65	3611.8	South Fork Ozan Creek near Ozan	17.6	1963–68	1967	24.33	5,400	11	23.74	5,000	(1)
66	3612	Ozan Creek near McCaskill	148	1939–68	1945	19.9	30,000	11	17.93	18,900	18
67	.....	Little Missouri River near Delight	713	1944–68	1945	24.3	(1)	11	21.50	45,000	.....
68	3615	Antoine River at Antoine	181	1905–68	1905	29.7	40,000	14	27.60	28,400	10
69	7–3616	Little Missouri River near Boughton	1,068	1905–68	1945	27.2	111,000	15	23.29	52,500	.....
70	.....	Little Missouri River near Whelen Springs	1,414	1944–68	1945	34.9	(1)	15	30.50	60,000	.....
71	3616.8	Little Caney Creek near Rosston	1.5	1961–68	1961	13.7	1,270	17	8.51	175	(1)
72	3617.8	Old Bradshaw Creek near Hollywood	3.46	1962–68	1962	14.34	815	13	15.15	915	(1)

See footnotes at end of table.

TABLE 6.—*Summary of flood stages and discharges*—Continued

Reference No.	Permanent station No.	Stream and place of determination	Drainage area (sq mi)	Maximum previously known: Period of record	Year	Gage height (ft)	Discharge (cfs)	Maximum May 1968: Day	Gage height (ft)	Cubic feet per second	Recurrence interval (yr)
Red River basin—Continued											
73	3620	Ouachita River at Camden	5,391	1882–68	1882	46.0	(1)	....	.....	.....	.....
				1886–68	1945	44.82	243,000	17	43.08	183,000	.....
74	3620.5	Ross Creek near Camden	10	1961–68	1966	14.0	3,200	17	9.96	570	(1)
75	3621	Smackover Creek near Smackover	377	1938–68	1958	21.21	25,000	19	17.30	7,250	3
76	3623.3	Dunn Creek near Hampton	7.0	1962–68	1966	10.11	4,240	17	8.51	1,520	(1)
77	3624.5	Cook Creek near Fordyce	5.2	1962–68	1966	11.09	1,340	13	11.78	1,950	(1)
78	3625	Moro Creek near Fordyce	216	1938–68	1958	16.47	26,800	15	13.82	9,000	5
79	3630	Saline River at Benton	569	1927–68	1927	30.5	110,000	14	26.50	66,000	20
80	3630.5	Holly Creek tributary near Benton	1.46	1962–68	1964	6.51	475	13	5.93	315	(1)
81	3632	Saline River near Sheridan	1,129	1938–68	1938	21.0	[12]64,000	16	21.38	63,000	16
82	3633	Hurricane Creek near Sheridan	204	1938–68	1960	18.55	52,300	14	16.03	15,700	4
83	3633.3	West Fork Big Creek at Sheridan	4.86	1960–68	1960	18.74	3,720	13	14.22	730	(1)
84	3634.3	East Fork Derrieusseaux Creek near Pine Bluff	.64	1961–68	1962	9.29	237	13	7.82	92	(1)
85	3634.5	Saline River tributary near Rison	.27	1964–68	1968	6.21	64	13	7.93	159	(1)
86	3635	Saline River near Rye	2,062	1927–68	1927	30.5	73,000	18	31.40	74,500	23
87	3640.3	Eagle Creek tributary near Hermitage	.75	1963–68	1966	4.64	59	17	4.03	22	(1)
88	3640.7	Bear Creek near Strong	6.0	1963–68	1966	13.28	430	17	11.45	200	(1)
89	3641.1	Nevins Creek tributary near Pine Bluff	.79	1961–68	1962	5.76	.....	14	6.56	231	(1)
					1964	.....	160	....	.....	.....	.....
90	3641.2	Bayou Bartholomew near Star City	215	1941–68	1958	26.29	4,000	20	23.00	1,950	4
91	3641.25	Cane Creek at Star City	4.9	1962–68	1964	9.09	1,500	17	8.29	980	(1)
92	3641.5	Bayou Bartholomew near McGehee	592	1930–68	1958	24.49	6,870	26	20.21	4,120	6
93	3641.65	Upper Cutoff Creek near Monticello	18	1963–68	1964	10.10	1,150	17	10.03	1,100	(1)
94	3641.9	Bayou Bartholomew at Wilmot	1,170	1925–68	1958	26.16	8,000	31	[13]21.90	5,000	2
95	3642.6	Hanks Creek near Hamburg	14	1962–68	1966	10.46	1,300	17	8.91	550	(1)

[1] not determined.
[2] Ratio of peak discharge to that of the 50-year flood.
[3] From floodmark.
[4] Elevation, in feet.
[5] Contents, in acre-feet.
[6] Computed rate of peak inflow.
[7] Affected by backwater; see station description.
[8] Includes 5,936 square miles which is noncontributing.
[9] At downstream side of bridge.
[10] For area below Lake Ouachita.
[11] Affected by temporary storage in DeGray Reservoir.
[12] Revised.
[13] Stream crested June 4; see station description.

mum stages and discharges are available. However, tables of daily discharges are given for two continuous-record crest-stage gages.

The description of the station gives information concerning the location, drainage area, type and datum of gage, details of gage-height and discharge records, and miscellaneous remarks. The paragraph on the discharge record briefly explains the methods used to define the stage-discharge relation throughout the experienced range in stage during the floods. This paragraph also describes auxiliary methods used to obtain the discharge and conditions that may have affected the stage-discharge relation.

The maximum stage and discharge at each station are given for the floods of May 1968, for previous floods during the period of record, and, if available, for floods outside the period of record.

The tables of stages and discharges at indicated times give sufficient data so that accurate hydrographs of stage and discharge can be drawn. The period of time covered is from prior to the start of the major rise to an arbitrary cutoff point on the recession. The stages at most stations were obtained from records of digital or continuous water-stage recorders. For a station with an incomplete stage record, the gage height at a specific time may be selected from a graph that has been reconstructed from supplemental gage readings, high-water marks, and other pertinent evidence. A description of the methods used in defining the stage is given in the section of the description concerning gage-height record.

Daily mean discharge, if computed from these flood-detail sheets, may differ slightly from the daily mean discharge shown in the table of daily mean discharges. At a station where a digital recorder is set to punch at 15-minute intervals, data for many of the 96 punches during the day were omitted from the table of stages and discharges. Only those data necessary to define the flood hydrograph with reasonable accuracy are included.

The stages and discharges given should not be used in preparation of a stage-discharge relation, or rating curve, for use outside the flood period. For many stations the relation used to compute the discharge was shifted from the basic rating for various reasons; such as changes in the control, varying slope caused by backwater or changing discharge, or a combination of these.

ARKANSAS RIVER BASIN

(1) 7–2470. POTEAU RIVER AT CAUTHRON, ARK.

Location.—Lat 34°55′08″, long 94°17′55″, in NW¼SW¼ sec. 16, T. 3 N., R. 31 W., on right bank at downstream side of highway bridge at Cauthron, 2.9 miles downstream from Cross Creek, 7.8 miles downstream from Jones Creek and at mile 109.0.

Drainage area.—200 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 569.53 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 22,000 cfs 0800 hours May 14 (gage height, 21.75 ft).
1939 to April 1968: Discharge, 32,200 cfs May 20, 1960 (gage height, 23.76 ft).
1935 to April 1968: Discharge, not determined June 1935 (gage height, 27.4 ft, from information by local resident).

Remarks.—Since September 1967, flow from 55.6 sq mi upstream from this station is partly controlled by nine floodwater-detention reservoirs with total capacity of 24,876 acre-ft below flood spillway crests, of which 22,064 acre-ft is flood-detention capacity, 2,100 acre-ft is water-supply storage, and 712 acre-ft is sediment-storage capacity.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	209	9	1,140	17	2,330	25	150
2	144	10	1,450	18	1,380	26	273
3	195	11	2,410	19	775	27	188
4	298	12	1,660	20	564	28	334
5	147	13	10,700	21	442	29	197
6	105	14	14,500	22	368	30	131
7	82	15	1,610	23	264	31	110
8	645	16	1,410	24	191		

Monthly mean discharge	cubic feet per second	1,432
Runoff	inches	8.26
Runoff	acre-feet	88,070

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 12*			*May 14*....Cont.		
2400	5.31	88	0600	9.63	2,120	2200	12.60	3,770
May 8			1200	8.47	1,520	2400	10.65	2,670
0200	5.53	144	2100	7.60	1,020	*May 15*		
0400	6.10	320	2200	7.59	1,020	0200	9.56	2,120
0600	7.06	725	2400	8.14	1,320	0600	8.84	1,680
1000	7.84	1,160	*May 13*			1200	8.48	1,520
1400	7.33	882	0200	9.10	1,840	2100	8.14	1,320
1800	6.74	578	0400	11.90	3.380	2400	8.17	1,320
2400	6.35	410	0500	14.00	4,540	*May 16*		
May 9			0600	15.40	5,500	0700	8.71	1,620
0700	6.14	334	0700	16.30	6,340	2100	7.93	1,210
1000	6.34	406	0800	16.86	7,060	2200	7.93	1,210
1300	7.20	800	1100	18.20	8,920	2400	8.10	1,300
1500	8.80	1,680	1300	19.25	10.800	*May 17*		
1900	10.34	2,500	1500	20.20	14,400	0400	9.43	2,010
2400	9.18	1,900	1800	20.80	17,200	0800	10.87	2,840
May 10			2000	20.62	16,200	1000	11.06	2,940
0600	7.74	1,100	2100	20.73	16,700	1800	9.95	2,340
1200	7.23	828	2200	21.50	20,700	2400	9.18	1,900
1800	8.33	1,400	2300	21.66	21,700	*May 18*		
2400	11.02	2,890	2400	21.55	21,200	1200	8.13	1,320
May 11			*May 14*			2400	7.52	965
0100	11.10	2,940	0300	21.37	20,200	*May 19*		
0600	10.13	2,400	0800	21.75	22,000	1200	7.17	775
1100	9.19	1,900	1000	21.48	20,700	2400	6.87	628
1300	9.24	1,900	1200	20.80	17,200	*May 20*		
1900	10.61	2,670	1500	19.38	11.400	1200	6.71	564
2000	10.62	2,670	1800	17.30	7.620	2400	6.56	497
2400	10.53	2,620	2000	15.20	5.340			

(2) 7-2493.JAMES FORK NEAR MIDLAND, ARK.

[Crest-stage station]

Location.—Lat 35°07′27″, long 94°20′20″, in NW¼NW¼ sec. 32, T. 5 N., R. 31 W., on right bank on downstream side of bridge pier on State Highway 252, 1.6 miles southeast of Midland, 2.1 miles upstream from Prairie Creek, and 2.5 miles downstream from West Creek.

Drainage area.—43.9 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,600 cfs and by contracted-opening measurement at 25,400 cfs.

Maximums.—May 1968: Discharge, 25,400 cfs May 14 (gage height, 13.49 ft, from gage; 13.09 ft, from high-water profile).

1963 to April 1968: Discharge, 5,800 cfs Sept. 27, 1964 (gage height, 8.17 ft).

(3) 7-2494. JAMES FORK NEAR HACKETT, ARK.

Location.—Lat 35°09′45″, long 94°24′25″, in NW¼NW¼ sec. 34, T. 6 N., R. 32 W., near left bank on downstream side of pier of bridge on State Highway 45, 1.7 miles south of Hackett, 2 miles downstream from Elder Branch, 2 miles upstream from small tributary, and 3.6 miles upstream from Arkansas-Oklahoma State line.

Drainage area.—148 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 459.71 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 20,000 cfs.

Maximums.—May 1968: Discharge, 30,000 cfs 1100 hours May 14 (gage height, 23.00 ft), from rating curve extended above 20,000 cfs by logarithmic plotting.

1958 to April 1968: Discharge, 13,600 cfs July 15, 1961 (gage height, 21.84 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	54	9	241	17	1,160	25	151
2	47	10	232	18	680	26	333
3	44	11	598	19	374	27	172
4	70	12	524	20	246	28	489
5	65	13	5,080	21	192	29	210
6	53	14	17,100	22	187	30	140
7	45	15	1,690	23	160	31	124
8	152	16	620	24	136		

Monthly mean discharge	cubic feet per second	1,012
Runoff	inches	7.88
Runoff	acre-feet	62,220

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 11*—Cont.			*May 15*		
2400	2.06	46	2400	7.72	780	0200	17.45	3,520
May 8			*May 12*			0400	15.60	2,740
0800	2.04	45	1200	5.70	436	0700	12.95	1,920
0900	2.19	52	2100	5.06	341	1000	10.92	1,400
1000	3.70	170	2300	6.89	636	1600	8.69	960
1200	4.93	327	2400	8.70	967	2400	7.71	760
1800	3.99	202	*May 13*			*May 16*		
2400	3.41	141	0200	9.58	1,140	1200	7.00	620
May 9			0400	11.82	1,610	2400	6.48	526
0600	3.15	118	0600	15.24	2,590	*May 17*		
1200	3.53	155	0800	17.54	3,580	0400	7.60	740
1600	4.80	306	1200	19.17	4,740	0800	10.45	1,300
1900	6.04	484	1800	19.73	5,260	1130	11.88	1,640
2400	5.12	348	2000	21.20	9,150	1700	10.40	1,300
May10			2300	21.71	12,400	2400	8.75	980
1400	3.79	180	2400	21.60	11,600	*May 18*		
2400	5.60	420	*May 14*			1200	7.23	660
May 11			0600	22.20	17,000	2400	6.23	472
0400	6.64	582	1100	23.00	30,000	*May 19*		
1100	5.96	484	1900	21.66	12,000	1200	5.55	366
1600	6.54	564	2200	20.49	6,350	2400	5.04	293
2100	8.13	853	2400	19.22	4,740			

(4) 7–2582. PACK SADDLE CREEK TRIBUTARY NEAR WALDRON, ARK.

[Crest-stage station]

Location.—Lat 34°58′18″, long 94°05′43″, in SE¼SE¼ sec. 29, T. 4 N., R. 29 W., on left bank 15 ft upstream from culvert on U.S. Highway 71, 0.4 mile upstream from small tributary, 0.5 mile upstream from mouth, and 5.2 miles north of Waldron.

Drainage area.—0.93 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 260 cfs and by flow-through-culvert measurement at 689 cfs.

Maximums.—May 1968: Discharge, 689 cfs May 13 (gage height, 9.42 ft, from high-water profile).

1961 to April 1968: Discharge, 267 cfs, Apr. 13, 1968 (gage, 6.05 ft, from high-water profile).

(5) 7–2585. PETIT JEAN RIVER NEAR BOONEVILLE, ARK.

Location.—Lat 35°06′25″, long 93°55′25″, in NW¼NW¼ sec. 18, T. 5 N., R. 27 W., on right bank at downstream side of bridge on State Highway 23, 0.5 mile downstream from Fletcher Creek, 2¼ miles south of Booneville, and at mile 102.3.

Drainage area.—247 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 423.39 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 21,000 cfs and by contracted-opening and slope-area measurement at 43,200 cfs.

Maximums.—May 1968: Discharge, 27,300 cfs 0500 hours May 14 (gage height, 22.21 ft).

1938 to April 1968: Discharge, 43,200 cfs Apr. 16, 1939 (gage height, 23.42 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	82	9	1,360	17	2,040	25	821
2	69	10	1,420	18	1,060	26	1,060
3	353	11	2,460	19	507	27	299
4	327	12	1,600	20	310	28	847
5	146	13	8,860	21	243	29	286
6	96	14	22,900	22	315	30	186
7	80	15	3,450	23	210	31	158
8	2,550	16	893	24	160		

Monthly mean discharge.....cubic feet per second.... 1.779
Runoff.....inches 8.30
Runoff.....acre-feet 109,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 11*—Cont.			*May 15*—Cont.		
2400	2.60	86	2100	9.86	2,900	0300	18.60	7,750
May 8			2400	9.36	2,670	0400	17.20	6,570
0100	2.74	106	0600	7.92	2,010	0600	13.70	4,670
0200	4.50	560	*May 12*			0800	10.00	2,950
0300	6.30	1,300	0600	7.92	2,010	1000	7.80	1,960
0500	7.80	1,960	1200	6.64	1,430	1200	7.00	1,610
0700	9.52	2,720	1800	5.93	1,130	1800	6.24	1,260
1000	11.30	3,550	2200	5.52	956	2400	5.75	1,060
1400	12.92	4,290	2400	5.95	1,130	*May 16*		
1700	11.62	3,690	*May 13*			1600	5.28	872
2000	8.27	2,180	0200	8.05	3,050	2400	4.97	732
2200	6.62	1,430	0400	10.00	2,950	*May 17*		
2400	5.87	1,110	0500	12.50	4,100	0200	6.20	1,260
May 9			0600	14.20	4,910	0400	7.64	1,870
0700	4.78	672	0800	17.00	6,430	0800	9.60	2,770
1200	7.07	1,650	1200	19.43	8,770	1000	9.80	2,560
1500	6.88	1,570	1400	19.36	8,770	1600	8.53	2,270
2100	7.65	1,870	1800	20.00	10,300	2000	7.47	1,830
2400	7.33	1,740	2000	20.60	12,800	2400	6.74	1,480
May 10			2200	21.46	19,100	*May 18*		
0600	5.86	1,110	2400	21.98	24,600	1200	5.69	1,040
1200	5.36	893	*May 14*			2400	4.89	712
1800	7.00	1,610	0500	22.21	27,300	*May 19*		
2400	8.74	2,360	1200	22.06	25,900	1200	4.31	490
May 11			1800	21.54	19,100	2400	3.96	380
0400	9.13	2,540	2400	20.69	13,400	*May 20*		
1100	7.72	1,920	*May 15*			1200	3.70	304
1800	9.75	2,860	0200	20.00	10,300	2400	3.53	261

(6) 7-2590. BLUE MOUNTAIN RESERVOIR NEAR WAVELAND, ARK.

Location.—Lat 35°06′06″, long 93°39′02″, in NW¼NW¼ sec. 15, T. 5 N., R. 25 W., at outlet structure at Blue Mountain Dam on Petit Jean River, and 1.9 miles southwest of Waveland.

Drainage area.—488 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Maximums.—May 1968: Contents, 250,530 acre-ft May 18 (elevation, 418.33 ft). Computed rate of inflow, 43,000 cfs May 13.

1947 to April 1968: Contents, 298,560 acre-ft May 26, 1957 (elevation, 422.54 ft).

Remarks.—Reservoir is formed by earth-fill dam. Regulated storage began Mar. 13, 1947. Capacity, 257,900 acre-ft at crest of spillway (elevation, 419.0 ft) and 24,640 acre-ft at top of conservation pool (elevation, 384.0 ft.). Reservoir is used principally for flood control, conservation, and recreation.

Cooperation.—Records furnished by Corps of Engineers.
Capacity.—

Elevation (feet)	*Contents (acre-ft)*	*Elevation (feet)*	*Contents (acre-ft)*
397	76,510	410	169,100
400	93,620	415	216,000
405	128,100	419	257,900

Contents, in acre-feet, at 2400 hours of indicated day, May 1968

Day	Contents	Day	Contents	Day	Contents	Day	Contents
1	96,450	9	89,200	17	249,400	25	235,300
2	92,030	10	96,200	18	250,200	26	240,000
3	90,730	11	105,800	19	248,800	27	239,700
4	89,550	12	112,500	20	245,800	28	239,600
5	86,190	13	156,400	21	242,600	29	237,100
6	86,190	14	223,200	22	239,400	30	233,300
7	78,850	15	240,900	23	235,500	31	228,900
8	82,660	16	243,400	24	231,300		

Change in contents.....acre-feet +128,700

(7) 7-2595. PETIT JEAN RIVER NEAR WAVELAND, ARK.

Location.—Lat 35°06′17″, long 93°37′51″, in SE¼SW¼ sec. 11, T. 5 N., R. 25 W., on left bank 0.8 mile downstream from Rock Creek, 1.2 miles downstream from Cedar Creek, 1.3 miles south of Waveland, 1.4 miles downstream from Blue Mountain Dam, and at mile 73.0.

Drainage area.—517 sq mi.

Gage-height record.—Digital recorder tape punched at 15-minute intervals. Datum of gage is 339.70 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 7,660 cfs 0030 hour May 14 (gage height, 26.67 ft). 1939 to April 1968: Discharge, 62,600 cfs Apr. 16, 1939 (gage height, 29.95 ft, at site 1¾ miles upstream and at datum then in use, or 34.0 ft from floodmarks, present site).

Remarks.—Flow almost completely regulated by Blue Mountain Reservoir since March 1947.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	2,100	9	1,710	17	1,120	25	2,360
2	2,150	10	634	18	1,790	26	888
3	2,000	11	670	19	2,020	27	1,540
4	1,620	12	367	20	2,250	28	2,000
5	1,840	13	3,140	21	2,400	29	2,220
6	2,150	14	3,280	22	2,490	30	2,410
7	2,220	15	785	23	2,460	31	2,540
8	1,550	16	1,070	24	2,490		

Monthly mean discharge.....cubic feet per second 1,879
Runoff.....acre-feet 115,600

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 10			*May 13*—Cont.			*May 14*—Cont.		
2400	7.73	730	1200	18.86	3,660	1200	15.73	2,670
May 11			1400	17.42	3,150	1400	13.99	2,210
1000	6.40	483	1600	16.61	2,920	1600	12.44	1,780
1200	8.39	870	1800	18.68	3,590	1800	11.07	1,450
1400	8.85	950	2000	18.82	3,630	2000	9.94	1,180
2400	6.69	536	2200	20.84	4,400	2400	8.28	850
May 12			2400	26.33	7,420	*May 15*		
1200	5.63	347	*May 14*			0400	7.12	611
2400	5.24	283	0030	26.67	7,660	0800	6.45	483
May 13			0200	25.82	7,090	1200	6.00	415
0200	6.46	500	0400	23.83	5,810	1400	6.06	432
0400	9.97	1,200	0600	21.81	4,830	1600	7.84	750
0600	17.03	3,030	0800	19.76	4,000	1800	10.07	1,230
0800	19.32	3,810	1000	17.64	3,220	2300	10.65	1,340
1000	19.63	3,920				2400	9.92	1,180

(8) 7–2600. DUTCH CREEK AT WALTREAK, ARK.

Location.—Lat 34°59′15″, long 93°36′45″, in SE¼NW¼ sec. 24, T. 4 N., R. 25 W., on left bank a quarter of a mile north of Waltreak and at mile 21.0.

Drainage area.—74 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 371.48 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge records.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 10,300 cfs 0600 hours May 14 (gage height, 17.58 ft-.

1927 to April 1968: Discharge, about 14,600 cfs in 1927 (gage height, 19.5 ft, from information by local resident).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	90	9	1,510	17	825	25	125
2	74	10	844	18	508	26	418
3	97	11	1,150	19	281	27	189
4	134	12	828	20	193	28	195
5	90	13	3,010	21	147	29	139
6	71	14	5,360	22	126	30	101
7	62	15	544	23	102	31	85
8	396	16	434	24	84		

Monthly mean discharge	cubic feet per second	587
Runoff	inches	9.15
Runoff	acre-feet	36,120

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 10*			*May 13*—Cont.		
2400	3.90	66	0600	6.56	662	1400	12.31	4,440
May 8			1200	6.33	592	1700	13.09	5,160
0200	4.19	95	1800	6.94	838	2100	11.96	4,170
0500	4.93	208	2400	8.21	1,470	2300	14.52	6,520
0700	5.57	351	*May 11*			2400	16.05	8,120
1300	6.31	575	0200	8.37	1,580	*May 14*		
1500	6.35	592	1200	7.05	882	0200	17.17	9,700
2000	6.01	478	2400	7.87	1,280	0600	17.58	10,300
2400	5.67	378	*May 12*			0900	16.26	8,480
May 9			0300	8.03	1,390	1100	14.24	6,220
0700	5.34	298	0900	6.94	838	1300	11.69	3,900
0800	6.03	493	1500	6.42	610	1500	9.46	2,240
0900	8.39	1,580	2400	5.96	463	1600	8.74	1,760
1000	9.71	2,370	*May 13*			2000	7.51	1,100
1200	11.49	3,720	0400	5.99	478	2400	6.93	838
1600	9.70	2,370	0700	6.79	770	*May 15*		
1800	8.44	1,580	0800	7.69	1,200	0600	6.39	610
2000	8.09	1,420	0900	8.59	1,700	1800	5.84	434
2200	7.94	1,330	1000	9.48	2,240	2400	5.67	378
2400	7.50	1,100	1200	10.84	3,140			

(9) 7–2605. PETIT JEAN RIVER AT DANVILLE, ARK.

Location.—Lat 35°04′, long 93°24′, in SE¼ sec. 25, T. 5 N., R. 23 W., on left bank at downstream side of bridge on State Highway 10 at Danville, 1,800 ft upstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 0.5 mile upstream from Spring Creek, and 0.6 mile downstream from Dutch Creek, and at mile 48.8.

Drainage area.—741 sq mi.

Gage-height record.—Water-stage recorder graph. Auxiliary water-stage recorder graph for gage 2.2 miles downstream. Datum of gage is 303.33 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 57,000 cfs. Fall used as a factor May 1–13, 16–31.

Maximums.—May 1968: Discharge, 20,000 cfs 1900–2000 hours May 14 (gage height, 25.18 ft).

1916 to April 1968: Discharge, 70,800 cfs Apr. 17, 1939 (gage height, 31.82 ft).

Remarks.—Floodflow affected by Blue Mountain Reservoir since March 1947.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	2,180	9	3,200	17	2,920	25	2,890
2	2,290	10	4,030	18	3,110	26	3,930
3	2,430	11	4,210	19	2,670	27	1,780
4	2,700	12	3,700	20	2,430	28	2,500
5	2,030	13	4,010	21	2,480	29	2,530
6	2,200	14	14,400	22	2,640	30	2,580
7	2,340	15	13,200	23	2,620	31	2,630
8	2,430	16	4,680	24	2,500		

Monthly mean discharge ..... cubic feet per second 3,556
Runoff ..... acre-feet 218,700

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 13*			*May 17*		
2400	13.73	2,520	0400	17.14	2,700	1200	17.88	2,890
May 9			1200	18.58	3,930	2400	17.47	2,940
1200	14.95	2,990	2400	21.10	6,120	*May 18*		
1800	16.72	3,762	*May 14*			1200	17.22	3,100
2400	17.81	4,100	1200	24.48	17,000	2400	16.50	2,820
May 10			1900	25.18	20,000	*May 19*		
1200	18.08	4,030	2000	25.18	20,000	1200	15.80	2,670
2400	18.48	4,048	2400	24.94	18,800	2400	15.06	2,450
May 11			*May 15*			*May 20*		
1200	18.82	4,170	1200	23.46	12,800	1200	14.64	2,400
2400	18.97	4,130	2400	21.85	7,050	2400	14.44	2,400
May 12			*May 16*					
1200	18.54	3,730	1200	20.41	4,680			
2400	17.52	3,010	2400	18.76	3,090			

(10) 7-2606.3 JAKE CREEK NEAR CHICKALAH, ARK.

[Crest-stage station]

Location.—Lat 35°07′45″, long 93°20′21″, in NW¼SE¼ sec. 33, T. 6 N., R. 22 W., on left bank 30 ft upstream from culvert on State Highway 27, 0.6 mile northeast of Ranger, 1.6 miles upstream from tributary, 2.2 miles upstream from mouth and 4.2 miles southwest of Chickalah.

Drainage area.—1.6 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 75 cfs and by flow-through-culvert measurements at 495 cfs and 717 cfs. (Flood of Dec. 28, 1968.)

Maximums.—May 1968: Discharge, 630 cfs May 13 (gage height, 8.01 ft). 1961 to April 1968: Discharge, 675 cfs March 20, 1968 (gage height, 8.16 ft).

(11) 7-2613. TAN-A-HILL CREEK NEAR BOLES, ARK.

[Crest-stage station]

Location.—Lat 34°43′49″, long 94°04′42″, in SW¼NW¼ sec. 22, T. 1 N., R. 29 W., on left bank 35 ft upstream from culvert on U.S. Highway 71, just upstream from small tributary, 0.3 mile southwest of "Y" City, 0.5 mile upstream from mouth and 3¾ miles southwest of Boles.

Drainage area.—2.34 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 130 cfs and by flow-through-culvert measurements at 296 cfs, 590 cfs, 929 cfs, 1,050 cfs, and 1,660 cfs.

Maximums.—May 1968: Discharge, 590 cfs May 13 (gage height, 7.26 ft).

1960 to April 1968: Discharge, 1,660 cfs May 5, 1960 (gage height, 12.3 ft, from floodmarks).

(12) 7-2615. FOURCHE LA FAVE RIVER NEAR GRAVELLY, ARK.

Location.—Lats 34°52′21″, long 93°39′24″, in NW¼NW¼ sec. 34, T. 3 N., R. 25 W., near left bank on downstream side of pier of bridge on State Highway 28, 1 mile downstream from Garner Creek, 1¾ miles east of Gravelly, 6.4 miles upstream from Gafford Creek, and at mile 103.7.

Drainage area.—413 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 410.50 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 47,000 cfs.

Maximums.—May 1968: Discharge, 37,400 cfs 1000 hours May 14 (gage height, 26.95 ft.).

1939 to April 1968: Discharge, 69,400 cfs May 20, 1960 (gage height, 30.30 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	1,090	9	4,070	17	4,940	25	508
2	800	10	4,600	18	4,440	26	1,160
3	640	11	7,030	19	2,120	27	972
4	583	12	5,380	20	1,360	28	906
5	490	13	8,190	21	1,020	29	863
6	382	14	31,100	22	821	30	602
7	324	15	5,240	23	680	31	472
8	961	16	4,010	24	545		

Monthly mean discharge	cubic feet per second	3,106
Runoff	inches	8.67
Runoff	acre-feet	91,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 12*—Cont.			*May 16*—Cont.		
2400	3.16	376	1500	9.38	4,450	1100	9.56	4,650
May 8			1900	8.65	3,710	1630	10.09	5,150
0900	3.94	660	2400	7.93	3,080	2400	8.64	3,710
1400	4.85	1,040	*May 13*			*May 17*		
1900	5.86	1,590	0600	7.40	2,670	0400	8.39	3,530
2400	5.64	1,440	1200	8.96	4,070	1000	9.31	4,350
May 9			1400	11.04	6,050	1500	10.63	5,650
0700	5.49	1,360	1600	14.57	10,100	2100	11.43	6,450
1100	7.55	2,830	1800	17.50	13,800	2400	11.28	6,350
1400	11.09	6,150	2000	19.41	16,500	*May 18*		
1600	10.57	5,650	2300	21.98	21,000	0600	10.28	5,350
2030	12.45	7,520	2400	23.20	23,700	1200	9.23	4,250
2400	11.47	6,550	*May 14*			1800	8.35	3,530
May 10			0200	25.93	32,500	2400	7.67	2,910
0400	10.10	5,150	0400	26.90	37,100	*May 19*		
0800	8.97	4,070	0700	26.80	36,500	1200	6.60	2,060
1500	8.19	3,350	1000	26.95	37,400	2400	5.94	1,590
2000	9.19	4,250	1500	26.01	32,900	*May 20*		
2200	10.88	5,950	1900	24.55	26,900	1200	5.46	1,340
2400	12.38	7,520	2200	21.25	19,500	2400	5.09	1,160
May 11			2400	17.86	14,300	*May 21*		
0300	13.02	8,180	*May 15*			1200	4.77	995
1000	11.78	6,860	0200	14.59	10,100	2400	4.53	906
1700	10.88	5,950	0400	12.10	7,190	*May 22*		
2000	11.73	6,750	1200	8.92	3,980	1200	4.32	800
2400	12.38	7,520	1800	8.07	3,260	2400	4.16	740
May 12			2400	7.45	2,670	1200	4.00	680
0200	12.47	7,630	*May 16*			*May 23*		
0600	11.95	7,080	0400	7.31	2,590	2400	3.79	602
1000	10.70	5,750	0800	8.67	3,800			

(13) 7–2618. BROGAN CREEK NEAR ROVER, ARK.

[Crest-stage station]

Location.—Lat 34°54′28″, long 92°24′06″, in NW¼SE¼ sec. 13, T. 3 N., R. 23 W., on right bank 35 ft upstream from culvert on State Highway 27, just downstream

from small tributary, 0.3 mile upstream from small tributary, 2.7 miles south of Rover.

Drainage area.—1.03 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements at 18 cfs and by flow-through-culvert measurements at 239 cfs and 1,010 cfs.

Maximums.—May 1968: Discharge, 380 cfs May 13 (gage height, 6.39 ft).

1962 to April 1968: 1,010 cfs April 23, 1966 (gage height, 9.59 ft).

(14) 7–2620. NIMROD LAKE NEAR NIMROD, ARK.

Location.—Lat 34°57′07″, long 93°09′38″, in NW¼SW¼ sec. 32, T. 4 N., R. 20 W., at Nimrod Dam on Fourche La Fave River, 4.8 miles west of Nimrod, 10.2 miles upstream from South Fourche La Fave River, and at mile 62.6.

Drainage area.—680 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Maximums.—May 1968: Contents, 286,300 acre-ft May 20 (elevation, 370.15 ft). Computed rate of inflow, 36,000 cfs May 15.

1942 to April 1968: Contents, 369,700 acre-ft March 31, 1945 (elevation, 374.80 ft).

Remarks.—Reservoir is formed by concrete gravity dam. Regulated storage began May 18, 1942. Capacity, 336,000 acre-ft at crest of spillway (elevation, 373.0 ft) and 29,000 acre-ft at top of conservation pool (elevation, 342.0 ft). Reservoir is used principally for flood control, conservation, and recreation.

Cooperation.—Records furnished by Corps of Engineers.

Capacity.—

Elevation (feet)	*Contents (acre-ft)*	*Elevation (feet)*	*Contents (acre-ft)*
345.0	41,020	365.0	209,800
350.0	68,600	370.0	283,900
355.0	105,100	375.0	373,500
360.0	151,800		

Contents, in acre-feet, at 2400 hours of indicated day, May 1968

Day	Contents	Day	Contents	Day	Contents	Day	Contents
1	48,230	9	54,630	17	266,800	25	257,500
2	45,560	10	78,430	18	280,100	26	258,700
3	43,840	11	101,800	19	285,000	27	257,300
4	43,340	12	118,400	20	284,800	28	251,900
5	42,260	13	142,100	21	280,700	29	246,000
6	41,510	14	196,700	22	274,800	30	239,300
7	41,270	15	244,800	23	267,900	31	233,200
8	42,400	16	253,900	24	261,000		

Change in contents ..... acre-feet +182,650

(15) 7–2625. FOURCHE LA FAVE RIVER NEAR NIMROD, ARK.

Location.—Lat 34°57′02″, long 93°09′14″, in NE¼SW¼ sec. 32, T. 4 N., R. 20 W., on left bank 2,000 ft downstream from Nimrod Dam, 4.5 miles west of Nimrod, and 9.8 miles upstream from South Fourche La Fave River.

Drainage area.—680 sq mi.

Gage-height record.—Digital recorder tape punched at 15-minute intervals. Datum

of gage is 305.25 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 34,000 cfs.

Maximums.—May 1968: Discharge, 5,290 cfs 1400 hours May 25 (gage height, 9.24 ft).

1935 to April 1968: Discharge, 39,000 cfs June 1935 (gage height, 28.8 ft), from information by Corps of Engineers.

Remarks.—Flow completely regulated by Nimrod Lake since May 1942.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	2,710	9	791	17	19	25	4,520
2	2,410	10	27	18	139	26	1,520
3	1,960	11	27	19	658	27	2,420
4	1,220	12	25	20	1,800	28	4,230
5	1,210	13	34	21	3,510	29	4,370
6	952	14	30	22	4,320	30	4,360
7	650	15	19	23	4,450	31	4,050
8	822	16	251	24	4,420		

Monthly mean discharge.....cubic feet per second 1,869
Runoff.....acre-feet 114,900

(16) 7–2630. SOUTH FOURCHE LA FAVE RIVER NEAR HOLLIS, ARK.

Location.—Lat 34°54′41″, long 93°03′21″, in SE¼NE¼ sec. 18, T. 3 N., R. 19 W., on left bank 0.8 mile upstream from Big Cove Creek, 2.1 miles downstream from Cedar Creek, 4 miles northeast of Hollis, and at mile 5.6.

Drainage area.—211 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 366.10 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 31,000 cfs and by slope-area measurements at 47,000 and 54,400 cfs.

Maximums.—May 1968: Discharge, 21,400 cfs 0300 hours May 14 (gage height, 13.79 ft).

1941 to April 1968: Discharge, 54,400 cfs Mar. 30, 1945 (gage height, 19.47 ft).

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	202	9	2,110	17	2,670	25	235
2	154	10	4,930	18	1,560	26	1,750
3	134	11	6,340	19	666	27	576
4	176	12	2,100	20	394	28	378
5	142	13	9,450	21	272	29	290
6	106	14	10,300	22	222	30	195
7	90	15	1,340	23	190	31	148
8	117	16	1,230	24	152		

Monthly mean discharge.....cubic feet per second 1,568
Runoff.....inches 8.57
Runoff.....acre-feet 96,430

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 11*			*May 13*—Cont.		
2400	3.42	128	0100	12.14	16,000	1200	11.36	13,700
May 9			0500	10.05	9,400	1400	12.40	16,900
0400	3.46	135	0900	7.76	4,210	2300	11.15	13,100
1200	3.92	252	1200	7.26	3,420	2400	11.61	14.400
1400	4.93	771	1500	7.62	3,970	*May 14*		
1600	6.28	2,100	1800	7.44	3,730	0100	13.20	19,500
1800	8.36	5,430	2000	7.62	3,970	0300	13.79	21,400
2100	9.05	6,780	2400	7.60	3,970	0500	12.48	17,300
2400	8.30	5,220	*May 12*			0800	11.57	14,400
May 10			0600	6.71	2,630	1200	10.16	9,980
0200	7.41	3,650	1200	6.12	1,860	1600	7.93	4,560
0400	6.78	2,770	2400	5.36	1,120	2000	7.05	3,120
0800	6.11	1,860	*May 13*			2400	6.42	2,230
1200	5.84	1,590	0300	5.30	1,070	*May 15*		
1600	6.91	2,910	0700	5.45	1,200	0600	5.86	1,590
1800	9.09	7,020	0800	6.44	2,300	1200	5.50	1,250
2000	10.28	10,300	0900	8.53	5,640	2300	5.08	884
2400	12.04	15,700	1000	10.60	11,200	2400	5.14	932

(17) 7–2631. FOURCHE LA FAVE RIVER TRIBUTARY NEAR PERRYVILLE, ARK.

[Crest-stage station]

Location.—Lat 35°01′14″, long 92°46′05″, in NW¼SW¼ sec. 1, T. 4 N., R. 17 W., on right bank wingwall 25 ft upstream from culvert on State Highway 60, 1.6 miles upstream from mouth and 2.2 miles northeast of Perryville.

Drainage area.—1.50 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 180 cfs and by flow-through-culvert measurements at 461 cfs and 662 cfs.

Maximums.—May 1968: Discharge, 320 cfs May 13 (gage height, 7.86 ft).
1962 to April 1968: Discharge, 662 cfs Apr. 23, 1966 (gage height, 9.51 ft).

(18) 7-2634. LITTLE MAUMELLE RIVER AT FERNDALE, ARK.

[Crest-stage station]

Location.—Lat 34°46′48″, long 92°33′15″, in NW¼SE¼ sec. 25, T. 2 N., R. 15 W., on downstream left bank 25 ft downstream from bridge on county road, 0.2 mile northeast of Ferndale, and 0.4 mile downstream from Ferndale Creek.

Drainage area.—14.9 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,200 cfs and by contracted-opening measurement at 9,430 cfs. (Flood of Jan. 30, 1969.)

Maximums.—May 1968: Discharge, 2,500 cfs May 13 (gage height, 10.88 ft).
1963 to April 1968: Discharge, 4,300 cfs Apr. 23, 1966 (gage height, 12.19 ft).

(19) ROCK CREEK AT SHACKLEFORD ROAD IN LITTLE ROCK, ARK.

[Miscellaneous site]

Location.—Lat 34°45′01″, long 92°23′38″, on east line of sec. 4, T. 1 N., R. 13 W., at bridge on Shackleford Road, 0.3 mile south of West Markham Street, and in Little Rock.

Drainage area.—8.50 sq mi.

Maximums.—May 1968: Discharge, 3,450 cfs May 13, from contracted-opening measurement. Mean water-surface elevation at downstream side of bridge over main channel, 368.89 ft above mean sea level (levels by Corps of Engineers).

(20) GRASSY FLAT CREEK AT RODNEY PARHAM ROAD IN LITTLE ROCK, ARK.

[Miscellaneous site]

Location.—Lat 34°45′24″, long 92°22′20″, in SW¼SW¼ sec. 35, T. 2 N., R. 13 W., downstream end of slope-area reach, about 400 ft upstream from bridge on Rodney Parham Road, 0.3 mile upstream from mouth, in Little Rock.

Drainage area.—4.71 sq mi.

Maximums.—May 1968: Discharge, 1,560 cfs May 13, from slope-area measurement. Mean water-surface elevation, 336.92 ft above mean sea level (levels by Corps of Engineers).

(21) COLEMAN CREEK AT 28TH STREET IN LITTLE ROCK, ARK.

[Miscellaneous site]

Location.—Lat 34°43′37″, long 92°20′18″, in SW¼SW¼ sec. 7, T. 1 N., R. 12 W., at culvert on West 28th Street, 0.2 mile east of University Avenue, 1.1 miles upstream from mouth, in Little Rock.

Drainage area.—2.78 sq mi.

Maximums.—May 1968: Discharge, 1,140 cfs May 13, from flow-through-culvert measurement. Mean water-surface elevation at downstream end of culvert, 274.30 ft above mean sea level (levels by Corps of Engineers).

(22) 7–2638.6 MILE BRANCH NEAR TOMBERLIN, ARK.

[Crest-stage station]

Location.—Lat 34°29′08″, long 91°51′13″, on Lonoke-Jefferson County line, in NW¼NE¼ sec. 3, T. 3 S., R. 8 W., on left bank 90 ft downstream from bridge on county road, 0.6mile east of State Highway 31, 2.3 miles southeast of Tomberlin.

Drainage area.—2.6 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 200 cfs and extended above by logarithmic plotting.

Maximums.—May 1968: Discharge, 475 cfs May 13 (gage height, 10.93 ft).

1963 to April 1968: Discharge, 490 cfs Dec. 2, 1967 (gage height, 10.97 ft).

(23) 7–2639.1 CYPRESS BRANCH NEAR JACKSONVILLE, ARK.

[Crest-stage station]

Location.—Lat 34°54′30″, long 92°10′55″, in SE¼NE¼ sec. 9, T. 3 N., R. 11 W., on left bank 47 ft upstream from culvert on State Highway 5, 1.0 mile upstream from mouth, and 5.0 miles northwest of Jacksonville.

Drainage area.—2.36 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 240 cfs and by flow-through-culvert measurement at 1,280 cfs. Backwater from Bayou Meto May 13; discharge estimated on basis of records of crest-stage gages on nearby streams.

Maximums.—May 1968: Discharge, 800 cfs May 13 (gage height, 12.53 ft).

1961 to April 1968: Discharge, 1,280 cfs Nov. 11, 1963 (gage height, 12.06 ft).

(24) 7–2640. BAYOU METO NEAR LONOKE, ARK.

Location.—Lat 34°44′10″, long 91°54′58″, in SW¼ sec. 6, T. 1 N., R. 8 W., near left bank on downstream side of bridge on State Highway 31, 3 miles upstream from Brushy Slough, 3½ miles south of Lonoke, and at mile 106.4.

Drainage area.—203 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 199.11 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 4,700 cfs 0200 hours May 18 (gage height, 26.55 ft). 1954 to April 1968: Discharge, 3,440 cfs May 6, 1958 (gage height, 25.13 ft); gage height, 25.16 ft May 29, 1957.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	510	9	176	17	4,280	25	1,840
2	355	10	324	18	4,640	26	1,690
3	257	11	890	19	4,280	27	1,500
4	230	12	1,120	20	3,860	28	1,310
5	236	13	1,370	21	3,360	29	1,070
6	271	14	2,430	22	2,810	30	842
7	257	15	3,600	23	2,380	31	622
8	212	16	3,860	24	2,050		

Monthly mean discharge	cubic feet per second	1,698
Runoff	acre-feet	104,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 15*			*May 23*		
2400	8.00	188	1200	25.50	3,600	1200	23.78	2,380
May 9			2400	25.82	3,860	2400	23.40	2,200
1200	7.72	170	*May 16*			*May 24*		
2400	7.83	176	0700	25.97	4,060	1200	23.06	2,080
May 10			1500	25.67	3,760	2400	22.67	1,960
0600	8.23	200	2400	25.83	3,860	*May 25*		
1200	9.12	250	*May 17*			1200	22.27	1,840
2000	12.24	470	1200	26.24	4,280	2400	21.88	1,760
2400	14.93	737	2400	26.50	4,640	*May 26*		
May 11			*May 18*			1200	21.48	1,690
1100	15.82	842	0200	26.55	4,700	2400	21.00	1,600
1300	16.38	914	1200	26.51	4,640	*May 27*		
2000	17.00	992	2400	26.42	4,520	1200	20.45	1,500
2400	17.41	1,050	*May 19*			2400	19.88	1,420
May 12			1200	26.22	4,280	*May 28*		
1200	17.89	1,120	2400	25.99	4,060	1200	19.20	1,310
2400	18.20	1,160	*May 20*			2400	18.43	1,190
May 13			1200	25.78	3,860	*May 29*		
0800	18.48	1,200	2400	25.50	3,600	1200	17.60	1,070
1600	20.31	1,480	*May 21*			2400	16.69	953
2300	21.42	1,670	1200	25.16	3,360	*May 30*		
2400	21.97	1,780	2400	24.82	3,040	1200	15.76	842
May 14			*May 22*			2400	14.79	726
0400	22.98	2,050	1200	24.48	2,810	*May 31*		
1200	24.08	2,540	2400	24.13	2,540	1200	13.80	622
1800	24.68	2,960				2400	12.74	526
2400	25.07	3,280						

(25) 7–2641. WHITE OAK BRANCH NEAR LONOKE, ARK.

[Crest-stage station]

Location.—Lat 34°46′20″, long 91°50′35″, on west line SW¼NW¼ sec. 26, T. 2 N., R. 8 W., on left downstream wingwall of bridge on county road, 3⅓ miles east of Lonoke, and 4.2 miles upstream from mouth.

Drainage area.—8.54 sq mi.

Gage-height record.—Crest stages only. Datum of gage is 217.67 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 1,020 cfs May 13 (gage height, 8.97 ft).

1961 to April 1968: Discharge, 1,500 cfs Apr. 4, 1964 (gage height, 9.34 ft).

RED RIVER BASIN

(26) 7–3370. RED RIVER AT INDEX, ARK.

Location.—Lat 33°33′07″, long 94°02′28″, in NW¼SW¼ sec. 7, T. 14 S., R. 28 W., near right bank on downstream side of pier of bridge on U.S. Highway 71 at Index, 2¼ miles south of Ogden, 21.8 miles upstream from Little River, and at mile 485.3.

Drainage area.—48,030 sq mi, of which 5,936 sq mi is probably noncontributing.

Gage-height record.—Water-stage recorder graph. Datum of gage is 246.87 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 125,000 cfs 2200 hours May 19; gage height, 23.56 ft 2400 hours May 20.

1936 to April 1968: Discharge, 297,000 cfs Feb. 23, 1938 (gage height, 34.25 ft).

Remarks.—Floodflow affected since Oct. 31, 1943, by Lake Texoma, 241 miles upstream (capacity, 5,392,900 acre-ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	16,300	9	10,900	17	80,500	25	59,100
2	14,800	10	23,800	18	104,000	26	59,100
3	14,800	11	31,100	19	120,000	27	60,500
4	13,800	12	31,100	20	122,000	28	61,200
5	11,800	13	30,600	21	114,000	29	51,600
6	10,400	14	35,500	22	93,000	30	44,900
7	10,400	15	45,500	23	69,900	31	41,300
8	10.400	16	59,100	24	61,200		

Monthly mean discharge	cubic feet per second	48,790
Runoff	acre-feet	3,000,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 15*—Cont.			*May 23*		
2400	9.08	10,400	1400	16.10	46,700	1200	18.97	69,900
May 9			1800	16.42	48,500	2400	18.28	64,300
0900	8.92	9,840	2400	16.90	51,600	*May 24*		
1500	9.19	10,700	*May 16*			1200	18.00	60,500
2400	10.75	15,900	1200	17.70	59,100	2400	17.88	59,800
May 10			1200	17.70	59,100	*May 25*		
0600	11.79	20,200	2400	18.39	63,500	1200	17.87	58,400
1200	12.63	24,500	*May 17*			2400	18.05	59,800
1800	13.26	28,400	1200	19.35	80,500	*May 26*		
2400	13.58	30,000	2400	20.41	90,000	1200	18.10	59,100
May 11			*May 18*			2400	18.20	59,800
1200	13.80	31,100	1200	21.58	104,000	*May 27*		
2400	13.78	31,100	2400	22.39	112,000	1200	18.44	60,500
May 12			*May 19*			2400	18.69	62,700
1200	13.74	31,100	1200	23.00	120,000	*May 28*		
2400	13.63	30,600	2200	23.47	125,000	1200	18.70	61,900
May 13			2400	23.46	125,000	2400	18.12	57,700
0600	13.49	30,600	*May 20*			*May 29*		
1400	13.28	29,400	1200	23.46	122,000	1200	17.21	51,600
2400	13.69	31,600	2400	23.56	123,000	2400	16.53	47,300
May 14			*May 21*			*May 30*		
1200	14.22	35,000	0900	23.40	117,000	1200	16.16	44,900
2400	14.90	38,900	2400	22.45	106,000	2400	15.78	42,500
May 15			*May 22*			*May 31*		
0600	15.28	41,900	1200	21.28	92,000	1200	15.58	41,300
1200	15.77	44,900	2400	20.10	80,500	2400	15.42	40,700

(27) 7–3387. TWOMILE CREEK NEAR HATFIELD, ARK.

[Crest-stage station]

Location.—Lat 34°30′52″, long 94°20′14″, in NW¼NW¼ sec. 8, T. 3 S., R. 31 W., on right bank 130 ft upstream from bridge on U.S. Highway 71, 0.5 mile upstream from small tributary, 1.5 miles downstream from Mill Creek, and 3.1 miles northeast of Hatfield.

Drainage area.—16.1 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 850 cfs and by contracted-opening measurement at 6.260 cfs.

Maximums.—May 1968: Discharge, 6,260 cfs May 13 (gage height 11.89 ft).
1963 to April 1968: Discharge, 1,830 cfs Mar. 20, 1968 (gage height, 867 ft).

(28) 7–3395. ROLLING FORK NEAR DeQUEEN, ARK.

Location.—Lat 34°02′51″, long 94°24′47″, in SW¼SW¼ sec. 21, T. 8 S., R. 32 W., near center of span on downstream side of pier of bridge on U.S. Highway 70, 4 miles west of DeQueen, 6 miles upstream from Rock Creek, and at mile 17.0.

Drainage area.—181 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 318.24 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 40,300 cfs and by contracted-opening measurement at 110,000 cfs.

Maximums.—May 1968: Discharge, 54,500 cfs 1630 hours May 13 (gage height 23.34 ft).
1947 to April 1968: Discharge, 110,000 cfs Aug. 27, 1947 (gage height, 25.6 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	730	9	3,020	17	6.940	25	350
2	490	10	2,850	18	3,020	26	1,460
3	356	11	3,080	19	1,210	27	672
4	314	12	2,340	20	700	28	422
5	245	13	18,600	21	502	29	284
6	178	14	8,190	22	389	30	199
7	164	15	2,220	23	304	31	151
8	2,510	16	1,760	24	236		

Monthly mean discharge	cubic feet per second	2,061
Runoff	inches	13.13
Runoff	acre-feet	126.700

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 11*....Cont.			*May 15*....Cont.		
2400	3.68	160	2000	12.84	3,890	2400	8.11	1,490
May 7			2400	12.36	3,600	*May 16*		
1200	3.58	146	*May 12*			0300	8.01	1,450
1500	3.55	141	0600	10.80	2,770	0900	8.82	1,840
1800	3.63	153	1800	8.58	1,700	1800	7.97	1,450
2400	4.20	254	2400	7.99	1,450	2200	9.92	2,330
May 8			*May 13*			2400	11.76	3,270
0300	5.33	514	0400	7.66	1,330	*May 17*		
0700	6.60	892	0700	9.70	2,240	0300	14.57	5,250
0900	9.75	2,280	0800	13.51	4,350	0500	15.32	6,380
1200	12.67	3,770	0900	16.60	8,600	0600	15.45	6,700
1500	13.46	4,280	1200	18.63	13,700	1100	16.93	9,280
2400	10.89	2,820	1300	20.00	19,800	1800	16.07	7,220
May 9			1630	23.34	54,500	2400	14.92	5,350
0600	9.33	2,060	2000	21.70	31,800	*May 18*		
1200	8.68	1,750	2400	19.10	15,200	0600	12.99	3,710
1700	12.80	3,890	*May 14*			1200	11.25	2,770
2000	14.31	5,090	0300	18.16	12,300	1800	9.83	2,100
2400	13.48	4,280	0600	17.67	10,700	2400	8.85	1,660
May 10			1200	16.29	8,000	*May 19*		
0700	10.99	2,870	1600	15.00	5,920	0600	8.13	1,370
1400	9.87	2,330	1800	14.29	5,090	1200	7.64	1,180
1800	10.26	2,520	2400	12.22	3,540	2400	6.84	858
2400	10.46	2,620	*May 15*			1200	6.30	700
May 11			0600	10.39	2,570	*May 20*		
0300	10.63	2,720	1200	9.31	2,060	2400	5.88	590
0900	10.29	2,520	1800	8.60	1,750			

(29) 7–3398. PEPPER CREEK NEAR DeQUEEN, ARK.

[Crest-stage station]

Location.—Lat 34°02′44″, long 94°18′13″, on north line NW¼NE¼ sec. 28, T. 8 S., R. 31 W., on left bank 26 ft downstream from bridge on U.S. Highway 71, 0.7 mile upstream from mouth, 1.5 miles east of junction of U.S. Highways 71 and 70, 2.3 miles east of DeQueen.

Drainage area.—6.43 sq mi.

Gage-height record.—Crest stages only. Stage for May 1968 flood determined from water surface at downstream side of bridge.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 6,240 cfs 1330 hours May 13 (gage height, 9.39 ft, at downstream side of bridge).

1961 to April 1968: Discharge, 1,440 cfs May 5, 1961 (gage height, 7.03).

(30) 7-3400. LITTLE RIVER NEAR HORATIO, ARK.

Location.—Lat 33°55'09", long 94°23'13", in NE¼NE¼ sec. 10, T. 10 S., R. 32 W., near left bank on downstream side of pier of bridge on State Highway 41, 0.9 mile downstream from Rolling Fork, 2.2 miles southwest of Horatio, 28.5 miles upstream from Cossatot River, and at mile 72.0.

Drainage area.—2,674 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 272.89 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 93,000 cfs. Rate of change in stage used as a factor May 1-3, 8-11, 13-14, 22-26, and 28-31.

Maximums.—May 1968: Discharge, 69,900 cfs 0800 hours May 14 (gage height, 33.22 ft). 1915 to April 1968: Discharge, 124,000 cfs August 1915 (gage height, 38 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	11,400	9	16,200	17	49,200	25	18,400
2	8,470	10	20,700	18	60,500	26	21,300
3	5,490	11	22,500	19	46,000	27	22,100
4	3,850	12	23,700	20	36,600	28	19,400
5	3,580	13	27,400	21	30,700	29	16,800
6	3,670	14	60,600	22	26,500	30	14,600
7	3,020	15	44,000	23	23,000	31	12,100
8	5,430	16	35,400	24	20,100		

Monthly mean discharge	cubic feet per second	22,990
Runoff	inches	9.91
Runoff	acre-feet	1,414,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 15*			*May 24*		
2400	8.77	3,020	1200	31.05	43,000	1200	24.23	20,100
May 8			2400	30.25	37,200	2400	23.34	18,800
0600	8.81	3,020	*May 16*			*May 25*		
1400	10.14	4,370	0700	30.00	36,000	1200	22.52	17,800
1800	12.46	7,410	1700	29.83	34,800	1300	22.50	18,500
2100	14.31	9,810	1900	30.00	36,000	1400	22.51	18,500
2400	15.95	12,300	2400	30.35	38,400	1900	22.33	17,800
May 9			*May 17*			2400	22.58	18,800
0600	18.30	14,800	1200	31.51	48,000	*May 26*		
1200	19.80	16,600	1800	32.28	57,900	1200	23.78	21,700
1800	21.08	17,900	2400	32.69	63,100	2400	25.10	22,700
2400	21.89	18.800	*May 18*			*May 27*		
May 10			0400	32.76	64,400	0600	25.23	22,400
1200	22.25	19,200	1200	32.57	61,800	1200	25.15	22,400
2400	24.36	22,000	2400	31.94	52,800	1800	24.87	22,000
May 11			*May 19*			2400	24.50	21,400
1200	25.09	22,700	1200	31.30	46,000	*May 28*		
2400	25.68	23,700	2400	30.70	40,600	1200	23.70	19,400
May 12			*May 20*			2400	22.84	18,100
1200	26.03	23,900	1200	30.15	37,200	*May 29*		
1800	26.11	23,700	2400	29.54	33,000	1200	21.89	16,800
2400	26.05	23,500	*May 21*			2400	20.85	15,600
May 13			1200	28.92	30,700	*May 30*		
0500	25.94	23,500	2400	28.24	28,600	1200	19.84	14,500
1200	26.62	25,800	*May 22*			2400	19.01	13,500
1800	27.50	28,000	0600	27.92	27,100	*May 31*		
2400	30.70	40,700	1200	27.58	26,500	1200	17.92	12,200
May 14			2400	26.83	24,700	2400	16.50	10,500
0800	33.22	69,900	*May 23*					
1800	32.65	61,800	1200	26.01	23,000			
2400	32.08	55,300	2400	25.15	21,700			

(31) 7–3402. WEST FLAT CREEK NEAR FOREMAN, ARK.

[Crest-stage station]

Location.—Lat 33°45′13″, long 94°23′28″, in NW¼SW¼ sec. 2, T. 12 S., R. 32 W., on left bank 25 ft downstream from bridge on State Highway 41, 150 ft downstream from small tributary, 2.3 miles north of Foreman, and 3 miles upstream from East Flat Creek.

Drainage area.—10.6 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 370 cfs and by contracted-opening measurement at 2,500 cfs.

Maximums.—May 1968: Discharge, 2,500 cfs May 17 (gage height, 11.93 ft).

1962 to April 1968: Discharge, 2,500 cfs Feb. 10, 1965 (gage height, 11.92 ft).

(32) 7–3403. COSSATOT RIVER NEAR VANDERVOORT, ARK.

Location.—Lat 34°22′46″, long 94°14′08″, in SE¼NE¼ sec. 30, T. 4 S., R. 30 W., near left bank on downstream side of bridge on State Highway 246, 0.3 mile downstream from Brushy Creek, 0.9 mile donwstream from Long Branch, 3.2 miles upstream from Flat Creek, 7.5 miles east of Vandervoort, and at mile 69.5.

Drainage area.—89.4 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 771.88 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 11,000 cfs and by step-backwater analysis above 11,000 cfs.

Maximums.—May 1968: Discharge, 26,900 cfs 1300 hours May 13 (gage height, 18.13 ft).

1961 to April 1968: Discharge, about 48,000 cfs May 6, 1961 (gage height, 23.0 ft, from information by local resident).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	142	9	804	17	1,330	25	189
2	115	10	1,300	18	890	26	671
3	104	11	2,000	19	472	27	287
4	104	12	990	20	278	28	357
5	82	13	9,520	21	192	29	220
6	68	14	3,110	22	159	30	150
7	61	15	890	23	124	31	118
8	295	16	520	24	102		

Monthly mean discharge	cubic feet per second	827
Runoff	inches	1067
Runoff	acre-feet	50,860

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 10*—Cont.			*May 13*—Cont.		
2400	2.56	66	1600	6.10	1,520	0700	6.50	1,810
May 8			1900	7.04	2,280	0900	10.00	5,900
0300	2.60	71	2400	6.40	1,730	1000	12.55	10,800
0700	2.94	129	*May 11*			1100	15.10	17,200
1300	4.12	488	0800	5.66	1,240	1300	18.13	26,900
2400	3.78	353	1330	7.90	3,100	1600	15.49	18,400
May 9			2400	6.10	1,520	1900	12.33	10,200
0700	3.62	297	*May 12*			2400	9.24	4,680
1100	4.77	765	1200	5.16	965	*May 14*		
1600	5.91	1,390	2400	4.53	672	0230	10.26	6,380
2400	5.19	990	*May 13*			0600	8.81	4,120
May 10			0300	4.43	628	1200	7.29	2,500
1100	4.74	765	0400	4.45	628	2400	5.70	1,270

(33) 7–3405. COSSATOT RIVER NEAR DeQUEEN, ARK.

Location.—Lat 34°02′45″, long 94°12′42″, in NE¼NE¼ sec. 29, T. 8 S., R. 30 W., on downstream side of pier of bridge on U.S. Highway 71, just downstream from Hale Creek, 7 miles east of DeQueen, and at mile 33.5.

Drainage area.—361 sq mi.

Gage-height record.—Water-stage recorder graph, except May 14, 17–31 when graph was reconstructed on basis of engineer's and observer's wire-weight gage readings, and May 15, 16. Datum of gage is 335.48 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 65,000 cfs and by contracted-opening measurement at 122,000 cfs. Discharge for May 15, 16 estimated on basis of records for stations on nearby streams.

Maximums.—May 1968: Discharge, 122,000 cfs 2300 hours May 13 (gage height, 22.60 ft).

1938 to April 1968: Discharge, 62,000 cfs May 6, 1961 (gage height, 20.70 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	1,080	9	5,430	17	8,820	25	809
2	760	10	6,470	18	5,900	26	2,520
3	610	11	8,060	19	2,510	27	1,440
4	558	12	6,680	20	1,500	28	960
5	435	13	38,200	21	1,080	29	800
6	312	14	35,200	22	825	30	628
7	279	15	3,880	23	662	31	505
8	4,440	16	2,120	24	558		

Monthly mean discharge	cubic feet per second	4,646
Runoff	inches	14.84
Runoff	acre-feet	285,700

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 9*—Cont.			*May 13*—Cont.		
2400	4.83	268	2400	14.04	10,000	1400	16.50	19,400
May 7			*May 10*			1500	17.81	28,200
1800	4.66	227	0700	12.39	7,280	1600	19.31	47,600
2000	4.78	255	1500	11.10	4,900	1800	21.27	85,000
2400	5.93	628	2400	12.04	6,160	2300	22.60	122,000
May 8			*May 11*			2400	22.50	118,000
0500	7.49	1,440	0700	12.73	7,280	*May 14*		
0700	7.98	1,760	1300	12.42	6,800	0200	21.60	92,000
1000	8.22	1,900	1800	13.70	9,300	0600	19.10	44,400
1200	10.57	4,280	2400	14.71	12,000	1200	16.95	22,000
1800	13.63	9,060	*May 12*			1800	14.85	12,300
2400	11.96	6,160	0800	12.92	7,620	2400	12.98	7,800
May 9			1600	10.97	4,760	*May 15*		
0600	10.31	3,920	2400	9.85	3,320	0600	11.06	4,900
1300	9.68	3,220	*May 13*			1200	9.64	3,120
1700	11.62	5,600	0500	9.41	2,920	1800	9.00	2,520
2300	14.08	10,200	1000	11.95	6,160	2400	8.48	2,120
			1300	15.19	13,700			

(34) 7–3405.3 MILL SLOUGH TRIBUTARY NEAR LOCKESBURG, ARK.

[Crest-stage station]

Location.—Lat 33°58′04″, long 94°11′25″, on south line of SW¼NW¼ sec. 22, T. 9 S., R. 30 W., on left bank 15 ft upstream from culvert on State Highway 24, 1.3 miles west of Lockesburg.

Drainage area.—0.64 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 36 cfs and by flow-through-culvert measurements at 177 cfs, 385 cfs, and 552 cfs.

Maximums.—May 1968: Discharge, 552 cfs May 17 (gage height, 8.44 ft, from gage; 8.57 ft, from floodmark).

1963 to April 1968: Discharge, 285 cfs Apr. 23, 1964 (gage height, 7.27 ft).

(35) 7–3410. SALINE RIVER NEAR DIERKS, ARK.

Location.—Lat 34°05′45″, long 94°05′04″, in NW¼SW¼ sec. 3, T. 8 S., R. 29 W., near left bank on downstream side of pier of bridge on U.S. Highway 70, 3½ miles upstream from Holly Creek, 4 miles southwest of Dierks, and at mile 50.7.

Drainage area.—124 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 353.09 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 59,200 cfs 1600 hours May 13 (gage height, 22.95 ft).

1920 to April 1968: Discharge, 52,000 cfs May 6, 1961 (gage height, 22.50 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	306	9	2,860	17	4,320	25	373
2	241	10	2,720	18	2,010	26	1,210
3	199	11	2,610	19	998	27	432
4	191	12	1,380	20	618	28	300
5	156	13	23,700	21	395	29	218
6	134	14	7,270	22	300	30	168
7	336	15	1,620	23	238	31	137
8	2,650	16	1,430	24	199		

Monthly mean discharge	cubic feet per second	1,926
Runoff	inches	17.91
Runoff	acre-feet	118,500

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 10*			*May 14*—Cont.		
2400	5.92	122	0800	9.18	1,660	1200	12.11	4,510
May 7			1200	10.00	2,370	2400	9.85	2,240
1600	5.89	117	1700	12.05	4,400	*May 15*		
1800	6.18	172	2400	10.48	2,840	1200	9.18	1,660
1900	6.90	342	*May 11*			2400	8.49	1,180
2000	7.47	552	0800	9.60	2,010	*May 16*		
2100	7.43	538	1200	10.52	2,840	0600	9.04	1,540
2200	8.80	1,340	1500	10.99	3,340	1800	8.09	975
2300	9.60	2,010	2400	9.64	2,060	2400	10.40	2,740
2400	9.59	2,010	*May 12*			*May 17*		
May 8			1200	8.81	1,360	0100	11.35	3,740
0500	9.24	1,700	2400	8.19	910	0600	13.24	5,790
0800	10.00	2,370	*May 13*			1000	12.50	4,950
1230	12.20	4,620	0200	8.17	880	1400	12.21	4,620
1900	9.80	2,280	0500	9.10	1,580	1800	11.42	3,740
2400	9.23	1,700	0600	11.58	3,960	2100	10.78	3,140
May 9			0700	15.10	8,460	2400	10.53	2,840
0700	8.78	1,340	1000	17.83	14,200	*May 18*		
1200	12.40	4,840	1200	19.34	19,400	0500	10.11	2,460
1330	12.89	5,380	1600	22.95	59,200	1200	9.42	1,830
1800	10.75	3,140	2400	20.00	22,900	2400	8.65	1,270
2400	9.65	2,060	*May 14*			*May 19*		
			0600	15.25	8,620	1200	8.09	975
						2400	7.48	715

(36) 7–3411. ROCK CREEK NEAR DIERKS, ARK.

[Crest-stage station]

Location.—Lat 34°06′46″, long 94°02′25″, in SW¼NE¼ sec. 36, T. 7 S., R. 29 W., on left bank 130 ft upstream from bridge on U.S. Highway 70, 0.8 mile upstream from mouth, and 1.4 miles southwest of Dierks.

Drainage area.—9.48 sq mi.

Gage-height Record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,200 cfs and by contracted-opening and flow-over-road measurement at 9,390 cfs.

Maximums.—May 1968: Discharge, 3,050 cfs May 13 (gage height, 8.58 ft).

1961 to April 1968: Discharge, 9,390 cfs July 23, 1961 (gage height, 12.6 ft, from floodmark).

(37) 7–3412. SALINE RIVER NEAR LOCKESBURG, ARK.

Location.—Lat 33°57′43″, long 94°03′40″, in NW¼SE¼ sec. 23, T. 9 S., R. 29 W., near right bank on downstream side of bridge on State Highway 24, 2 miles downstream from Brushy Creek, 6 miles east of Lockesburg, and at mile 30.

Drainage area.—260 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 300.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 23,000 cfs and by contracted-opening measurement at 64,700 cfs.

Maximums.—May 1968: Discharge, 64,700 cfs 0400 hours May 14 (gage height 20.86 ft).

1963 to April 1968: Discharge, 15,600 cfs May 6, 1967 (gage height, 16.97 ft).

1961 to April 1968: Discharge, not determined May 6 or 7, 1961 (gage height, 25.7 ft, from floodmarks).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	708	9	4,690	17	10,500	25	352
2	477	10	5,190	18	8,090	26	4,010
3	364	11	7,190	19	3,000	27	2,560
4	312	12	4,930	20	1,070	28	660
5	260	13	8,590	21	676	29	477
6	194	14	33,400	22	522	30	320
7	168	15	6,240	23	432	31	244
8	2,840	16	3,420	24	350		

Monthly mean discharge	cubic feet per second	3,621
Runoff	inches	16.05
Runoff	acre-feet	222,600

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 12*			*May 16*—Cont.		
2400	4.33	174	1200	15.32	5,190	1200	13.46	2,700
May 7			1800	15.02	4,470	1800	13.68	2,840
1200	4.23	159	2400	14.29	3,390	2100	15.28	5,190
1900	4.20	155	*May 13*			2300	15.27	5,060
2200	4.57	201	0530	13.37	2,630	2400	15.35	5,340
2400	4.68	220	0900	14.50	3,640	*May 17*		
May 8			1000	14.50	3,640	1200	16.43	11,600
0100	6.10	432	1500	15.20	4,930	1800	16.74	13,900
0200	8.19	759	1900	15.74	6,940	2400	16.53	12,400
0300	10.00	1,120	2400	19.48	45,000	*May 18*		
1100	13.78	2,920	*May 14*			1200	15.92	7,790
2400	15.17	4,810	0100	20.15	54,800	2400	15.36	5,340
May 9			0400	20.86	64,700	*May 19*		
0600	15.30	5,190	0700	20.00	52,000	0600	14.93	4,370
1200	15.17	4,810	0900	19.25	40,800	1200	14.11	3,180
2000	14.72	3,930	1200	18.10	26,900	1800	13.03	2,380
2400	14.80	4,090	1800	16.90	15,100	2400	11.80	1,750
May 10			2400	16.30	10,500	*May 20*		
1500	15.46	5,660	*May 15*			0900	10.00	1,120
2200	15.44	5,660	1200	15.61	6,240	1600	9.10	920
2400	15.52	5,840	2400	14.74	3,930	2400	8.51	810
May 11			*May 16*					
1000	15.95	8,090	0600	13.89	3,000			
2400	15.59	6,240						

(38) 7-3413. MILLWOOD RESERVOIR NEAR ASHDOWN, ARK.

Location.—Lat 33°41'20", long 93°58'18", in NW¼ sec. 26, T. 12 S., R. 28 W., at Millwood Dam on Little River, 9.2 miles east of Ashdown, 9.6 miles upstream from Hudson Creek, and at mile 16.0.

Drainage area.—4,144 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Maximums.—May 1968: Contents, 1,457,000 acre-ft 2100 hours May 22 (elevation, 282.49 ft). Computed rate of inflow, 120,000 cfs May 16.

1966 to April 1968: Contents, 292,800 acre-ft Apr. 7, 1968 (elevation, 261.94 ft).

Remarks.—Reservoir is formed by earth-fill dam. Regulated storage began Aug. 16, 1966. Capacity, 1,854,900 acre-ft at top of flood-control pool and 145,900 acre-ft at top of conservation pool. Reservoir is used principally for flood control, future water supply, water-quality control, and recreation.

Cooperation.—Records furnished by Corps of Engineers.

Capacity.—

Elevation (feet)	*Contents (thousands of acre-ft)*	*Elevation (feet)*	*Contents (thousands of acre-ft)*
257.0	145.9	272.0	745.2
260.0	229.0	275.0	921.2
263.0	331.0	278.0	1,119.0
266.0	451.3	281.0	1,338.8
269.0	589.2	283.0	1,498.9

Contents, in thousands of acre-feet, at 2400 hours of indicated day, May 1968

Day	Contents	Day	Contents	Day	Contents	Day	Contents
1	226.6	9	162.7	17	924.3	25	1,359.0
2	216.8	10	207.3	18	1,112.0	26	1,301.3
3	206.4	11	254.4	19	1,274.2	27	1,254.8
4	189.5	12	282.5	20	1,378.6	28	1,196.9
5	174.9	13	308.4	21	1,436.7	29	1,137.8
6	163.5	14	386.9	22	1,455.4	30	1,073.6
7	155.8	15	536.6	23	1,430.3	31	1,002.9
8	150.8	16	724.4	24	1.384.1		

Change in contents.....thousands of acre-feet +774.8

(39) 7-3415. RED RIVER AT FULTON, ARK.

Location.—Lat 33°37', long 93°49', in NE¼ sec. 20, T. 13 S., R. 26 W., near left bank on downstream side of bridge on U.S. Highway 67 at Fulton, 0.3 mile downstream from Missouri Pacific Railroad Co. bridge, 2½ miles downstream from Little River, and at mile 463.0.

Drainage area.—52,380 sq mi, of which 5,936 sq mi is probably noncontributing.

Gage-height record.—Wire-weight gage read twice daily. Datum of gage is 224.94 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Discharge taken from loop curves.

Maximums.—May 1968: Discharge, 122,000 cfs May 21 (gage height, 24.40 ft); gage height, 24.48 ft 1100 hours May 21.

1927 to April 1968: Discharge, 338,000 cfs Feb. 24, 1938 (gage height, 36.45 ft); gage height, 37.4 ft Apr. 2, 1945.

Remarks.—Floodflow affected since Oct. 31, 1943, by Lake Texoma, 263 miles upstream, and since Aug. 16, 1966, by Millwood Reservoir on Little River.
Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	35,000	9	18,000	17	92,000	25	91,000
2	33,000	10	40,000	18	104,000	26	100,000
3	31,000	11	53,000	19	110,000	27	106,000
4	28,000	12	55,000	20	118,000	28	108,000
5	24,000	13	56,000	21	120,000	29	101,000
6	20,000	14	64,000	22	107,000	30	94,000
7	18,000	15	82,000	23	97,000	31	90,000
8	17,000	16	91,000	24	97,000		

Monthly mean discharge ..... cubic feet per second 70,970
Runoff ..... acre-feet 4,364,000

(40) 7–3417. CANEY CREEK NEAR HOPE, ARK.

[Crest-stage station]

Location.—Lat 33°41′34″, long 93°38′12″, in SE¼NE¼ sec. 24, T. 12 S., R. 25 W., on right bank 115 ft upstream from bridge on State Highway 4, 0.1 mile southeast of junction with State Highway 73, 0.3 mile downstream from small tributary, and 3.1 miles northwest of Hope.
Drainage area.—12.9 sq mi.
Gage-height record.—Crest stages only.
Discharge record.—Stage-discharge relation defined by current-meter measurements below 910 cfs and by contracted-opening measurement at 5,410 cfs.
Maximums.—May 1968: Discharge, 4,050 cfs May 10 (gage height, 12.24 ft).
1963 to April 1968: Discharge, 5,410 cfs Apr. 30, 1966 (gage height, 12.80 ft).

(41) 7–3558. LEWIS CREEK TRIBUTARY NEAR MENA, ARK.

[Crest-stage station]

Location.—Lat 34°37′15″, long 94°12′15″, on east line NE¼SW¼ sec. 33, T. 1 S., R. 30 W., on right bank 22 ft upstream from culvert on U.S. Highway 71, 0.3 mile upstream from mouth, 2.5 miles north of junction with State Highway 88, and 3.1 miles northeast of Mena.
Drainage area.—0.64 sq mi.
Gage-height record.—Crest stages only.
Discharge record.—Stage-discharge relation defined by current-meter measurement at 42 cfs and by flow-through-culvert measurements at 124 cfs, 177 cfs, and 235 cfs.
Maximums.—May 1968: Discharge, 235 cfs May 13 (gage height, 3.94 ft).
1961 to April 1968: Discharge, 225 cfs July 6, 1967 (gage height, 3.86 ft).

(42) 7–3559. BIG FORK TRIBUTARY AT BIG FORK, ARK.

[Crest-stage station]

Location.—Lat 34°28′25″, long 93°57′40″, in SE¼NW¼ sec. 23, T. 3 S., R. 28 W., on right bank 7 ft upstream from culvert on State Highway 8, 0.2 mile upstream from mouth, and 0.9 mile southeast of Big Fork.
Drainage area.—0.16 sq mi.
Gage-height record.—Crest stages only.
Discharge record.—Stage-discharge relation defined by current-meter measurements below 19 cfs and by flow-through-culvert measurements at 29.2 cfs, 44.4 cfs, and 65.9 cfs.

Maximums.—May 1968: Discharge, 66 cfs May 13 (gage height, 8.21 ft).
1964 to April 1968: Discharge, 44 cfs Apr. 25, 1966 (gage height, 7.45 ft).

(43) 7–3560. OUACHITA RIVER NEAR MOUNT IDA, ARK.

Location.—Lat 34°36′36″, long 93°41′50″, in SE¼SW¼ sec. 32, T. 1 S., R. 25 W., on right bank 350 ft upstream from bridge on U.S. Highway 270, 3.1 miles upstream from Fiddler's Creek, 5.2 miles northwest of Mount Ida, and at mile 553.4.
Drainage area.—410 sq mi.
Gage-height record.—Water-stage recorder graph. Datum of gage is 655.14 ft above mean sea level, datum of 1929.
Discharge record.—Stage-discharge relation defined by current-meter measurements.
Maximums.—May 1968: Discharge, 40,100 cfs 0800 hours May 14 (gage height, 28.40 ft).
1941 to April 1968: Discharge, 57,300 cfs May 21, 1960 (gage height, 32.18 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	1,090	9	2,020	17	4,890	25	527
2	845	10	3,280	18	4,590	26	3,120
3	685	11	6,490	19	2,370	27	1,700
4	762	12	5,890	20	1,520	28	1,700
5	660	13	9,880	21	1,120	29	1,230
6	492	14	33,000	22	900	30	818
7	404	15	7,360	23	762	31	660
8	699	16	4,470	24	612		

Monthly mean discharge	cubic feet per second	3,373
Runoff	inches	9.49
Runoff	acre-feet	207,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 11*—Cont.			*May 14*—Cont.		
2400	3.12	385	0800	28.40	40,100	1200	27.93	38,600
May 8			2400	11.97	7,450	1700	25.48	31,800
0600	3.18	408	*May 12*			2000	23.20	26,400
1600	3.60	590	0500	12.12	7,450	2400	19.66	19,000
2100	4.62	1,120	0800	11.82	7,230	*May 15*		
2400	6.50	2,300	1600	9.55	4,990	0200	17.77	15,900
May 9			2400	8.10	3,540	0400	15.56	12,400
0100	6.69	2,440	*May 13*			0600	13.50	9,280
0600	6.08	2,020	0600	7.56	3,130	0900	11.12	6,490
1100	6.57	2,370	0900	7.94	3,370	1300	9.63	4,990
1800	5.77	1,820	1100	9.40	4,790	1800	8.66	4,090
2400	6.75	2,510	1300	11.40	6,790	2300	8.05	3,450
May 10			1500	13.80	9,700	2400	8.40	3,810
0800	7.85	3,290	1700	16.28	13,500	*May 16*		
1500	7.45	2,970	1900	19.05	17,800	0600	10.47	5,890
2400	9.13	4,490	2100	21.60	22,700	1200	8.93	4,290
May 11			2400	23.88	28,000	1700	8.39	3,810
0900	10.80	6,190	*May 14*			2100	8.62	3,990
1400	11.83	7,260	0300	26.50	34,400	2400	8.47	3,900
1800	11.68	7,120	0800	28.40	40,100			

(44) 7–3565. SOUTH FORK OUACHITA RIVER AT MOUNT IDA, ARK.

Location.—Lat 34°33′16″, long 93°38′16″, in NE¼NE¼ sec. 23, T. 2 S., R. 25 W., near right bank on downstream side of pier of bridge on U.S. Highway 270 at Mount Ida, 3.4 miles upstream from Williams Creek, and at mile 22.5.

Drainage area.—64 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 612.05 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 20,000 cfs 1630 hours May 13 (gage height, 15.00 ft).

1949 to April 1968: Discharge, 17,900 cfs May 20, 1960 (gage height, 13.69 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	116	9	888	17	891	25	304
2	92	10	806	18	513	26	1,370
3	87	11	1,480	19	276	27	323
4	89	12	587	20	179	28	347
5	63	13	7,000	21	133	29	187
6	50	14	3,370	22	110	30	112
7	44	15	471	23	89	31	74
8	340	16	719	24	73		

Monthly mean discharge	cubic feet per second	683
Runoff	inches	12.31
Runoff	acre-feet	42,020

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 12			*May 13*—Cont.			*May 14*—Cont.		
2400	3.19	347	1500	13.60	15,400	0600	9.91	6,460
May 13			1630	15.00	20,000	0800	8.82	4,850
0400	3.10	316	1800	14.00	16,600	1200	6.43	2,210
0600	3.70	532	2000	12.47	12,100	1800	4.88	1,140
0700	4.80	1,080	2200	10.28	7,120	2400	4.10	704
0900	6.63	2,390	2330	9.40	5,710	*May 15*		
1100	8.58	4,890	2400	9.50	5,860	0600	3.73	553
1200	10.16	6,950	*May 14*			1200	3.52	464
1300	11.91	10,400	0200	10.50	7,460	2400	3.18	343
1400	12.65	12,400	0400	9.75	6,310			

(45) 7–3567. BARNES BRANCH NEAR MOUNT IDA, ARK.

[Crest-stage station]

Location.—Lat 34°33′57″, long 93°37′03″, in SE¼SE¼ sec. 13, T. 2 S., R. 25 W., on right bank 35 ft upstream from culvert on State Highway 27, 0.3 mile upstream from mouth, and 1.1 miles northeast of Mount Ida.

Drainage area.—1.85 sq mi.

Gage-height record.—Crest stages only. Datum of gage is 602.86 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 61 cfs and by flow-through-culvert measurements at 654 cfs and 675 cfs.

Maximums.—May 1968: Discharge, 760 cfs May 13 (gage height, 12.22 ft).

1961 to April 1968: Discharge, 675 cfs Sept. 22, 1965 (gage height, 12.01 ft).

(46) 7–3575. LAKE OUACHITA NEAR HOT SPRINGS, ARK.

Location.—Lat 34°34′20″, long 93°11′50″, in NE¼ sec. 12, T. 2 S., R. 21 W., at Blakely Mountain Dam on Ouachita River, 3.0 miles upstream from Glazypeau

Creek, 3.8 miles downstream from Mill Creek, 10 miles northwest of Hot Springs, and at mile 487.0.

Drainage area.—1,105 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Maximums.—May 1968: Contents, 2,609,300 acre-ft 0500-1300 hours May 19 (elevation, 588.63 ft). Computed rate of inflow, 136,000 cfs 1600 hours May 13.

1952 to April 1968: Contents, 2,402,100 acre-ft May 1, 1957 (elevation 584.01 ft).

Remarks.—Reservoir is formed by earth-fill dam. Regulated storage began July 7, 1952. Capacity, 2,768,400 acre-ft at crest of spillway (elevation, 592.0 ft), 2,151,100 acre-ft at top of designated power pool (elevation, 578.0 ft), and 864,900 acre-ft at top of conservation pool and bottom of designated power pool (elevation, 535.0 ft). Reservoir is used principally for flood control, power development, and recreation.

Cooperation.—Records furnished by Corps of Engineers.

Capacity.—

Elevation (feet)	*Contents (thousands of acre-ft)*	*Elevation (feet)*	*Contents (thousands of acre-ft)*
577.0	2,111.3	586.0	2,489.8
580.0	2,232.3	589.0	2,626.4
583.0	2,358.5		

Contents, in thousands of acre-feet, at 2400 hours of indicated day, May 1968

Day	Contents	Day	Contents	Day	Contents	Day	Contents
1	2,139.5	9	2,127.6	17	2,575.6	25	2,537.0
2	2,132.4	10	2,147.1	18	2,601.5	26	2,542.0
3	2,127.2	11	2,193.0	19	2,609.3	27	2,542.0
4	2,125.6	12	2,230.2	20	2,603.8	28	2,533.8
5	2,123.6	13	2,261.7	21	2,596.4	29	2,522.1
6	2,122.0	14	2,448.6	22	2,582.0	30	2,508.2
7	2,121.6	15	2,540.1	23	2,567.9	31	2,492.9
8	2,126.0	16	2,559.2	24	2,552.9		

Change in contents ..... thousands of acre-feet +340.3

(47) 7-3575.01 OUACHITA RIVER AT BLAKELY MOUNTAIN DAM NEAR HOT SPRINGS, ARK.

Location.—Lat 34°34′17″, long 93°11′23″, in outlet of power tunnel at Blakely Mountain Dam, 2.3 miles upstream from Glazypeau Creek, 10 miles northwest of Hot Springs, and at mile 486.9.

Drainage area.—1,105 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929.

Discharge record.—Discharge computed from flow meter.

Maximums.—May 1968: Daily discharge, 9,350 cfs May 31.

1950 to April 1968: Discharge, 9,400 cfs May 19, 1953.

Remarks.—Flow completely regulated since July 1952 by Lake Ouachita.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	6,190	9	2,200	17	3,940	25	8,500
2	5,410	10	2,180	18	3,630	26	4,690
3	3,580	11	955	19	6,290	27	7,860
4	2,340	12	3,030	20	6,370	28	9,320
5	788	13	1,110	21	8,310	29	9,180
6	801	14	20	22	9,320	30	9,340
7	426	15	3,150	23	9,330	31	9,350
8	2,120	16	5,900	24	9,330		

Monthly mean discharge	cubic feet per second	4,999
Runoff	acre-feet	307,400

(48) 7–3577. GLAZYPEAU CREEK AT MOUNTAIN VALLEY, ARK.

[Recording crest-stage station]

Location.—Lat 34°37′30″, long 93°03′09″, in SE¼SE¼ sec. 20, T. 1 S., R. 19 W., crest-stage gage on right wingwall 2 ft downstream from bridge and recording gage on right bank 12 ft downstream from bridge on State Highway 7, just downstream from small tributary, 0.4 mile upstream from small tributary, and 0.5 mile southeast of Mountain Valley.

Drainage area.—4.3 sq mi.

Gage-height record.—Digital-recorder tape punched at 5-minute intervals and crest stages.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 670 cfs and by contracted-opening measurements at 2,110 cfs and 2,120 cfs. (Flood of Jan. 29, 1969.)

Maximums.—May 1968: Discharge, 1,250 cfs 0730 hours May 13 (gage height, 11.44 ft, from digital-recorder tape, 11.85 ft, from crest-stage gage).

1961 to April 1968: Discharge, 2,110 cfs July 16, 1963 (gage height, 11.85 ft, from recorder graph, 12.41 ft, from crest-stage gage).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	6.8	9	52	17	89	25	39
2	5.5	10	86	18	52	26	60
3	4.8	11	59	19	36	27	33
4	4.1	12	24	20	30	28	28
5	3.4	13	486	21	24	29	20
6	3.0	14	178	22	22	30	17
7	3.2	15	50	23	18	31	16
8	4.8	16	84	24	15		

Monthly mean discharge	cubic feet per second	50.1
Runoff	inches	13.45
Runoff	acre-feet	3,080

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 11			*May 13*—Cont.			*May 14*		
2400	6.92	36	0800	11.39	1,200	2300	8.38	170
May 12			0900	10.93	801	2400	10.16	476
1200	6.64	22	1000	10.63	648	0100	10.71	670
2400	6.48	15	1100	10.84	744	0300	9.73	380
May 13			1200	11.17	993	0600	8.64	202
0400	6.45	14	1230	11.24	1,060	0900	8.10	136
0500	6.47	15	1300	11.13	957	1200	7.80	105
0600	8.78	223	1600	10.77	695	1600	7.54	81
0700	11.12	948	1800	10.10	462	2000	7.36	67
0730	11.44	1,250	2000	9.28	297	2400	7.24	58

(49) 7–3585. LAKE HAMILTON NEAR HOT SPRINGS, ARK.

Location.—Lat 34°26′30″, long 93°01′30″, in sec. 27, T. 3 S., R. 19 W., at Carpenter Dam on Ouachita River, 1½ miles downstream from Hot Springs Creek, 4½ miles southeast of Hot Springs, and at mile 467.9.

Drainage area.—1,441 sq mi.

Gage-height record.—Automatic Selsyn repeater gage. Datum of gage is at mean sea level.

Maximums.—May 1968: Contents, 206,648 acre-ft 1600 hours May 13 (elevation, 402.12 ft).

1930 to April 1968: Contents, 208,100 acre-ft Mar. 31, 1945 (elevation, 402.28 ft).

Remarks.—Reservoir is formed by concrete-gravity dam. Regulated storage began Dec. 17, 1930. Capacity, 190,100 acre-ft at top of tainter gates (elevation, 400 ft), and 70,560 acre-ft at crest of spillway (elevation, 375 ft). Contents below crest of spillway represents dead storage. Reservoir is used principally for power development.

Cooperation.—Records furnished by Arkansas Power and Light Co.

Elevation, in feet, and contents, in acre-feet, at 2400 hours of indicated day, May 1968

Day	Elevation	Contents	Day	Elevation	Contents
1	397.81	175,344	16	397.99	176,496
2	398.22	178,012	17	398.71	181,246
3	398.21	177,946	18	398.71	181,246
4	398.11	177,286	19	398.54	180,124
5	398.08	177,088	20	398.70	181,180
6	398.09	177,154	21	398.76	181,576
7	398.10	177,220	22	398.67	180,982
8	398.02	176,692	23	398.55	180,190
9	398.55	180,190	24	398.60	180,520
10	399.17	184,343	25	398.98	183,028
11	399.31	185,318	26	398.33	178,738
12	398.82	181,972	27	398.55	180,190
13	400.02	190,269	28	398.54	180,124
14	398.59	180,454	29	398.46	179,596
15	397.78	175,152	30	398.45	179,530
			31	398.34	178,804

(50) 7–3590. LAKE CATHERINE AT JONES MILL, ARK.

*Location.*Lat 34°25′35″, long 92°53′40″, in SW¼NW¼ sec. 36, T. 3 S., R. 18 W., at Remmel Dam on Ouachita River at Jones Mill, and at mile 455.9.

Drainage area.—1,516 sq mi.

Gage-height record.—Meriam remote indicator gage. Datum of gage is at mean sea level.

Maximums.—May 1968: Contents, 48,750 acre-ft 2000 hours May 13 (elevation, 311.30 ft).

1924 to April 1968: Contents, 59,160 acre-ft Apr. 21, 1927 (elevation, 315.75 ft).

Remarks.—Reservoir is formed by concrete-gravity dam. Regulated storage began Oct. 11, 1924. Capacity, 35,250 acre-ft at top of tainter gates (elevation, 305 ft), and 13,950 acre-ft at crest of spillway (elevation, 290 ft). Contents below crest of spillway represents dead storage. Reservoir is used principally for power development.

Cooperation.—Records furnished by Arkansas Power and Light Co.

Elevation, in feet, and contents, in acre-feet, at 2400 hours of indicated day, May 1968

Day	Elevation	Contents	Day	Elevation	Contents
1	302.78	31,130	16	304.40	34,104
2	304.50	34,295	17	303.95	33,259
3	304.23	33,779	18	303.95	33,249
4	304.65	34,582	19	303.52	32,464
5	304.28	33,875	20	303.90	33,157
6	304.15	33,627	21	304.38	34,066
7	304.18	33,684	22	304.08	33,493
8	304.48	34,257	23	304.03	33,397
9	304.36	34,028	24	303.97	33,285
10	305.60	36,432	25	304.20	33,722
11	304.54	34,371	26	303.91	33,175
12	304.12	33,569	27	304.50	34,295
13	310.60	47,140	28	304.30	33,913
14	305.09	35,427	29	304.42	34,142
15	304.20	33,722	30	304.21	33,741
			31	304.35	34,009

(51) 7–3595. OUACHITA RIVER NEAR MALVERN, ARK.

Location.—Lat 34°23′10″, long 92°50′20″, in NE¼NW¼ sec. 16, T. 4 S., R. 17 W., near right bank on downstream side of pier of bridge on State Highway 84, 2 miles northwest of Malvern, 5.8 miles downstream from Remmel Dam, and at mile 450.1.

Drainage area.—1,562 sq mi.

Gage-height record.—Digital-recorder tape punched at 15-minute intervals. Datum of gage is 228.05 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 120,000 cfs and extended above by logarithmic plotting.

Maximums.—May 1968: Discharge, 110,000 cfs 0145 hours May 14 (gage height, 26.02 ft).

1903-05, 1922 to April 1968: Discharge, 140,000 cfs May 15, 1923 (gage height, 30.3 ft).

Remarks.—Floodflow slightly affected by Lake Catherine since 1925 and by Lake Hamilton since 1932, materially affected by Lake Ouachita since July 1952.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	6,340	9	3,840	17	12,400	25	8,020
2	3,470	10	11,400	18	12,000	26	9,680
3	3,770	11	13,600	19	9,840	27	7,600
4	3,220	12	9,530	20	7,180	28	9,840
5	1,540	13	43,700	21	7,880	29	9,220
6	1,090	14	52,400	22	9,680	30	9,220
7	559	15	12,000	23	9,520	31	9,070
8	3,200	16	9,220	24	8,920		

Monthly mean discharge	cubic feet per second	10,290
Runoff	acre-feet	632,600

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 12			*May 13*—Cont.			*May 14*—Cont.		
2400	7.67	6,910	2000	25.95	108,000	2000	13.98	20,000
May 13			2200	25.92	107,000	2400	13.57	18,800
0200	7.54	6,650	2400	25.79	107,000	*May 15*		
0600	7.49	6,650	*May 14*			0200	13.35	18,200
0800	8.36	7,880	0145	26.02	110,000	0600	12.29	15,300
1000	11.26	12,800	0200	25.96	109,000	1000	10.91	12,400
1200	14.68	21,800	0600	24.29	87,400	1400	10.21	11,000
1400	17.46	32,900	1000	20.03	47,800	1800	9.07	9,070
1600	22.06	63,100	1400	16.56	29,200	2200	7.66	7,040
1800	25.27	98,400	1600	14.97	23,200	2400	7.52	6,910

(52) 7–3595.2 OUACHITA RIVER TRIBUTARY NEAR MALVERN, ARK.

[Crest-stage station]

Location.—Lat 34°22′01″, long 92°52′01″, in SW¼NE¼ sec. 19, T. 4 S., R. 17 W., on left bank 40 ft upstream from culvert on State Highway 84, 0.7 mile upstream from mouth, and 3.2 miles west of Malvern.

Drainage area.—3.0 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 260 cfs and by flow-through-culvert measurements at 482 cfs and 1,200 cfs. (Flood of Jan. 29, 1969.)

Maximums.—May 1968: Discharge, 650 cfs May 13 (gage height, 8.26 ft).
1962 to April 1968: Discharge, 555 cfs Apr. 23, 1964 (gage height, 7.75 ft).

(53) 7–3597. CADDO RIVER AT GLENWOOD, ARK.

Location.—Lat 34°19′19″, long 93°32′28″, in SE¼NE¼ sec. 10, T. 5 S., R. 24 W., on downstream side of bridge on U.S. Highway 70, 700 ft downstream from Sweetwater Creek, and at mile 52.1.

Drainage area.—192 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 514.41 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 84,000 cfs.

Maximums.—May 1968: Discharge, 88,000 cfs 1600 hours May 13 (gage height, 31.40 ft).
1939 to April 1968: Discharge, 65,000 cfs Mar. 30, 1945 (gage height, 27.0 ft); gage height, 27.95 ft May 6, 1961.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	355	9	3,470	17	3,360	25	350
2	270	10	5,360	18	2,980	26	1,100
3	234	11	5,040	19	1,860	27	532
4	222	12	2,930	20	1,200	28	607
5	181	13	38,400	21	810	29	479
6	160	14	11,400	22	616	30	370
7	145	15	2,960	23	486	31	320
8	799	16	1,920	24	388		

Monthly mean discharge	cubic feet per second	2,881
Runoff	inches	17.30
Runoff	acre-feet	177,100

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 11*			*May 14*—Cont.		
2400	6.96	148	0200	12.50	6,960	1000	15.40	12,400
May 7			0800	10.80	4,320	1200	13.85	9,180
1800	6.92	136	1300	10.52	3,880	1600	12.02	6,160
2400	7.04	172	1800	11.13	4,770	2400	10.55	4,020
May 8			2100	11.28	5,070	*May 15*		
0800	7.39	315	2400	10.87	4,470	0800	9.95	3,180
1200	8.00	770	*May 12*			1600	9.58	2,640
1700	8.69	1,530	0600	10.13	3,320	2400	9.24	2,130
2400	8.34	1,130	1200	9.72	2,770	*May 16*		
May 9			2400	9.14	2,010	0800	9.17	2,130
0600	8.12	892	*May 13*			2300	8.71	1,530
0800	8.26	1,050	0400	9.03	1,890	2400	8.85	1,650
1000	9.27	2,190	0600	9.60	2,640	*May 17*		
1200	10.00	3,180	0800	15.90	13,500	0800	10.08	3,320
1400	11.46	5,370	1000	23.90	41,400	1200	10.52	3,880
1700	12.93	7,620	1200	27.10	57,200	1500	10.60	4,020
2000	11.65	5,520	1400	29.20	69,600	2100	10.40	3,740
2400	10.46	3,880	1600	31.40	88,000	2400	10.36	3,740
May 10			1800	30.20	77,000	*May 18*		
0600	9.73	2,770	2000	26.90	56,200	0800	10.02	3,180
1000	9.52	2,510	2200	23.40	39,100	1600	9.68	2,770
1200	9.60	2,640	2400	20.00	25,500	2400	9.32	2,250
1400	10.20	3,460	*May 14*			*May 19*		
1600	11.80	5,840	0200	18.40	20,200	1200	8.97	1,890
1800	13.90	9,360	0600	17.07	16,500	2400	8.62	1,420
2000	15.12	11,700	0700	17.15	16,800			
2400	13.72	9,000						

(54) 7–3597.5 LITTLE SUGARLOAF CREEK NEAR BONNERDALE, ARK.

[Crest-stage station]

Location.—Lat 34°21′40″, long 93°27′30″, in NW¼SW¼ sec. 27, T. 4 S., R. 23 W., on right bank 33 ft upstream from bridge on U.S. Highway 70, 3.2 miles upstream from mouth, and 4.7 miles southwest of Bonnerdale.

Drainage area.—2.34 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 850 cfs and by flow-through-culvert measurement at 2,540 cfs.

Maximums.—May 1968: Discharge, 2,540 cfs May 13 (gage height, 13.11 ft).

1962 to April 1968: Discharge, 1,550 cfs Aug. 13, 1966 (gage height, 11.11 ft).

(55) 7–3598. CADDO RIVER NEAR ALPINE, ARK.

Location.—Lat 34°16′00″, long 93°21′45″, in SW¼SE¼ sec. 28, T. 5 S., R. 22 W., at Runyan Bridge on gravel road between Alpine and Bismarck, 7.1 miles downstream from Fork Creek, 11.4 miles downstream from Caney Creek, and at mile 33.8.

Drainage area.—312 sq mi.

Gage-height record.—Water-stage recorder graph, except May 16–23. Datum of gage is 394.85 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 38,000 cfs. Discharge for May 16–23 estimated on basis of weather records and records for station at Glenwood.

Maximums.—May 1968: Discharge, 85,000 cfs 2300 hours May 13 (gage height, 35.64 ft).

1938 to April 1968: Discharge, 64,200 cfs Mar. 30, 1945 (gage height, 30.16 ft, from floodmarks).

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	520	9	3,110	17	4,800	25	540
2	413	10	8,480	18	3,900	26	540
3	335	11	10,700	19	2,600	27	540
4	329	12	4,980	20	1,700	28	540
5	272	13	37,600	21	1,400	29	540
6	221	14	19,500	22	1,100	30	540
7	191	15	7,400	23	800	31	455
8	580	16	5,800	24	640		

Monthly mean discharge	cubic feet per second	3,905
Runoff	inches	14.43
Runoff	acre-feet	240,100

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 10*			*May 12*		
2400	0.91	173	0400	8.52	6,350	0400	8.33	6,090
May 8			0800	7.21	4,740	0800	8.00	5,700
0400	1.04	212	1200	6.57	4,020	1200	7.36	4,980
0600	2.36	640	1600	8.90	6,870	1800	6.60	4,020
1200	2.32	620	1800	12.00	12,000	2400	6.00	3,350
1800	2.32	620	2000	13.85	15,200	*May 13*		
2100	2.55	725	2300	15.80	19,100	0600	5.48	2,800
2400	3.30	1,140	2400	15.75	19,100	0800	6.00	3,350
May 9			*May 11*			1000	11.60	11,300
0300	3.55	1,290	0400	14.55	16,700	1200	19.00	26,100
1000	3.22	1,080	0800	12.00	12,000	1400	25.50	51,000
1200	3.80	1,440	1300	10.20	8,840	1600	30.00	63,700
1400	5.65	2,910	1600	10.00	8,500	1800	32.25	72,100
1800	7.16	4,740	2200	8.73	6,610	2100	35.20	83,500
2400	9.97	8,500	2400	8.83	6,740	2300	35.64	85,000
						2400	35.55	85,000

(56) 7–3599. DeGRAY RESERVOIR NEAR ARKADELPHIA, ARK.

Location.—Lat 34°13′08″, long 93°06′40″, in SE¼NW¼ sec. 14, T. 6 S., R. 20 W., at temporary site on left bank 1,500 ft upstream from dam, 3.5 miles northwest of Caddo Valley, 8.3 miles northwest of Arkadelphia, and at mile 7.9.

Drainage area.—453 sq mi.

Gage-height record.—Staff gage read at least once daily, except May 5, 19, and 26 when no readings were made. Datum of gage is at mean sea level.

Maximums.—May 1968: Contents, 96,420 acre-ft 1400 hours May 14 (elevation, 329.6 ft). Computed rate of inflow, 120,000 cfs 0500 hours May 14.

Remarks.—Reservoir is formed by earth-fill dam. Regulated storage has not begun. Capacity, 881,900 acre-ft at crest of spillway (elevation, 423.0 ft), 654,700 acre-ft at top of designated power pool, water supply, and pollution abatement (elevation, 408.0 ft), 261,500 acre-ft at top of conservation pool and bottom of designated power pool (elevation, 367.0 ft). Reservoir is to be used principally for flood control, power development, and recreation.

Cooperation—Records furnished by Corps of Engineers.

(57) 7–3599.1 CADDO RIVER BELOW DeGRAY DAM NEAR ARKADELPHIA, ARK.

Location.—Lat 34°12′21″, long 93°06′27″, in SW¼NE¼ sec 23, T. 6 S., R. 20 W., at temporary site on downstream side of bridge on access road to DeGray Dam,

2,500 ft below DeGray Dam, 1.9 miles upstream from DeGray Creek, 2.7 miles northwest of Caddo Valley, 6.2 miles northwest of Arkadelphia, and at mile 7.3.

Drainage area.—480 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 209.04 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 44,300 cfs May 14 (gage height, 21.55 ft).

1964 to April 1968: Discharge, 37,500 cfs Apr. 26, 1966 (gage height, 18.98 ft).

Remarks.—Floodflow appreciably affected by storage in DeGray Reservoir.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	840	9	1,410	17	7,680	25	770
2	675	10	7,920	18	6,520	26	1,100
3	550	11	17,400	19	4,100	27	1,300
4	479	12	9,600	20	2,420	28	935
5	440	13	12,000	21	1,650	29	840
6	374	14	37,300	22	1,210	30	768
7	328	15	36,200	23	935	31	636
8	462	16	17,700	24	810		

Monthly mean discharge	cubic feet per second	5,657
Runoff	acre-feet	347,800

(58) 7–3600. OUACHITA RIVER AT ARKADELPHIA, ARK.

Location.—Lat 34°07′16″, long 92°02′46″, in sec. 17, T. 7 S., R. 19 W., on downstream side of bridge on State Highway 7 at Arkadelphia, 5.4 miles downstream from Caddo River, and at mile 420.6.

Drainage area.—2,311 sq mi.

Gage-height record.—Water-stage recorder graph, except May 18–20 when once-daily U.S. Weather Bureau gage readings were used. Datum of gage is 160.30 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 162,000 cfs 1500 hours May 14 (gage height, 30.08 ft).

1905–6, 1929 to April 1968: Discharge, 170,000 cfs Mar. 30, 1945 (gage height, 30.3 ft, from floodmark).

Remarks.—Floodflow slightly affected by Lake Catherine since 1925 and by Lake Hamilton since 1932; appreciably affected by Lake Ouachita since 1952 and by partially completed DeGray Reservoir during the current flood.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	9,570	9	4,280	17	24,500	25	10,200
2	6,890	10	16,700	18	26,500	26	13,000
3	3,950	11	34,300	19	21,300	27	10,500
4	5,880	12	28,200	20	14,500	28	10,900
5	3,200	13	37,600	21	10,600	29	10,900
6	2,120	14	148,000	22	11,000	30	10,500
7	1,510	15	95,800	23	11,900	31	10,200
8	2,570	16	43,300	24	11,100		

Monthly mean discharge	cubic feet per second	21,020
Runoff	acre-feet	1,292,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 11*—Cont.			*May 14*—Cont.		
2400	7.60	4,180	0800	21.25	30,200	1200	29.55	152,000
May 9			1600	20.10	26,300	1500	30.08	162,000
0800	6.98	3,400	2400	18.60	22,400	1600	30.04	160,000
1600	6.71	3,040	*May 12*			2400	28.80	136,000
2100	7.25	3,660	0800	17.00	18,400	*May 15*		
2400	8.52	5,350	1600	20.10	26,300	0800	27.30	108,000
0400	10.78	8,420	2400	18.60	22,400	1600	26.15	86,800
0800	12.45	10,700	*May 13*			2400	25.20	69,400
1600	15.45	15,400	0800	17.00	18,400	*May 16*		
2400	18.63	22,400	1200	17.30	19,100	0800	24.08	53,000
May 11			1600	19.90	25,700	1600	22.42	37,000
0400	19.86	25,700	2000	22.30	36,300	2400	20.15	26,500
0800	20.85	28,600	2400	24.65	59,500	*May 17*		
1600	22.05	34,400	*May 14*			0800	18.92	23,100
2000	22.20	35,600	0800	28.30	127,000	1600	19.10	23,700
2400	22.10	35,000	1000	29.10	142,000			

(59) 7–3601.5 PEARSON CREEK TRIBUTARY NEAR DALARK, ARK.

[Crest-stage station]

Location.—Lat 34°01′59″, long 92°52′05″, in SE¼NW¼ sec. 17, T. 8 S., R. 17 W., on right bank 10 ft upstream from culvert on State Highway 8, 1.1 miles east of Dalark, and 1.7 miles upstream from mouth.

Drainage area.—0.40 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 22 cfs and by flow-through-culvert measurements at 113 cfs and 147 cfs.

Maximums.—May 1968: Discharge, 101 cfs May 13 (gage height, 4.93 ft).

1961 to April 1968: Discharge, 147 cfs Apr. 22, 1964 (gage height, 5.81 ft).

(60) 7–3605. LAKE GREESON NEAR MURFREESBORO, ARK.

Location.—Lat 34°08′55″, long 93°42′55″, in NW¼ sec. 18, T. 7 S., R. 25 W., at Narrows Dam on Little Missouri River, 6.5 miles northwest of Murfreesboro, 9.7 miles upstream from Muddy Fork Creek, and at mile 105.5.

Drainage area.—237 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Maximums.—May 1968: Contents, 423,800 acre-ft 1600 hours May 18 to 1600 hours May 19 (elevation, 564.60 ft). Computed rate of inflow, 97,000 cfs 1500 hours May 13.

1949 to April 1968: Contents, 359,330 acre-ft May 21, 1953 (elevation, 557.84 ft).

Remarks.—Lake is formed by concrete-gravity dam. Regulated storage began Nov. 30, 1949. Capacity, 407,900 acre-ft at crest of spillway (elevation, 563.0 ft), 279,700 acre-ft at top of designated power pool (elevation, 548.0 ft), and 77,600 acre-ft at top of conservation pool and bottom of designated power pool (elevation, 504.0 ft). Reservoir is used principally for flood control, power development, and recreation.

Cooperation.—Records furnished by Corps of Engineers.

Capacity.—

Elevation (feet)	*Contents (thousands of acre-ft)*	*Elevation (feet)*	*Contents (thousands of acre-ft)*
546.0	265.5	555.0	334.5
548.0	279.7	560.0	379.2
550.0	294.5	565.0	427.8

Contents, in thousands of acre-feet, at 0800 hours of indicated day, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	271.4	9	274.7	17	416.0	25	401.8
2	270.2	10	280.1	18	423.2	26	397.4
3	269.2	11	295.3	19	423.8	27	395.3
4	269.1	12	302.8	20	422.4	28	393.0
5	269.4	13	312.0	21	420.1	29	387.7
6	269.5	14	400.4	22	417.1	30	381.9
7	269.5	15	406.8	23	413.9	31	375.8
8	272.6	16	409.7	24	408.2		

Change in contents.....thousands of acre-feet +100.6

(61) 7–3605.01 LITTLE MISSOURI RIVER AT NARROWS DAM NEAR MURFREESBORO, ARK.

Location.—Lat 34°08′51″, long 93°43′04″, in NW¼NW¼ sec. 18, T. 7 S., R. 25 W., in powerhouse at Narrows Dam, 6.5 miles northwest of Murfreesboro, 9.5 miles upstream from Muddy Fork Creek, and at mile 105.5.

Drainage area.—237 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929.

Discharge record.—Discharge computed from flow meter.

Maximums.—May 1968: Discharge, 3,600 cfs 0900 hours May 23.

1950 to April 1968: Daily discharge since power generation began May 27, 1950, 5,210 cfs June 2, 1957.

Remarks.—Flow completely regulated by Lake Greeson since Nov. 30, 1949.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	814	9	1,740	17	1,660	25	3,410
2	819	10	1,370	18	1,970	26	2,360
3	310	11	962	19	1,970	27	1,730
4	10	12	972	20	1,960	28	2,730
5	10	13	210	21	2,290	29	3,340
6	10	14	688	22	2,180	30	3,360
7	10	15	1,080	23	3,160	31	3,400
8	1,120	16	1,150	24	3,440		

Monthly mean discharge.....cubic feet per second 1,620
Runoff.....acre-feet 99,640

(62) 7–3608. MUDDY FORK CREEK NEAR MURFREESBORO, ARK.

Location.—Lat 34°04′59″, long 93°45′07″, in NE¼ sec. 3, T. 8 S., R. 26 W., 1.8 miles upstream from mouth, and 3 miles northwest of Murfreesboro.

Drainage area.—121 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 337.29 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 24,000 cfs.

Maximums.—May 1968: Discharge, 22,000 cfs 1700 hours May 13 (gage height, 21.35 ft.)

1940 to April 1968: Discharge, 47,100 cfs Mar. 30, 1945 (gage height, 29.7 ft).

Cooperation.—Records furnished by Corps of Engineers.

(63) 7–3610. LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK.

Location.—Lat 34°03′, long 93°43′, in SE¼ sec. 13, T. 8 S., R. 26 W., near right bank on downstream side of pier of bridge on State Highway 27, 1.9 miles downstream from Muddy Fork Creek, 2 miles southwest of Murfreesboro, 4.6 miles upstream from Prairie Creek, 11.4 miles downstream from Lake Greeson, and at mile 94.1.

Drainage area.—380 sq mi.

Gage-height record.—Digital-recorder tape punched at 15-minute intervals. Datum of gage is 324.28 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 38,000 cfs and by contracted-opening measurement at 120,000 cfs.

Maximums.—May 1968: Discharge, 20,800 cfs 1815 hours May 13 (gage height, 14.44 ft.)

1928–31, 1937 to April 1968: Discharge, 120,000 cfs March 30, 1945 (gage height, 19.84 ft).

1927 to April 1968: Discharge, not determined April 1927 (gage height, about 21 ft, from information by State Highway Department).

Remarks.—Floodflow affected by Lake Greeson since November 1949.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	1,250	9	2,890	17	8,310	25	3,330
2	1,120	10	7,290	18	4,500	26	4,680
3	838	11	5,260	19	3,070	27	2,070
4	246	12	2,310	20	2,470	28	2,570
5	175	13	11,100	21	2,340	29	3,280
6	136	14	9,930	22	2,340	30	3,220
7	154	15	2,500	23	2,720	31	3,190
8	2,240	16	2,620	24	3,270		

Monthly mean discharge ..... cubic feet per second 3,272
Runoff ..... acre-feet 201,200

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 10*—Cont.			*May 13*		
2400	1.73	123	1000	6.25	3,270	0200	5.27	2,140
May 7			1200	7.57	5,170	0600	3.82	1,030
1800	1.68	112	1600	11.45	11,200	0800	5.31	2,190
2400	2.63	438	2000	12.41	13,300	1000	9.73	8,250
May 8			2400	11.47	11,400	1400	13.26	15,800
0400	4.84	1,760	*May 11*			1800	14.40	20,600
0800	5.44	2,370	0200	10.67	9,990	1815	14.44	20,800
1200	4.93	1,840	0600	7.97	5,730	2200	14.15	19,500
1600	5.94	2,970	1000	6.10	3,150	2400	13.72	17,300
2000	5.82	2,790	1400	6.91	4,190	*May 14*		
2400	5.59	2,550	1600	7.22	4,610	0400	13.38	16.100
May 9			2400	6.56	3,770	0800	12.16	12,800
0800	5.36	2,250	*May 12*			1200	10.31	9,270
1200	5.53	2,490	0400	5.67	2,610	1600	8.74	6,710
1600	6.20	3,270	0800	4.48	1,470	2000	7.11	4,470
2200	6.70	3,910	1000	4.27	1,300	2400	6.35	3,510
2400	6.54	3,630	1400	5.31	2,190	*May 15*		
May 10			1800	5.68	2,670	1200	5.49	2,430
0800	6.08	3,150	2400	5.57	2,490	2400	5.10	1,990

(64) 7–3610.2 PRAIRIE CREEK TRIBUTARY NEAR KIRBY, ARK.

[Crest-stage station]

Location.—Lat 34°09′10″, long 93°37′53″, in SE¼ sec. 11, T. 7 S., R. 25 W., on right bank 19 ft upstream from culvert on State Highway 27, 0.3 mile upstream from mouth, and 6.6 miles south of Kirby.

Drainage area.—0.16 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 21 cfs and by flow-through-culvert measurements at 143 cfs, 182 cfs, and 306 cfs.

Maximums.—May 1968: Discharge, 306 cfs May 13 (gage height, 7.29 ft).

1963 to April 1968: Discharge, 182 cfs Aug. 13, 1966 (gage height, 5.7 ft, from high-water profile).

(65) 7–3611.8 SOUTH FORK OZAN CREEK NEAR OZAN, ARK.

[Crest-stage station]

Location.—Lat 33°49′15″, long 93°42′28″, in SE¼SW¼ sec. 5, T. 11 S., R. 25 W., on right bank 30 ft upstream from bridge on State Highway 4, 0.4 mile upstream from Missouri Pacific Railroad Co. bridge, and 2.0 miles south of Ozan.

Drainage area.—17.6 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,600 cfs and by field estimate at 5,200 cfs.

Maximums.—May 1968: Discharge, 5,000 cfs May 11 (gage height, 23.74 ft).

1963 to April 1968: Discharge, 5,400 cfs Apr. 26, 1967 (gage height, 24.33 ft).

(66) 7–3612. OZAN CREEK NEAR McCASKILL, ARK.

Location.—Lat 33°52′55″, long 93°35′59″, in NE¼SE¼ sec. 18, T. 10 S., R. 24 W., on downstream side of bridge on State Highway 24, 1.7 miles upstream from Haley Branch, 3.5 miles southeast of McCaskill, and at mile 14.5.

Drainage area.—148 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 281.07 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 18,000 cfs.

Maximums.—May 1968: Discharge, 18,900 cfs 0130 hours May 11 (gage height, 17.93 ft).

1939 to April 1968: Discharge, 30,000 cfs Mar. 30, 1945 (gage height, 19.9 ft).

Cooperation.—Gage height record furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	712	9	1,160	17	11,000	25	230
2	340	10	5,900	18	3,360	26	1,240
3	146	11	8,920	19	1,440	27	792
4	92	12	2,170	20	760	28	543
5	66	13	1,900	21	453	29	268
6	45	14	4,950	22	308	30	183
7	82	15	2,170	23	244	31	142
8	1,220	16	2,110	24	212		

Monthly mean discharge	cubic feet per second	1,715
Runoff	inches	13.36
Runoff	acre-feet	105,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 6			*May 11*			*May 16*		
2400	1.90	35	0130	17.93	18,900	0300	9.74	1,330
May 7			0400	17.70	17,000	0800	11.43	1,940
1900	1.86	31	1200	15.70	8,280	1500	12.25	2,320
2000	1.95	41	2400	13.47	3,360	1900	12.03	2,220
2200	3.40	268	*May 12*			2400	13.80	3,840
2300	5.00	513	1200	11.90	2,120	*May 17*		
2400	6.34	712	2400	10.68	1,640	0800	16.67	11,800
May 8			*May 13*			1330	17.79	17,700
0100	8.20	1,020	0400	10.00	1,400	2400	15.74	8,600
0300	10.00	1,500	0800	9.31	1,180	*May 18*		
0500	10.38	1,610	1200	11.02	1,780	1200	13.20	3,020
1800	8.46	1,040	1800	11.77	2,080	2400	11.74	2,080
2400	6.94	776	2400	13.60	3,550	*May 19*		
May 9			*May 14*			0800	10.77	1,680
1000	5.80	588	0400	14.91	6,150	1600	9.38	1,210
1400	8.10	946	0800	15.15	6,820	2400	8.32	964
1800	11.42	1,940	1200	14.82	5,890	*May 20*		
2400	11.85	2,120	2000	13.63	3,550	1200	7.08	760
May 10			2400	13.16	3,020	2400	6.02	588
0900	10.87	1,720	*May 15*			*May 21*		
1200	12.42	2,440	0800	12.43	2,440	1200	5.18	453
1800	15.92	9,240	1600	11.50	1,940	2400	4.55	356
2400	17.88	18,400	2400	10.28	1,500			

(67) LITTLE MISSOURI RIVER NEAR DELIGHT, ARK.

Location.—Lat 33°57′21″, long 93°26′36″, in SW¼SE¼ sec. 15, T. 9 S., R. 23 W., on downstream side of bridge on State Highway 19, 6.2 miles southeast of Delight, 7.9 miles downstream from Ozan Creek, and at mile 65.1.

Drainage area.—713 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 222.23 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 37,000 cfs.

Maximums.—May 1968: Discharge, 45,000 cfs 1300 hours May 11 (gage height. 21.50 ft).

1944 to April 1968: Discharge, not determined Mar. 31, 1945 (gage height 24.3 ft).

Remarks.—Floodflow affected by Lake Greeson since November 1949.

Cooperation.—Records furnished by Corps of Engineers.

(68) 7–3615. ANTOINE RIVER AT ANTOINE, ARK.

Location.—Lat 34°02′20″, long 93°25′05″, in NW¼NW¼ sec. 24, T. 8 S., R. 23 W., near right bank on downstream side of pier of bridge on State Highway 26 at Antoine, 1.6 miles downstream from Brushy Creek, 1.9 miles downstream from Suck Creek, and at mile 8.5.

Drainage area.—181 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 229.33 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 28,000 cfs.

Maximums.—May 1968: Discharge, 28,400 cfs 0600 hours May 14 (gage height, 27.60 ft).

1905 to April 1968: Discharge, 40,000 cfs in 1905 (gage height, 29.7 ft, from information by State Highway Department).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	337	9	1,450	17	5,100	25	222
2	244	10	5,810	18	2,930	26	466
3	179	11	8,230	19	1,170	27	267
4	151	12	2,100	20	758	28	256
5	111	13	12,800	21	542	29	222
6	75	14	20,400	22	442	30	164
7	66	15	2,490	23	337	31	139
8	899	16	1,610	24	264		

Monthly mean discharge	cubic feet per second	2,266
Runoff	inches	14.43
Runoff	acre-feet	139,300

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 11*			*May 15*		
2400	4.52	166	0600	22.18	11,700	0600	13.19	2,770
May 8			1200	20.10	8,030	1200	11.33	2,050
0400	5.07	275	1800	16.78	5,060	1800	10.22	1,640
0600	5.65	406	2400	14.28	3,460	2400	9.35	1,350
0800	6.04	503	*May 12*			*May 16*		
0900	7.86	1,020	0600	12.14	2,470	0500	8.89	1,230
1200	10.10	1,710	1200	10.74	1,940	1200	11.34	2,050
1800	8.28	1,140	1800	9.68	1,570	1900	9.76	1,500
2400	7.02	758	2400	8.95	1,350	2400	10.83	1,860
May 9			*May 13*			*May 17*		
0900	6.20	542	0600	8.47	1,200	0200	13.05	2,740
1500	7.05	758	0700	9.57	1,500	0600	16.38	4,570
1600	9.35	1,470	0800	14.08	3,240	1400	19.33	6,830
1800	13.07	2,850	0900	19.00	6,530	2400	16.64	4,710
2100	14.51	3,580	1000	21.00	8,850	*May 18*		
2400	13.47	3,030	1300	22.76	12,400	0600	15.00	3,680
May 10			1800	27.46	27,800	1200	13.21	2,770
0600	10.41	1,820	2300	26.26	23,200	1800	11.50	2,130
0900	9.66	1,570	2400	26.37	23,600	2400	10.09	1,600
1200	12.90	2,770	*May 14*			*May 19*		
1300	15.58	4,220	0600	27.60	28,400	1200	8.68	1,170
1400	18.00	5,900	1200	26.24	22,900	2400	7.73	870
1700	21.50	10,200	1800	24.13	15,600	*May 20*		
2400	22.70	12,800	2400	17.95	5,620	1200	7.22	758
						2400	6.78	633

(69) 7–3616. LITTLE MISSOURI RIVER NEAR BOUGHTON, ARK.

Location.—Lat 33°52′32″, long 93°18′16″, in NE¼ sec. 13, T. 10 S., R. 22 W., on downstream side of bridge on U.S. Highway 67, 1.5 miles northeast of Boughton, 5.9 miles downstream from Howard Creek, 10.2 miles downstream from Antoine River, and at mile 46.8.

Drainage area.—1,068 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 182.13 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 62,000 cfs.

Maximums.—May 1968: Discharge, 52,500 cfs 0100 hours May 15 (gage height, 23.29 ft).

1905 to April 1968: Discharge, 111,000 cfs Mar. 31, 1945 (gage height, 27.2 ft).

Remarks.—Floodflow affected by Lake Greeson since November 1949.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	7,210	9	5,210	17	26,900	25	3,620
2	3,720	10	8,300	18	43,500	26	5,540
3	2,470	11	27,600	19	23,400	27	7,530
4	1,870	12	43,500	20	10,700	28	5,630
5	1,140	13	22,000	21	5,540	29	4,090
6	820	14	54,000	22	3,670	30	3,620
7	660	15	52,500	23	3,370	31	3,470
8	1,660	16	22,700	24	3,320		

Monthly mean discharge	cubic feet per second	13,200
Runoff	acre-feet	811,800

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 12*—Cont.			*May 17*—Cont.		
2400	4.62	640	1600	21.55	29,100	2400	21.87	32,100
May 8			2400	20.64	22,000	*May 18*		
0800	5.12	840	*May 13*			0800	22.15	36,000
1200	5.62	1,070	0800	20.00	18,400	1600	21.90	32,100
1600	7.00	1,770	1600	19.60	16,400	2400	21.35	27,600
2400	10.92	3,720	2000	19.40	15,500	*May 19*		
May 9			2400	19.78	17,400	0800	20.72	22,700
0400	11.82	4,410	*May 14*			1600	19.95	18,400
0800	12.26	4,810	0400	21.92	32,100	2400	18.95	14,100
1200	12.59	5,050	0800	22.40	39,000	*May 20*		
1600	12.89	5,290	1600	22.90	46,500	0800	17.98	11,400
2400	13.34	5,630	2400	23.27	52,500	1600	16.80	9,260
May 10			*May 15*			2400	15.33	7,530
0800	14.22	6,440	0100	23.29	52,500	*May 21*		
1200	15.23	7,420	0400	23.18	51,000	0800	13.71	5,990
1600	16.60	9,020	0800	22.90	46,500	1600	12.25	4,730
2400	17.74	10,700	1600	21.92	32,100	2400	11.20	3,930
May 11			2400	21.04	24,800	*May 22*		
0400	18.14	11,600	*May 16*			0800	10.70	3,620
0800	19.65	16,400	0800	20.18	19,400	1600	10.61	3,570
1200	21.40	27,600	1600	19.30	15,100	2400	10.51	3,520
1600	22.22	36,000	1900	18.84	13,500	*May 23*		
2400	22.72	43,500	2400	19.45	15,500	0800	10.30	3,420
May 12			*May 17*			1600	10.01	3,270
0800	22.30	37,500	0800	20.00	18,400	2400	9.88	3,220
			1600	20.90	24,100			

(70) LITTLE MISSOURI RIVER NEAR WHELEN SPRINGS, ARK.

Location.—Lat 33°48′56′, long 93°08′24″, in NE¼NE¼ sec. 3, T. 11 S., R. 20 W., on downstream side of bridge on State Highway 53, just downstrea from McNeeley Creek, 1.3 miles southwest of Whelen Springs, and at mile 25.8.

Drainage area.—1,414 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 138.50 ft, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 83,000 cfs.

Maximums.—May 1968: Discharge, 60,000 cfs 1300 hours May 15 (gage height, 30.50 ft).

1944 to April 1968: Discharge, not determined, Mar. 31, 1945 (gage height, 34.9 ft).

Remarks.—Floodflow affected by Lake Greeson since November 1949.

Cooperation.—Records furnished by Corps of Engineers.

(71) 7–3616.8 LITTLE CANEY CREEK NEAR ROSSTON, ARK.

[Crest-stage station]

Location.—Lat 33°36′15″, long 93°17′30″, in SE¼SE¼ sec. 17, T. 13 S., R. 21 W., on right bank 20 ft upstream from culvert on State Highway 19, 1.0 mile north of junction with State Highway 4, and 1.5 miles northwest of Rosston.

Drainage area.—1.5 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 67 cfs and by flow-through-culvert measurements at 309 cfs, 680 cfs, and 1,270 cfs.

Maximums.—May 1968: Discharge, 175 cfs May 17 (gage height, 8.51 ft).

1961 to April 1968: Discharge, 1,270 cfs Oct. 1, 1961 (gage height, 13.7 ft, from high-water profile).

(72) 7–3617.8 OLD BRADSHAW CREEK NEAR HOLLYWOOD, ARK.

[Crest-stage station]

Location.—Lat 34°06′02″, long 92°12′24″, in NE¼SE¼ sec. 26, T. 7 S., R. 21 W., on left bank 25 ft downstream from bridge on State Highway 26, 0.7 mile upstream from tributary, and 2.6 miles east of Hollywood.

Drainage area.—3.46 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 915 cfs May 13 (gage height, 15.15 ft).

1962 to April 1968: Discharge, 815 cfs Jan. 1, 1962 (gage height, 14.34 ft).

(73) 7–3620. OUACHITA RIVER AT CAMDEN, ARK.

Location.—Lat 33°35′47″, long 92°49′05″, in SE¼ sec. 14, T. 13 S., R. 17 W., at bridge on U.S. Highway 79 at Camden, 3.4 miles downstream from Ecore Fabre Bayou, 6.2 miles upstream from Two Bayou Creek, and at mile 354.1.

Drainage area.—5,391 sq mi.

Gage-height record.—Water-stage recorder graph, except 1200 hours May 18 to 2400 hours May 31. Auxiliary water-stage recorder graph for gage 3.2 miles downstream. Graph for May 18–31 was drawn on basis of gage readings for May 19–29 and recorder graph for auxiliary gage,. Datum of gage is 71.69 ft above mean sea level, datum of 1929, alluvial valley adjustment of 1941.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 230,000 cfs. Fall used as a factor.

Maximums.—May 1968: Discharge, 183,000 cfs 1800 hours May 17 (gage height, 43.08 ft).

1886 to April 1968: Discharge, 243,000 cfs Apr. 3, 1945 (gage height, 44.82 ft).

1882 to April 1968: Discharge, not determined May 12, 1882 (gage height, 46.0 ft, from information by Corps of Engineers).

Remarks.—Floodflow insignificantly affected by Lake Catherine and Lake Hamilton. Some effect by Lake Greeson since 1949, by Lake Ouachita since 1952, and by partially completed DeGray Reservoir during current flood.

Cooperation.—Records furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	26,200	9	4,950	17	182,000	25	40,300
2	26,200	10	12,200	18	152,000	26	35,800
3	23,700	11	18,700	19	119,000	27	30,400
4	18,700	12	26,200	20	113,000	28	28,800
5	13,400	13	46,300	21	86,400	29	23,800
6	8,870	14	99,500	22	62,800	30	21,000
7	5,560	15	115,000	23	54,300	31	20,400
8	4,200	16	158,000	24	40,500		

Monthly mean discharge	cubic feet per second	52,200
Runoff	acre-feet	3,210,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 13*			*May 17*—Cont.		
2400	11.30	3,420	1200	30.92	42,000	2400	43.05	177,000
May 9			2400	31.95	49,200	*May 18*		
0800	10.90	4,560	*May 14*			0800	42.87	168,000
1600	11.80	6,090	0800	33.27	62,200	1600	42.50	150,000
2400	13.40	8,170	1600	34.54	72,500	2400	42.15	138,000
May 10			2400	35.60	80,400	*May 19*		
0800	15.00	10,000	*May 15*			0800	41.80	132,000
1600	16.80	12,000	0800	36.40	85,800	1600	41.42	131,000
2400	19.00	15,400	1600	37.15	92,900	2400	41.03	128,000
May 11			2400	38.50	114,000	*May 20*		
0800	21.32	18,100	*May 16*			0800	40.66	122,000
1600	23.30	20,600	0800	40.00	135,000	1600	40.25	113,000
2400	25.02	23,400	1600	41.06	140,000	2400	39.84	106,000
May 12			2400	42.00	150,000	*May 21*		
0800	26.50	25,800	*May 17*			0800	39.40	97,500
1600	27.75	28,100	0800	42.70	175,000	1600	38.90	89,100
2400	28.85	32,100	1600	43.04	182,000	2400	38.40	82,800
0800	29.93	37,000	1800	43.08	183,000			

(74) 7–3620.5 ROSS CREEK NEAR CAMDEN, ARK.

[Crest-stage station]

Location.—Lat 33°32′40″, long 92°53′20″, in E½, sec. 6, T. 14 S., R. 17 W., on right bank 44 ft upstream from bridge on U.S. Highway 79, 1.7 miles upstream from mouth, 4.2 miles southwest of Camden.

Drainage area.—10 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 410 cfs and by contracted-opening measurement at 3,200 cfs.

Maximums.—May 1968: Discharge, 570 cfs May 17 (gage height, 9.96 ft).
1961 to April 1968: Discharge, 3,200 cfs Apr. 30, 1966 (gage height, 14.0 ft).

(75) 7–3621. SMACKOVER CREEK NEAR SMACKOVER, ARK.

Location.—Lat 33°22′33″, long 92°46′37″, in NW¼SE¼ sec. 32, T. 15 S., R. 16 W., near right bank on downstream side of pier of bridge on State Highway 7, 0.1 mile downstream from Camp Creek, 3.3 miles northwest of Smackover, and at mile 23.0.

Drainage area.—377 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 97.56 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 20,000 cfs.

Maximums.—May 1968: Discharge, 7,250 cfs 1000 hours May 19 (gage height, 17.30 ft).

1938 to April 1968: Discharge, 25,000 cfs Apr. 27, 1958 (gage height, 21.21 ft).

Cooperation.—Gage-height record furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	626	9	504	17	2,080	25	506
2	458	10	1,290	18	5,130	26	2,060
3	197	11	2,390	19	6,930	27	2,310
4	316	12	2,930	20	3,930	28	1,910
5	442	13	3,330	21	2,150	29	1,290
6	390	14	2,730	22	1,610	30	688
7	266	15	1,990	23	1,160	31	296
8	211	16	1,490	24	731		

Monthly mean discharge	cubic feet per second	1,688
Runoff	inches	5.16
Runoff	acre-feet	103,800

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 7			*May 13*			*May 19*		
2400	5.55	184	0800	14.87	3,450	0600	17.26	7,130
May 8			2400	14.50	3,130	1000	17.30	7,250
0400	5.40	170	*May 14*			1600	17.14	6,930
1000	5.39	166	1200	14.14	2,730	2400	16.56	5,880
1600	6.11	236	2400	13.71	2,390	*May 20*		
2400	6.93	318	*May 15*			1200	15.26	3,930
1200	7.95	442	1200	13.24	1,990	2400	14.16	2,730
May 9			2400	12.80	1,730	*May 21*		
1500	8.39	498	*May 16*			1200	13.42	2,150
2000	9.78	706	1200	12.41	1,490	2400	12.97	1,790
2400	10.66	850	2400	12.25	1,390	*May 22*		
May 10			*May 17*			1200	12.60	1,610
0800	11.79	1,200	0600	12.42	1,490	2400	12.22	1,390
1600	12.52	1,550	1200	13.05	1,850	*May 23*		
2400	13.18	1,910	1800	14.06	2,630	1200	11.80	1,200
May 11			2400	14.72	3,330	2400	11.20	1,000
1200	13.77	2,390	*May 18*			*May 23*		
2400	14.12	2,730	1000	16.10	5,280	1200	10.02	738
May 12			1600	16.66	6,030	2400	8.00	442
1400	14.34	2,930	2400	17.07	6,730			
2400	14.74	3.330						

(76) 7–3623.3 DUNN CREEK NEAR HAMPTON, ARK.

[Crest-stage station]

Location.—Lat 33°32′00″, long 92°30′55″, in SE¼NW¼ sec. 2, T. 14 S., R. 14 W., on left bank 35 ft downstream from bridge on State Highway 4, 0.7 mile upstream from mouth, and 2.8 miles west of Hampton.

Drainage area.—7.0 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 270 cfs and by contracted-opening measurement at 4,240 cfs.

Maximums.—May 1968: Discharge, 1,520 cfs May 17 (gage height, 8.51 ft).

1962 to April 1968: Discharge, 4,240 cfs May 1, 1966 (gage height, 10.11 ft).

(77) 7-3624.5 COOKS CREEK NEAR FORDYCE, ARK.

[Crest-stage station]

Location.—Lat 33°50'33", long 92°28'09", in NW¼NE¼ sec. 19, T. 10 S., R. 14 W., on left bank 16 ft downstream from bridge on State Highway 8, 0.3 mile downstream from small tributary, 1.0 mile upstream from small tributary, and 3.9 miles northwest of Fordyce.

Drainage area.—5.2 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 130 cfs and by contracted-opening measurement at 1,950 cfs.

Maximums.—May 1968: Discharge, 1, 950 cfs May 13 (gage height, 11.78 ft).
1962 to April 1968: Discharge, 1,340 cfs Apr. 24, 1966 (gage height, 11.09 ft).

(78) 7-3625. MORO CREEK NEAR FORDYCE, ARK.

Location.—Lat 33°47'32", long 92°19'30", in NW¼NW¼ sec. 3, T. 11 S., R. 12 W., on downstream side of bridge on State Highway 8, 1,100 ft upstream from Caney Creek, 4 miles southeast of Fordyce, 12 miles upstream from White Water Creek, and at mile 38.2.

Drainage area.—216 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 160.63 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 19,000 cfs.

Maximums.—May 1968: Discharge, 9,000 cfs 1900 hours May 15 (gage height, 13.82 ft).
1938 to April 1968: Discharge, 26,800 cfs May 2, 1958 (gage height, 16.47 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	980	9	91	17	7,480	25	364
2	960	10	415	18	6,930	26	229
3	920	11	2,210	19	5,170	27	204
4	780	12	2,710	20	2,810	28	164
5	538	13	2,320	21	1,530	29	172
6	233	14	4,400	22	1,060	30	196
7	92	15	8,070	23	830	31	160
8	68	16	6,400	24	600		

Monthly mean discharge	cubic feet per second	1,910
Runoff	inches	10.17
Runoff	acre-feet	117,200

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 13*—Cont.			*May 19*—Cont.		
2400	3.98	66	2300	11.46	2,140	2400	12.30	3,950
May 9			2400	11.56	2,320	*May 20*		
1100	3.88	62	*May 14*			1200	11.80	2,810
1200	4.00	66	1000	12.23	3,830	2400	11.36	1,970
1400	4.18	76	1800	12.88	5,610	*May 21*		
1800	4.92	116	2400	13.24	6,750	1200	11.00	1,530
2400	5.82	180	*May 15*			2400	10.66	1,250
May 10			0800	13.46	7,480	*May 22*		
1200	7.00	294	1900	13.82	9,000	1200	10.36	1,060
1600	7.60	366	2400	13.74	8,700	2400	10.02	900
1800	8.70	540	*May 16*			*May 23*		
2200	10.00	900	1200	13.24	6,750	1200	9.78	830
2400	10.47	1,120	2000	12.78	5,310	2400	9.47	720
May 11			2400	12.90	5,610	*May 24*		
0300	11.09	1,630	*May 17*			1200	9.11	625
1400	11.68	2,610	0600	13.44	7,480	2400	8.47	504
2000	11.66	2,510	1300	13.59	8,070	*May 25*		
2400	11.70	2,610	2400	13.45	7,480	1200	7.49	354
May 12			*May 18*			2400	6.52	244
1200	11.82	2,810	1200	13.32	6,930	*May 26*		
2400	11.68	2,610	2400	13.10	6,230	0800	6.31	224
May 13			*May 19*			2400	6.29	224
1200	11.55	2,320	1200	12.78	5,310			

(79) 7–3630. SALINE RIVER AT BENTON, ARK.

Location.—Lat 34°34′05″, long 92°36′40″, in SE¼NE¼ sec. 9, T. 2 S., R. 15 W., on left bank three-quarters of a mile west of Benton, 3 miles downstream from confluence of North Fork and Alum Fork, and at mile 198.1.

Drainage area.—569 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 260.91 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 66,000 cfs 0600 hours May 14 (gage height, 26.50 ft).

1927 to April 1968: Discharge, 110,000 cfs April 1927 (gage height, 30.5 ft, from information by State Highway Department).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	1,180	9	1,200	17	6,860	25	875
2	810	10	7,570	18	8,660	26	6,920
3	594	11	22,500	19	3,380	27	3,100
4	490	12	9,210	20	1,790	28	1,520
5	424	13	14,300	21	1,220	29	1,050
6	359	14	50,800	22	950	30	735
7	304	15	12,700	23	735	31	534
8	315	16	5,000	24	572		

Monthly mean discharge	cubic feet per second	5,376
Runoff	inches	10.89
Runoff	acre-feet	330,600

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 12*			*May 16*—Cont.		
2400	4.10	370	0800	15.14	9,860	1200	10.76	5,000
May 9			1600	13.09	7,410	2400	11.57	5,800
1000	4.17	412	2400	10.92	5,100	*May 17*		
1200	4.68	699	*May 13*			0400	11.46	5,700
1400	5.50	1,100	0800	9.38	3,600	1600	13.27	7,630
1600	6.60	1,680	1100	11.62	5,800	2400	14.12	8,520
1800	7.34	2,080	1300	14.40	8,880	*May 18*		
2100	8.04	2,500	1500	17.00	13,200	0700	15.30	10,200
2400	8.90	3,170	1800	20.00	22,800	1200	15.04	9,700
May 10			2000	21.46	30,200	2000	12.78	7,080
0600	11.30	5,500	2400	23.84	44,600	2400	11.50	5,700
1200	12.55	6,860	*May 14*			*May 19*		
1400	12.97	7,300	0600	26.50	66,000	0500	10.00	4,200
1800	14.90	9,560	1200	25.49	57,000	1200	8.78	3,090
2000	15.84	11,000	1900	23.20	40,400	1800	8.05	2,500
2400	17.35	14,100	2400	21.49	30,200	2400	7.50	2,200
May 11			*May 15*			*May 20*		
0700	20.00	22,800	0600	18.70	17,800	1200	6.75	1,790
1200	21.28	29,000	1200	15.00	9,700	2400	6.18	1,460
1400	21.17	28,600	1600	12.75	7,080	*May 21*		
1900	20.00	22,800	2400	10.00	4,200	1200	5.76	1,220
2400	18.05	15,600	*May 16*			2400	5.42	1,050
			0600	10.32	4,500			

(80) 7–3630.5 HOLLY CREEK TRIBUTARY NEAR BENTON, ARK.

[Crest-stage station]

Location.—Lat 34°32′04″, long 92°33′12″, in SW¼NW¼ sec. 19, T. 2 S., R. 14 W., on right bank 25 ft upstream from culvert on State Highway 35, 0.7 mile upstream from mouth, and 2.8 miles southeast of Benton.

Drainage area.—1.46 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 315 cfs May 13 (gage height, 5.93 ft).

1962 to April 1968: Discharge, 475 cfs Apr. 23, 1964 (gage height, 6.51 ft, from floodmark).

(81) 7–3632. SALINE RIVER NEAR SHERIDAN, ARK.

Location.—Lat 34°06′56″, long 92°24′21″, in NE¼NW¼ sec. 15, T. 7 S., R. 13 W., on downstream side of bridge on U.S. Highway 167, 1 mile upstream from Gamble Creek, 1.6 miles downstream from Lost Creek, 2.1 miles upstream from Hurricane Creek, 13.5 miles south of Sheridan, and at mile 131.4.

Drainage area.—1,129 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 152.86 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 63,000 cfs 0600 hours May 16 (gage height, 21.38 ft).

1938 to April 1968: Discharge, 64,000 cfs Jan. 24, 1938 (gage height, 21.0 ft).

Cooperation.—Records furnished by Corps of Engineers.

(82) 7–3633. HURRICANE CREEK NEAR SHERIDAN, ARK.

Location.—Lat 34°19′10″, long 92°20′40″, in NW¼NE¼ sec. 6, T. 4 S., R. 12 W., on downstream side of bridge on U.S Highway 270, 2.8 miles downstream from Simpson Creek, 3.5 miles east of Sheridan, and at mile 16.9.

Drainage area.—204 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 200.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 14,000 cfs and by contracted-opening measurement at 52,300 cfs.

Maximums.—May 1968: Discharge, 15,700 cfs 1500 hours May 14 (gage height, 16.03 ft).

1938 to April 1968: Discharge, 52,300 cfs June 27, 1960 (gage height, 18.55 ft, from floodmarks).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	396	9	69	17	3,210	25	166
2	271	10	371	18	3,390	26	201
3	187	11	1,430	19	2,600	27	420
4	136	12	4,220	20	1,820	28	505
5	90	13	3,270	21	1,190	29	333
6	74	14	11,200	22	634	30	201
7	58	15	6,820	23	299	31	136
8	51	16	3,480	24	208		

Monthly mean discharge	cubic feet per second	1,530
Runoff	inches	8.61
Runoff	acre-feet	94,090

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 12*—Cont.			*May 17*—Cont.		
2400	5.90	51	2400	14.04	3,600	2400	13.95	3,510
May 9			*May 13*			*May 18*		
1100	6.02	56	0900	13.74	3,000	0800	14.00	3,630
1300	6.32	69	1400	13.75	3,000	2400	13.75	2,880
2000	6.67	87	2400	14.21	4,220	*May 19*		
2400	7.13	115	*May 14*			1200	13.63	2,620
May 10			0600	14.91	7,060	2400	13.44	2,160
0700	9.17	257	1200	15.95	15,100	*May 20*		
1000	10.00	322	1500	16.03	15,700	1200	13.24	1,840
1800	11.44	470	2400	15.62	11,700	2400	13.00	1,450
2400	12.13	716	*May 15*			*May 21*		
May 11			1200	14.82	6,700	1200	12.77	1,190
1200	13.05	1,560	2400	14.21	3,900	2400	12.51	940
1800	13.24	1,880	*May 16*			*May 22*		
2400	13.49	2,420	1200	13.92	3,300	1200	12.02	630
May 12			2400	13.80	3,000	1800	11.59	460
0600	14.16	3,900	*May 17*			2400	10.99	380
1200	14.48	5,600	1200	13.82	3,090			

(83) 7-3633.3 WEST FORK BIG CREEK AT SHERIDAN, ARK.

[Crest-stage station]

Location.—Lat 34°19′13″, long 92°23′43″, in NW¼NE¼ sec. 3, T. 5 S., R. 13 W., on right bank 60 ft upstream from bridge on U.S. Highway 167, 0.3 mile upstream from mouth, and 0.9 mile north of junction with U.S. Highway 270 in Sheridan.

Drainage area.—4.86 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 680 cfs and by contracted-opening and flow-over-road measurement at 3,720 cfs.

Maximums.—May 1968: Discharge, 730 cfs May 13 (gage height, 14.22 ft).
1960 to April 1968: Discharge, 3,720 cfs June 27, 1960 (gage height, 18.74 ft, from floodmark).

(84) 7–3634.3 EAST FORK DERRIEUSSEAUX CREEK NEAR PINE BLUFF, ARK.

[Crest-stage station]

Location.—Lat 34°17′57″, long 92°11′37″, in NW¼NW¼ sec. 10, T. 5 S., R. 11 W., on right bank 14 ft upstream from culvert on U.S. Highway 270, 1.2 miles east of Grant-Jefferson County line, 3.2 miles upstream from mouth, and 12 miles northwest of Pine Bluff.

Drainage area.—0.64 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 65 cfs and by flow-through-culvert measurements at 130 cfs, 142 cfs, and 237 cfs.

Maximums.—May 1968: Discharge, 92 cfs May 13 (gage height, 7.85 ft, from gage).
1961 to April 1968: Discharge, 237 cfs Feb. 27, 1962 (gage height, 9.29 ft).

(85) 7–3634.5 SALINE RIVER TRIBUTARY NEAR RISON, ARK.

[Crest-stage station]

Location.—Lat 33°56′10″, long 92°10′30″, in NW¼NE¼ sec. 18, T. 9 S., R. 10 W., on right bank 13 ft upstream from culvert on State Highway 35 and 1.8 miles southeast of Rison.

Drainage area.—0.27 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements at 2.9 cfs and by flow-through-culvert measurements at 54 cfs, 61 cfs, 132 cfs, and 159 cfs.

Maximums.—May 1968: Discharge, 159 cfs May 13 (gage height, 7.93 ft).
1964 to April 1968: Discharge, 64 cfs Mar. 20, 1968 (gage height, 6.21 ft).

(86) 7–3635. SALINE RIVER NEAR RYE, ARK.

Location.—Lat 33°42′, long 92°02′, on line between secs. 3 and 4, T. 12 S., R. 9 W., near left bank on downstream side of pier of bridge on State Highway 15, 4 miles southwest of Rye, 5 miles upstream from Hudgin Creek, and at mile 71.0.

Drainage area.—2,062 sq mi.

Gage-height record.—Water-stage recorder graph. Altitude of gage is 95 ft (by barometer).

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 74,500 cfs 2100 hours May 18 (gage height, 31.40 ft).
1927 to April 1968: Discharge, about 73,000 cfs in April 1927 (gage height, 30.5 ft). 30.5 ft).

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	5,140	9	2,220	17	48,400	25	17,500
2	5,350	10	2,920	18	72,500	26	15,500
3	5,350	11	5,280	19	71,500	27	13,700
4	5,350	12	6,970	20	59,600	28	11,700
5	4,930	13	8,050	21	45,600	29	10,300
6	4,480	14	9,310	22	32,700	30	9,050
7	4,040	15	10,800	23	24,500	31	7,770
8	3,360	16	18,300	24	20,200		

Monthly mean discharge	cubic feet per second	18,141
Runoff	inches	10.14
Runoff	acre-feet	1,115,000

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 8			*May 16*—Cont.			*May 23*		
2400	12.53	2,770	1800	25.25	21,700	1200	25.74	24,500
May 9			2400	26.47	29,600	2400	25.27	22,200
1200	11.11	2,090	*May 17*			*May 24*		
1800	10.82	1,960	0600	27.71	30,400	1200	24.92	20,200
2400	11.34	2,180	1200	28.77	49,200	2400	24.59	18,800
May 10			1800	29.74	57,600	*May 25*		
1200	12.78	2,920	2400	30.53	65,500	1200	24.28	17,500
2400	14.65	3,920	*May 18*			2400	24.05	16,300
May 11			0600	31.02	70,500	*May 26*		
1200	16.83	5,350	1200	31.30	73,500	1200	23.82	15,500
2400	18.20	6,410	1200	31.30	73,500	2400	23.53	14.400
May 12			2100	31.40	74,500	*May 27*		
1200	18.92	6,970	2400	31.38	74,300	1200	23.26	13,700
2400	19.51	7,500	*May 19*			2400	22.93	12,500
May 13			0600	31.32	73,500	*May 28*		
1200	20.02	7,950	1200	31.14	71,500	1200	22.63	11,700
2400	20.72	8,690	2400	30.58	66,500	2400	22.28	11,000
May 14			*May 20*			*May 29*		
1200	21.23	9,310	1200	29.91	59,600	1200	21.91	10,300
2400	21.68	10,000	2400	29.13	52,000	2400	21.48	9,720
May 15			*May 21*			*May 30*		
1200	22.17	10,800	1200	28.37	45,600	1200	21.02	9,050
2400	22.82	12,200	2400	27.63	38,600	2400	20.47	8,470
May 16			*May 22*			*May 31*		
0600	23.35	14,000	1200	26.91	32,700	1200	19.74	7,680
1200	24.14	16,700	2400	26.27	28,200	2400	18.99	7,050

(87) 7–3640.3 EAGLE CREEK TRIBUTARY NEAR HERMITAGE, ARK.

[Crest-stage station]

Location.—Lat 33°24′30″, long 92°12′30″, in SW¼ sec. 14, T. 15 S., R. 11 W., on right bank 20 ft upstream from culvert on State Highway 15, 2.5 miles upstream from mouth, and 3.3 miles southwest of Hermitage.

Drainage area.—0.75 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 5.5 cfs and by flow-through-culvert measurement at 59 cfs.

Maximums.—May 1968: Discharge, 22 cfs May 17 (gage height, 4.03 ft).
1963 to April 1968: Discharge, 59 cfs May 1, 1966 (gage height, 4.64 ft).

(88) 7–3640.7 BEAR CREEK NEAR STRONG, ARK.

[Crest-stage station]

Location.—Lat 33°04′25″, long 92°19′35″, in NE¼SE¼ sec. 10, T. 19 S., R. 12 W., on right bank 20 ft downstream from bridge on State Highway 129, 2.2 miles upstream from mouth, and 2.9 miles southeast of Strong.

Drainage area.—6.0 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 200 cfs May 17 (gage height, 11.45 ft).

1963 to April 1968: Discharge, 430 cfs Feb. 9, 1966 (gage height, 13.28 ft).

(89) 7–3641.1 NEVINS CREEK TRIBUTARY NEAR PINE BLUFF, ARK.

[Recording crest-stage gage]

Location.—Lat 34°10′08″, long 92°05′12″, in NW¼SE¼ sec. 26, T. 6 S., R. 10 W., on right bank 20 ft upstream from culvert on U.S. Highway 79, 0.9 mile upstream from tributary, 1.9 miles southwest of Watson Chapel, 2.1 miles upstream from mouth, and 6 miles southwest of Pine Bluff.

Drainage area.—0.79 sq mi.

Gage-height record.—Digital-recorder tape punched at 5-minute intervals and crest stages.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 67 cfs and by flow-through-culvert measurements at 95 cfs, 119 cfs, 122 cfs, and 231 cfs.

Maximums.—May 1968: Discharge, 231 cfs 0340 hours May 14 (gage height, 6.56 ft, from digital-recorder tape, 6.57 ft, from crest-stage gage).

1961 to April 1968: Discharge, 160 cfs Apr. 26, 1964 (gage height, 5.62 ft); gage height, 5.76 ft Feb. 23, 1962.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	0.45	9	0.55	17	19	25	0.20
2	.40	10	25	18	3.9	26	.30
3	.35	11	15	19	0.75	27	.25
4	.35	12	2.6	20	.40	28	.20
5	.25	13	40	21	.40	29	.15
6	.25	14	40	22	.40	30	.10
7	.20	15	2.2	23	.35	31	.10
8	.25	16	8.2	24	.30		

Monthly mean discharge	cubic feet per second	5.25
Runoff	inches	7.67
Runoff	acre-feet	323

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 12			*May 13*—Cont.			*May 14*—Cont.		
2400	2.40	2.0	1600	4.69	104	0340	6.56	231
May 13			1700	4.49	92	0400	6.36	216
0300	2.40	2.0	1900	3.72	50	0500	5.16	133
0930	2.38	1.7	2100	3.28	31	0600	4.28	79
1000	2.51	4.2	2400	2.96	18	0800	3.47	39
1100	3.11	23	*May 14*			1000	3.14	25
1200	4.44	89	0100	2.94	17	1400	2.82	13
1300	5.10	129	0130	3.07	22	1800	2.63	7.2
1330	5.30	142	0200	3.97	63	2000	2.56	5.4
1400	5.14	132	0230	5.06	127	2400	2.50	4.0
1500	4.81	112	0300	5.78	174			

(90) 7–3641.2 BAYOU BARTHOLOMEW NEAR STAR CITY, ARK.

Location.—Lat 33°57′38″, long 91°47′07″, in SW¼ sec. 1, T. 9 S., R. 7 W., on downstream side of bridge on State Highway 11, 3½ miles northeast of Star City, 10.7 miles upstream from Deep Bayou, and at mile 285.7.

Drainage area.—215 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 153.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1941.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 1,950 cfs 0600 hours May 20 (gage height, 23.00 ft).
1941 to April 1968: Discharge, 4,000 cfs May 2, 1958 (gage height, 26.29 ft).

Cooperation.—Records furnished by Corps of Engineers.

(91) 7–3641.25 CANE CREEK AT STAR CITY, ARK.

[Crest-stage station]

Location.—Lat 33°57′16″, long 91°50′32″, in SE¼SE¼ sec. 5, T. 9 S., R. 7 W., on left bank 25 ft downstream from bridge on State Highway 81, 0.9 mile north of junction with State Highway 11 in Star City, and 2.2 miles upstream from Dry Fork Creek.

Drainage area.—4.9 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 260 cfs and by field estimate at 1,500 cfs.

Maximums.—May 1968: Discharge, 980 cfs May 17 (gage height, 8.29 ft).
1962 to April 1968: Discharge, 1,500 cfs May 2, 1964 (gage height, 9.09 ft).

(92) 7–3641.5 BAYOU BARTHOLOMEW NEAR McGEHEE, ARK.

Location.—Lat 33°37′40″, long 91°26′45″, in NE¼SW¼ sec. 30, T. 12 S., R. 3 W., near center of stream on downstream side of pier of bridge on State Highway 4, 2.7 miles west of McGehee, 17.5 miles downstream from Ables Creek, and at mile 200.5.

Drainage area.—592 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 121.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1941.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 4,120 cfs 0400 hours May 26 (gage height, 20.21 ft).
1930 to April 1968: Discharge, 6,870 cfs May 11, 1958 (gage height, 24.49 ft).

Cooperation.—Gage-height record furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, May 1968

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
1	800	9	760	17	2,200	25	4,080
2	760	10	740	18	2,920	26	4,120
3	760	11	702	19	3,310	27	4,080
4	800	12	720	20	3,590	28	4,030
5	820	13	820	21	3,750	29	3,950
6	820	14	1,010	22	3,910	30	3,870
7	820	15	1,290	23	3,990	31	3,790
8	800	16	1,580	24	4,030		

Monthly mean discharge	cubic feet per second	2,246
Runoff	inches	4.37
Runoff	acre-feet	138,100

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, May 1968

Hour	Gage height	Discharge	Hour	Gage height	Discharge	Hour	Gage height	Discharge
May 11			*May 18*—Cont.			*May 25*—Cont.		
2400	8.03	702	2400	17.41	3,160	2400	20.12	4,080
May 12			*May 19*			*May 26*		
1200	8.14	720	1200	17.90	3,310	0400	20.21	4,120
2400	8.35	760	2400	18.28	3,470	1200	20.20	4,120
May 13			*May 20*			2400	20.17	4,120
1200	8.64	800	1200	18.62	3,590	*May 27*		
2400	9.13	900	2400	18.90	3,710	1200	20.13	4,080
May 14			*May 21*			2400	20.08	4,080
1200	9.69	1,010	1200	19.14	3,750	*May 28*		
2400	10.30	1,140	2400	19.33	3,830	1200	20.02	4,030
May 15			*May 22*			2400	19.93	3,990
1200	10.89	1,290	1200	19.52	3,910	*May 29*		
2400	11.48	1,430	2400	19.67	3,950	1200	19.84	3,950
May 16			*May 23*			2400	19.73	3,910
1200	12.15	1,580	1200	19.80	3,990	*May 30*		
2400	12.94	1,790	2400	19.91	4,030	1200	19.63	3,870
May 17			*May 24*			2400	19.50	3,830
1200	15.51	2,200	1200	20.00	4,030	*May 31*		
2400	15.86	2,600	2400	20.04	4,080	1200	19.38	3,790
May 18			*May 25*			2400	19.22	3,710
1200	16.87	2,950	1200	20.10	4,080			

(93) 7-3641.65 UPPER CUTOFF CREEK NEAR MONTICELLO, ARK.

[Crest-stage station]

Location.—Lat 33°44′20″, long 91°44′51″, in NW¼SW¼ sec. 20, T. 11 S., R. 6 W., on left bank 30 ft upstream from bridge on State Highway 83, 1.4 miles upstream from Rat Creek, 2.4 miles south of Coleman, and 8.0 miles north of Monticello.

Drainage area.—18 sq mi.

Gage-height record.—Crest stages only.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 430 cfs, and extended above by logarithmic plotting.

Maximums.—May 1968: Discharge, 1,100 cfs May 17 (gage height, 10.03 ft, from floodmark).

1963 to April 1968: Discharge, 1,150 cfs Apr. 26, 1964 (gage height, 10.10 ft, from floodmark).

(94) 7-3641.9 BAYOU BARTHOLOMEW AT WILMOT, ARK.

Location.—Lat 33°04′08″, long 91°34′42″, in SW¼ sec. 1, T. 19 S., R. 5 W., on downstream side of bridge on State Highway 52, 0.9 mile northwest of Wilmot, 19.7 miles upstream from Overflow Creek, and at mile 98.7.

Drainage area.—1,170 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 85.17 ft above mean sea level, datum of 1929, supplementary adjustment of 1941.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maximums.—May 1968: Discharge, 5,000 cfs 2400 hours May 31 (gage height, 21.90 ft). For flood period: Discharge, 5,150 cfs 0800 hours June 4 (gage height, 22.16 ft).

1925 to April 1968: Discharge, 8,000 cfs May 23, 1958 (gage height, 26.16 ft).

Cooperation.—Records furnished by Corps of Engineers.

(95) 7–3642.6 HANKS CREEK NEAR HAMBURG, ARK.
[Crest-stage station]

Location.—Lat 33°10′10″, long 91°49′40″, in NW¼SE¼ sec. 4, T. 18 S., R. 7 W., on left bank 35 ft downstream from bridge on U.S. Highway 82, 0.7 mile west of junction with State Highway 81, and 4.5 miles southwest of Hamburg.

Drainage area.—14 sq mi.

Gage-height record.—Stage-discharge relation defined by current-meter measurements below 520 cfs and extended above by logarithmic plotting.

Maximums.—May 1968: Discharge, 550 cfs May 17 (gage height, 8.91 ft).
1962 to April 1968: Discharge, 1,300 cfs Feb. 10, 1966 (gage height, 10.46 ft).

SELECTED REFERENCES

Bailey, J. F., and Ray, H. A., 1966, Definition of stage-discharge relation in natural channels by step-backwater analyses: U.S. Geol. Survey Water-Supply Paper 1869–A, 24 p.

Beaber, H. C., and Rostvedt, J. O., 1965, Floods of March 1964 along the Ohio River: U.S. Geol. Survey Water-Supply Paper 1840–A, 158 p.

Benson, M. A., and Dalrymple, Tate, 1967, General field and office procedures for indirect discharge measurements: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. A1, 30 p.

Bodhaine, G. L., 1968, Measurement of peak discharge at culverts by indirect methods: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. A3, 60 p.

Boner, F. C., and Stermitz, Frank, 1967, Floods of June 1964 in northwestern Montana: U.S. Geol. Survey Water-Supply Paper 1840–B, 242 p.

Dalrymple, Tate, and Benson, M. A., 1967, Measurement of peak discharge by the slope-area method: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. A2, 12 p.

Davidian, Jacob, Carrigan, P. H., Jr., and Shen, John, 1962, Flow through openings in width constrictions: U.S. Geol. Survey Water-Supply Paper 1369–D, 122 p.

Hulsing, Harry, 1967, Measurement of peak discharge at dams by indirect methods: U.S. Geol. Survey Techniques Water Resources Inv., book 3, chap. A5, 29 p.

Matthai, H. F., 1967, Measurement of peak discharge at width contractions by indirect methods: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. A4, 44 p.

Patterson, J. L., 1964, Magnitude and frequency of floods in the United States, Part 7, Lower Mississippi River basin: U.S. Geol. Survey Water-Supply Paper 1681, 636 p.

Smith, R. P., 1964, Floods of April-May 1958 in Louisiana and adjacent states: U.S. Geol. Survey Water-Supply Paper 1660–A, 149 p.

U.S. Army Corps of Engineers, 1968, Report on Arkansas-Louisiana flood May-June 1968: Vicksburg, Miss. U.S. Army Engineer Dist. Pub., 33 p.

U.S. Environmental Science Services Administration, 1968a, Climatological data, Arkansas: U.S. Weather Bur., v. 73, nos. 3, 4, and 5, p. 25–59.

———1968b, Hourly precipitation data, Arkansas: U.S. Weather Bur., v. 18, no. 3, p. 1–7; no. 4, p. 1–8; and no. 5, p. 1–11.

U.S. Geological Survey, 1964, Floods of January-February 1959 in Ohio and adjacent states: U.S. Geol. Survey Water-Supply Paper 1750–A, 296 p.

Yost, I. D., 1963, Floods of April-June 1957 in Texas and adjacent states: U.S. Geol. Survey Water-Supply Paper 1652–B, 321 p.

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