

MISSISSIPPI
STATE GEOLOGICAL SURVEY

WILLIAM CLIFFORD MORSE
Director



BULLETIN 66

NORTH MISSISSIPPI FLOODS
OF
FEBRUARY 1948

PREPARED UNDER THE DIRECTION OF
IRVING E. ANDERSON

By

THE DISTRICT OFFICE, WATER RESOURCES BRANCH
UNITED STATES GEOLOGICAL SURVEY

In cooperation with
Mississippi State Geological Survey

UNIVERSITY, MISSISSIPPI
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LETTER OF TRANSMITTAL

Office of the Mississippi Geological Survey,
University, Mississippi,
May 8, 1948.

To His Excellency,
Governor Fielding Lewis Wright, Chairman, and
Members of the Geological Commission

Gentlemen:

Herewith is Bulletin 66, North Mississippi Floods of February 1948—a joint report of the U. S. Geological Survey and the Mississippi State Geological Survey by Irving E. Anderson of the Jackson office of the Federal Survey. It is a detailed presentation of the records of stream gage heights and discharges during January and February 1948.

An Interpretation of these records and their significance has been attempted under the heading, "Foreword," by the State Geologist.

Very truly yours,

William Clifford Morse
Director and State Geologist

NORTH MISSISSIPPI FLOODS OF FEBRUARY 1948

FOREWORD

WILLIAM CLIFFORD MORSE

North Mississippi Floods of February 1948, the present excellent report (Bulletin 66), was prepared by the United States Geological Survey in cooperation with the Mississippi State Geological Survey at the suggestion of Irving E. Anderson, District Engineer, in the Jackson office, and under his direction. The area of the report embraces, at least in part, the Yazoo River Basin, the Big Black River Basin, the Yokahockany River Basin, the Pearl River Basin, the Noxubee River Basin, and the Tombigbee River Basin—in short the whole of North Mississippi, except for a bit of the Tennessee River Basin in Tishomingo County and adjoining county borders. It is a splendid presentation of the data collected by the author and his able staff, and of the data of the Sardis Reservoir and of the Arkabutla Reservoir collected by the Corps of Engineers of the Mississippi River Commission in the Vicksburg office—all nonetheless by Engineers.

Although the report embraces this vast area of North Mississippi, approximately 6,500 square miles of "Delta" and 19,500 square miles of "Upland," or a total of 26,000 square miles, the author discusses the restriction of flood crests only on the lower Coldwater, on the lower Tallahatchie, and on the Yazoo—for the only flood control possible under the Engineering plan is below each dam. Perhaps flood control of the whole area could be profitably considered. It must, of necessity, include soil erosion and soil conservation.

When the White Man came, the beautiful hills and valleys of North Mississippi were protected everywhere by a plant covering, mostly forest and grass. Although these hills had been formed by erosion, the process under natural conditions was so slow that the virgin soil was held intact. Then the White Man ruthlessly removed both trees and grass from slopes that should have remained forever covered and protected. Erosion, removal of the soil, followed rapidly—and just as rapidly deposition of this eroded material at lower levels, either on valley floors or in bodies of water. Nor is the end yet in sight—save for one sad end, namely, the destruction of the soils, and starvation.

Of the moisture that falls as precipitation: 1) a part runs off the surface of the land, 2) a part sinks into the earth, and 3) a part

evaporates into the air. The quantity of water that follows each of these different routes depends on a number of factors. The quantity that runs off depends largely on the steepness of the slope and on the plant cover. Other things being equal, the steeper the slope, the greater and faster the run-off; and the thicker the vegetative cover, the more water that will slowly sink into the ground for future beneficial ground-water supply.

Now that the removal of the vegetative covering, either forest or grass, from the slopes has permitted most of the rainfall to run off and hence to erode the soil and produce floods, the only logical procedure left is to restore this covering to the slopes, and thereby reduce the proportion of run-off and hence the amount of soil erosion, and hence, too, the amount of deposition of sediment upon the bottom farms, in the streams, and in the reservoirs, which must, of necessity, otherwise eventually silt up.

In the region of unconsolidated formations many of the old corn fields and cotton fields on the slopes have been abandoned, thus allowing the soil and subsoil and the deeper unconsolidated material further to wash away, with no retardation whatsoever. For it must be remembered that the transporting (eroding) power of a stream (T) depends on velocity (V), that it varies as the sixth power of the velocity, mathematically expressed as $T \propto V^6$. Therefore, if a stream rolling along a pebble of one cubic unit in size have its velocity doubled it will now roll one 64 cubic units in size (i. e., $2 \times 2 \times 2 \times 2 \times 2 \times 2$, or 64); or, if it have its velocity tripled, it will now roll one 729 cubic units in size (i. e., $3 \times 3 \times 3 \times 3 \times 3 \times 3$, or 729); and velocity, in turn, depends chiefly on the steepness of the slope and the volume of the water.

By preparing a strip, the width depending on the steepness of the slope, sowing it to grass, skipping a strip of like width, and preparing and seeding a second strip, and so on, half the whole slope can be seeded to grass in one season, with the minimum amount of soil erosion and the maximum amount of water absorption. Next season the intermediate strips can, in like manner, be prepared and seeded, or planted to forest—all without expense or the expenditure of public funds. Then Mississippi will have beautiful luxuriant pasture lands on slopes, and, on a thousand hills, herds that need no other food for most months of the year, streams of clear waters, low lands that need no other type of flood protection.

When that happy day comes, the millennium will be here, 70 percent of the people of North Mississippi, those of the uplands, will have flood protection (and soil conservation), and the present 30 percent, those of the lowlands, will have more effective flood control. All stand to gain.

Nor is the plan thus presented the mere figment of a dream of a geologist, trained though he may be and successful though he may be in advocating for years the use of native lime (limestone, CaCO_3) for fertilizer and in searching for years for favorable structures in Mississippi for oil—resulting finally in the discovery of Tinsley Dome by one of his men and the initiation of an industry now yielding the State more than 17,000 dollars a day in severance tax.

From the incomplete estimates available to the District Engineer at the time of the submission of his report, the damage to the county roads in the "Delta" counties (Leflore, \$200,000) seems to be of the same order of magnitude as the damage to the county roads of the "Upland" counties (Carroll, \$110,000; Prentiss, \$175,000), despite the artificial retardation of flood water flow below the Arkabutla dam and below the Sardis dam—as stated before, the only place where flood control can be effected by the Engineering plan.

From the nearly complete data of the Army Engineers of the Mississippi River Commission themselves, they estimate (General Description) that by withholding the waters of the area of 1,000 square miles above the Arkabutla dam and by withholding the waters of the area of 1,545 square miles above the Sardis dam, the flood crest of the 1948 flood waters of the "Delta" was restricted one foot in height—but it was a major "Delta" flood nonetheless. It was a demonstration from High Heaven of the inadequacy of the dam system still under construction.

But even without this one-foot restriction, so Greenwood city officials claim, an additional foot rise would have been taken care of by spilling towards the west—in short, that very little protection was afforded. They state, further, that a downpour in the upland head-water area of Big Sand Creek, only 6 or 7 miles toward the east, furnishes that stream sufficient water to raise the Yazoo River one foot in Greenwood when it is above the 30-foot stage (Datum 92.07) and to raise it even 5 or 6 feet when it is at low-water stage. And, further, that Palusha Creek, the next Yazoo branch south, develops the same type of flash flood. In short, a flash flood on Big Sand Creek

produces an increase of the Yazoo River flood at Greenwood of one foot at the 30-some-odd-foot stage—the measure of flood prevention (one foot) claimed by the engineers for the Arkabutla and Sardis reservoirs.

In this connection, it should be mentioned that the excavation of a broad shallow spillway across the narrow neck of land, two-tenths of a mile in width, just east of the junction of the U. S. Highways 82 and 49 E, would shunt much of the Tallahatchie River flood waters away from the City of Greenwood—might even take care of some of the highest of the Yalobusha waters. Indeed a low highway trestle along this stretch of roadway would, in itself no doubt, have prevented a flood crest rise of at least one foot as revealed by the flood waters on the wheels of the automobiles passing along this stretch during the flood (Figure 5). The spillway, too, would have further aided in flood control at this place. A low transverse concrete structure (wall) such as that across Pass a Loutre at the Head of the Passes of the Mississippi River, would insure the flow of these rivers past the city at low water.

Had the Grenada dam and the Enid dam been completed at the time of the February 1948 flood, and had the waters of the combined areas of 2,110 square miles above these two dams been held back, such retardation should have prevented a flood crest rise of nearly one foot (the amount claimed for the Sardis and Arkabutla areas of 2,545 square miles), or a total of nearly two feet for all four areas—but even such a future combined restriction would still leave a major “Delta” flood possibility.

In all these attempts at flood control the engineer loses sight of the fundamental geologic fact that the flood plain of a stream belongs to the stream; that it was constructed by the stream for its own use. When it has no further need of the plain the stream will have cut its channel so deep that it can no longer cover the flood plain, which thus becomes a terrace. Then, and then only, is it wholly safe for Man's occupancy. Prior to that time he may use it, but always at his own hazard. Levees may help; reservoirs may help; but always is the possibility of a flood, which becomes more destructive the greater the magnitude of these artificial structures.

The 20-foot embankment across the combined flood plains of the Scioto and Olentangy Rivers in Columbus, Ohio, constructed by the Baltimore and Ohio Southwestern Railroad engineers at the instance of the City Council in the elimination of street-railroad grade

crossings, held back the 1913 flood waters until they shot through the street underpasses as the water out of a fire-hose nozzle, sweeping an area a few blocks in width and several blocks in length and nearly 100 inhabitants to their death.

Nelsonville, Ohio, was swept by the flood waters of the same storm largely because the Hocking Valley Railway filled a long trestle approach and replaced an open truss bridge across the Hocking River by a solid-side girder bridge. Other cities in other river systems of the same state suffered enormous losses during this same 1913 flood, because Man was occupying the flood plains of the streams. At many of these places the engineer was directed to build these structures, to make these changes, but even so, the engineer must recognize the danger of floods and the risk of innocent blood on his hands.

Even though the small city waterworks reservoir dam broke in the flood of 1935, the property damage was largely due to Man's construction of railway embankments and highway embankments across the flood plain of the stream in the city of Hornell, New York. And the flash flood resulting from this dam failure failed to remove any of the thick accumulated sediments in the reservoir bottom, save for a straight narrow trench precisely the width of the breach in the dam—even under these ideal conditions of flushing. Also Man's use of the flood plain opposite the mouth of Watkins Glen in the same state, exposed him to the flood waters of the same storm.

Anywhere, the engineer should remember, one small tree precariously perched on a crumbling bank upstream from a highway or railway bridge may initiate a jam that would so hold back the flood waters as to require an auxiliary opening of even greater magnitude than the maximum size, so carefully computed by slide rule from accurate gaging station discharge records, of the original passageway. As a matter of fact the inhabitants of Crowder correctly attribute the levee break at that place to a tree jam, rather than to the unharnessed flood waters of the Yocona. And, as a matter of fact too, a June visit to the repaired levee shows the low waters of the combined discharge channel, the McIvor Drainage Canal, to be eating away one-fourth to one-third the repaired levee. And, when the drainage waters further kill the trees between the two levee banks, real jams will have begun to form—jams damming back waters of a magnitude beyond any predictable computation. Fortunately, the Crowder break did not approach in soil destructivity the Avalon-Petacowa Creek destruction.

Even here in Mississippi auxiliary flood-time openings would probably have saved the bridge approaches at numerous places, as at Grenada, for example, and would have prevented such maximum flood heights. They would probably have prevented also the loss of the long fill of State Highway 7 just north of Avalon, although the damage here was by the flood waters of Petacowa Creek, scarcely more than a mile from its debouchure from the Bluffs, rather than by the flood waters of the unharnessed Yalobusha River.

But even a major "Delta" flood has some advantages. The untold thousands of tons of fine sediments enrich the soil as they did for ages before the coming of the White Man. Even after only a short tenure by the White Man, the crop yield between the River and the Levee is estimated to be 50 percent more than it is within the Levee.

The British Army Engineers, recognizing this fact, constructed dams across the Nile, not to prevent flooding, but to permit flooding at more frequent intervals. Unfortunately the Mississippi River system floods come at "unannounced" times whereas the Nile floods follow definite seasonal dates.

A book review of "Our Plundered Planet" (Fairfield Osborn. Boston: Little-Brown, 1948) by William Voight of the Pan American Union in the May 14, 1948, issue of Science, which came after most of the foregoing portion of this Foreword was written, states that "It was Fairfield Osborn's father who, some 20 years ago, called our present era the end of the Age of Mammals." The reviewer further states that, "As the only animal that deliberately destroys the environment on which its survival depends, man has used his magnificently developed forebrain to heighten the effectiveness of that destruction. . . . Nearly everywhere man's destruction of vegetation has disrupted the hydrologic cycle, with resultant soil erosion, floods, siltation, falling water tables, vanishing wild life—falling human living standards."

University, Mississippi, May 8, 1948 Subsequently revised

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NORTH MISSISSIPPI FLOODS OF FEBRUARY 1948

IRVING E. ANDERSON

INTRODUCTION

North Mississippi streams reached new record maximum stages and discharges as a result of heavy general rains February 12-14, 1948, following a period of snowmelt and rainfall. Along the Tombigbee River main stem the flood of February 1948 was exceeded only by that of April 1892, concerning which only very limited information is available. At Columbus the discharge was 30.1 second-feet per square mile from a drainage area of 4,490 square miles. All previously recorded maxima were exceeded in both the East and West Forks of Tombigbee River, on the upper Tallahatchie River, and on the Yalobusha and Yocona Rivers. The lower Coldwater, the lower Tallahatchie, and the Yazoo Rivers, below Sardis and Arkabutla Flood Control Reservoirs, did not reach new record flood heights because of the holding back by those reservoirs of the flow from about 2,000 square miles of contributory area.

The flood of February 1948 was the greatest since systematic determinations of streamflow were initiated in 1900 at Columbus on the Tombigbee River. Stage records at this location were started by the U. S. Weather Bureau in 1890, and although they cover the maximum known flood of 1892, definite knowledge of this earliest flood is for the Columbus and Aberdeen stations only, and covers only flood heights. The first streamflow records on the Tombigbee River Basin above Aberdeen or on the tributaries of the Tombigbee were started in 1928. There is evidence of several floods prior to that date, all which appear to have been caused by local rains. Some streamflow records on the upper tributaries of the Yazoo River have been kept since 1928, but in general no complete coverage was instituted until about 1939. In the lower Yazoo River Basin, streamflow records on the Yazoo River are available for two periods (1908-13 and 1928-48), totalling 27 years. However, stage records only have been kept on the Yazoo River at Greenwood and on the Tallahatchie River at Swan Lake since 1904 and on the Yazoo River at Yazoo City since 1885. On the basis of these records, supplemented by information obtained from local residents, it is evident that the February 1948 flood was the maximum known on the upper Tallahatchie,



Figure 1.—Tombigbee floods overtop joint U. S. Highways 45 E and 82, West Columbus, February 16, 1948. Courtesy Pruitt Studio, Columbus.



Figure 2.—Joint U. S. Highway 45 E and 82 west of Columbus, overtopped for 3 miles by Tombigbee River. February 15, 1948. Courtesy Pruitt Studio, Columbus.

on the Yalobusha, and on the Yocona Rivers. Inasmuch as only moderate rainfall took place in the Coldwater River Basin no record-breaking floods occurred in that area. The February 1948 flood was well covered in all river basins in North Mississippi with respect to both streamflow and precipitation.

Flood damage in the affected area was high and transportation facilities by highway and rail were interrupted at many places. Joint U. S. Highways 45E and 82 were overflowed by as much as three feet for a distance of three miles west of Columbus (Figures 1 and 2). State Highway 25 was closed at Aberdeen and Amory. Flood waters of the East Fork Tombigbee River washed out two relief bridges on U. S. Highway 78 west of Fulton. U. S. Highway 45E was closed in the vicinity of Nettleton, because of overflow by the West Fork of Tombigbee River. Three of the five principal highways into Grenada were closed by overflow by the Yalobusha River: U. S. Highway 51 and State Highway 7 to the north, and State Highway 8 to the east. Disruption of transportation over county highways closed schools for many days. More than 500 county bridges were damaged or destroyed by flood waters. Hundreds of families were evacuated from their homes when rivers overflowed the lowlands. The Lowndes County Chapter, American Red Cross, evacuated a total of 565 families in that county at a cost of \$15,400. Agricultural damage was not high because the flood came prior to the planting season. Preliminary estimates by the Weather Bureau indicate the damages may have exceeded three million dollars in the Yazoo Basin alone.

ADMINISTRATION, PERSONNEL, AND ACKNOWLEDGMENTS

This report was prepared for and in cooperation with the Mississippi State Geological Survey, Dr. William Clifford Morse, Director, by the Water Resources Branch, U. S. Geological Survey, C. G. Paulsen, Chief Hydraulic Engineer. The work incident to its preparation was done by personnel of the Jackson district office under the supervision of Irving E. Anderson, District Engineer.

Acknowledgments are made to the United States Weather Bureau offices in Jackson and Vicksburg, Miss., New Orleans, La., Mobile, Ala., and Atlanta, Ga., for their cooperation in making available precipitation records for numerous stations and to the Vicksburg, Miss., and Mobile, Ala., districts of the Corps of Engineers,

for making available base data at stream flow stations not included in the program maintained by the U. S. Geological Survey.

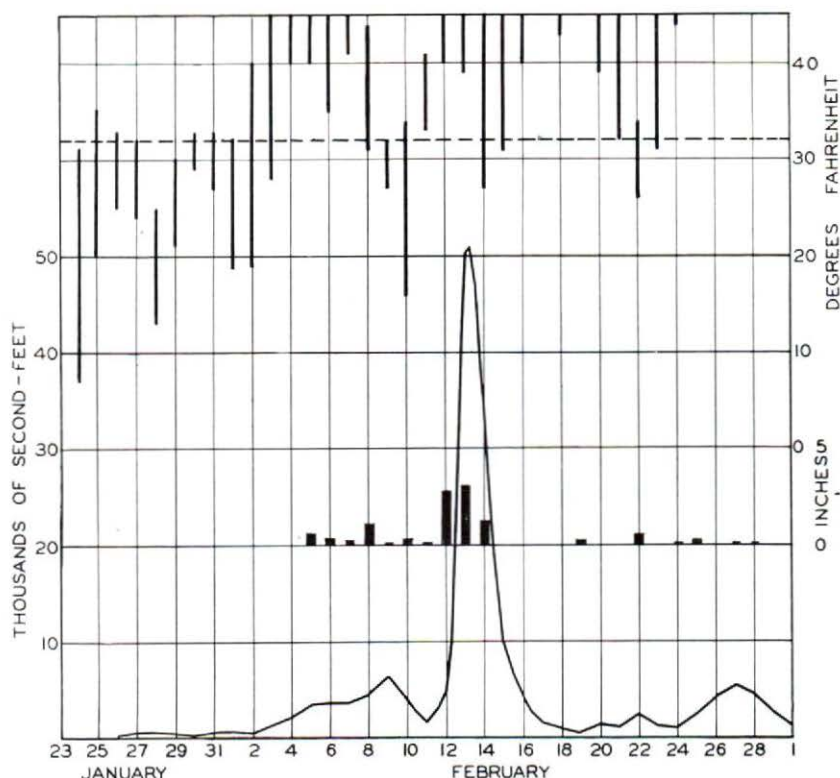


Plate 2.—Graph of the mean daily discharge in thousands of second-feet of the Tallahatchie River at Etta; and of the Temperature range in degrees Fahrenheit and of the Precipitation in inches at Pontotoc. January-February 1948 flood.

GENERAL DESCRIPTION OF STORM AND FLOOD

The area covered by this report on the floods of February 1948 in North Mississippi embraces the Yazoo River Basin, the Big Black River Basin, the Pearl River Basin, and the Tombigbee River Basin in Mississippi (Plate 1).

The extraordinary stages and discharges of the streams in these drainage basins during the floods of February 1948 were produced by a series of unusual weather events beginning as early as January

20, 1948. The immediate cause of the floods was the rain storm of February 12-14, 1948.

Between January 20 and February 10, 1948, periodic precipitation produced moderate stages in all streams in northeast Mississippi, and saturated the soil thus setting the stage for the record-breaking floods of February. During this period precipitation averaged about 3 inches over the entire region. An unusual feature of the precipitation was the nearly 6 inches of snow that fell in all of north Mississippi on January 23. This snow was accompanied by a severe cold wave several days in length, so that when the next rains came late in January, practically all of the snow contributed directly to the run-off. The lowest temperature during the cold wave was at Canton, where a minimum of -7° F. was recorded (Plate 2).

During the period February 12-14, rain totalling from 3 inches to more than 9 inches fell over the basins of the Big Black, Tombigbee, and Yazoo Rivers causing record-breaking floods on most of the streams within these basins. The heaviest rainfall was in a northeast-southwest belt including the head waters of the Yalobusha, Yocona, Tallahatchie, and Tombigbee Rivers. The center of the flood-producing rain was in the vicinity of Ripley where over 9 inches fell during the three-day period. Rains in excess of 6 inches fell over a wide area, roughly over the entire Tombigbee River Basin above the Forks, the Yocona River Basin, the upper Tallahatchie River Basin, and much of the Yalobusha River Basin. Resulting flood-flows on these streams were of such magnitude as to exceed maximum-recorded floods by more than 50 percent at some stations. On the Tallahatchie River at Etta the maximum flow was 97.3 second-feet per square mile from an area of 526 square miles on February 13th. The previous maximum recorded was 62.0 second-feet per square mile on January 8, 1946. Similarly on the East Fork Tombigbee River near Fulton, from an area of 605 square miles, the maximum was 78.8 second-feet per square mile on February 14 as compared to the previous maximum of 49.6 second-feet per square mile on March 29, 1944.

Although the flood of April 1892 exceeded that of February 1948 at Aberdeen and Columbus on the Tombigbee River, only general inferences can be drawn as to the comparative magnitudes of these floods along the two forks of the Tombigbee. The average precipitation over the North Mississippi Division as determined by the Weather Bureau was 6.84 inches for April 1892 as compared with 10.30

inches during February 1948. Study of the isohyetal map (Plate 1) shows for the latter period a rapid diminution of the total rainfall below the junction of the East and West Forks. The higher aggregate rainfall in 1948 and its relatively high concentration on the upper basin suggests that the 1948 flood was perhaps higher than that of

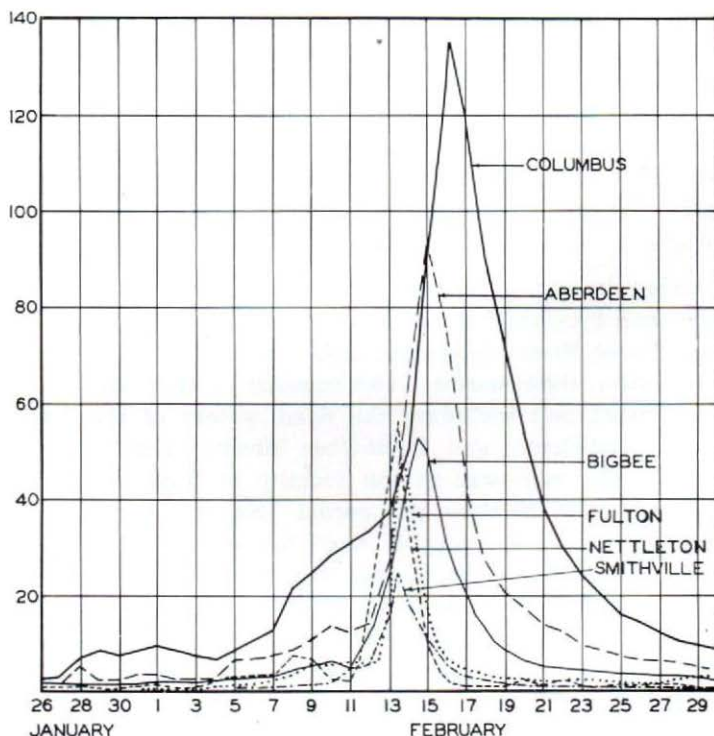


Plate 3.—Graphs of discharge in thousands of second-feet for river measurement stations in Tombigbee River basin. January-February 1948 flood.

1892 in the Tombigbee Basin above the forks, and in the Tallahatchie River Basin.

The lower Coldwater, the lower Tallahatchie, and the Yazoo Rivers reached notable maxima, notwithstanding the operation of Sardis Reservoir on Tallahatchie River and Arkabutla Reservoir on Coldwater River. At the peak of the flood, the Sardis Reservoir was receiving an inflow of 95,000 second-feet which was impounded. Thus an area of 1,545 square miles was non-contributory to the flood in the lower Tallahatchie River and in the Yazoo River. Similarly,



Figure 3.—Homes in Aberdeen invaded by floodwaters of Tombigbee River. Courtesy Valhardt Studio, Aberdeen.



Figure 4.—St. Louis-San Francisco Railway trestle just east of Aberdeen undermined by floodwaters of Tombigbee River. March 14, 1948. Courtesy Valhardt Studio, Aberdeen.

much of the run-off from the tributary area of Coldwater River above Arkabutla Reservoir was withheld. The maximum inflow into the reservoir has been computed as 56,000 second-feet while the maximum outflow during the flood period was only 4,280 second-feet. The operation of these two reservoirs is estimated by the Corps of Engineers to have prevented an additional one-foot flood crest at Greenwood on the Yazoo River.



Figure 5.—National Guardsmen assisting traffic through floodwaters of Yazoo River on joint U. S. Highway 49 E and 82 and over levee west of Greenwood. Courtesy Lambs Studio, Greenwood.

STAGES AND DISCHARGES AT RIVER-MEASUREMENT STATIONS DURING FLOOD PERIOD

Continuous records of streamflow were obtained at twenty-eight river-measurement stations during the flood period as part of the continuous program of stream-flow investigations in Mississippi. Except as noted in the station description, these stations are a part of the cooperative program carried on by the Mississippi Geological Survey and the U. S. Geological Survey.

The basic data, systematically collected at river-measurement stations, consist of records of stage, measurement of discharge, and



Figure 6.—Floodwaters of Tallahatchie River enter store in New Albany, February 13, 1948. Courtesy Longs Studio, New Albany.



Figure 7.—Floodwaters of Yazoo River creep toward business district of Yazoo City, March 12, 1948. Courtesy Jackson Clarion-Ledger.

general information, useful in determining the daily flow. The records of stage are obtained either from the direct reading of a non-recording gage or by a water-stage recorder. Measurements of discharge are usually made by a current meter, the methods of use of which are outlined in standard engineering textbooks.

The data presented in the following tables comprise for each river-measurement station a description of the station, a table showing the daily mean stages and discharges through the period starting late in January, 1948, and ending early in March, 1948, and, for certain stations where the rapidity of the rise warrants, a table showing the gage heights and discharges at indicated times during the periods of major flood flows.

The tables of daily mean gage heights and discharges start with late January, because at that time the rivers were at a low stage, and practically the entire flow was the result of ground-water run-off. Rains in early March resulted in fairly high stages which were maintained until late in the month, because of the cumulative effect of intermittent rain during the month. The period for which records are given is sufficient to show the rise and fall of the streams during the flood.

TOMBIGBEE RIVER BASIN

EAST FORK TOMBIGBEE RIVER NEAR FULTON

LOCATION.—Lat. $34^{\circ} 15' 55''$, long. $88^{\circ} 26' 42''$, in SE 1/4, Sec. 27, T. 9 S., R. 8 E. Chickasaw meridian, at bridge on U. S. Highway 78, 2 miles west of Fulton, and 6 1/4 miles upstream from Mantachie Creek Canal. Datum of

gage is 242.70 feet above mean sea level, datum of 1929.

DRAINAGE AREA.—605 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 20,100 second-feet and extended to peak discharge by velocity-area study. Gage heights used to half-tenths between 15.0 and 15.5 feet and between 16.4 and 18.0 feet; hundredths between 15.5 and 16.4 feet; and tenths below 15.0 feet and above 18.0 feet.

MAXIMA.—1948: Discharge, 47,700 second-feet 5 a. m. Feb. 14 (gage-height, 22.24 feet).

1928-47: Discharge 30,000 second-feet Mar. 29, 1944 (gage height, 18.82 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	6.71	477	5	13.38	1,320	15	18.49	18,700	24	15.03	2,160
27	7.91	597	6	14.20	1,620	16	16.65	7,660	25	14.71	1,900
28	10.32	837	7	14.86	2,040	17	16.06	4,770	26	14.59	1,840
29	9.43	747	8	15.69	3,270	18	15.66	3,180	27	14.81	1,970
30	8.91	697	9	16.21	5,450	19	15.26	2,370	28	15.23	2,370
31	10.59	867	10	16.33	6,050	20	14.89	2,040	29	15.70	3,300
Feb.			11	15.99	4,420	21	14.85	1,970	Mar.		
1	11.32	943	12	16.13	5,070	22	14.98	2,120	1	15.40	2,580
2	11.09	910	13	18.84	22,000	23	15.15	2,260	2	15.21	2,310
3	11.35	954	14	21.58	43,300						
4	12.33	1,080									

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 11			Feb. 13			Feb. 15		
6 a. m.	16.06	4,720	6 p. m.	20.72	34,500	6 a. m.	19.26	23,900
Noon	15.96	4,290	9 p. m.	21.51	41,400	9 a. m.	18.78	20,400
6 p. m.	15.91	4,090	12 p. m.	21.99	45,900	Noon	18.36	17,800
12 p. m.	15.88	4,030	Feb. 14			3 p. m.	17.99	15,400
Feb. 12			3 a. m.	22.21	47,700	6 p. m.	17.67	13,300
6 a. m.	16.00	4,450	5 a. m.	22.24	47,700	9 p. m.	17.41	11,800
Noon	16.12	5,000	6 a. m.	22.23	47,700	12 p. m.	17.19	10,600
6 p. m.	16.22	5,500	9 a. m.	22.07	46,800	Feb. 16		
12 p. m.	16.43	6,650	Noon	21.82	44,100	6 a. m.	16.86	8,650
Feb. 13			3 p. m.	21.48	41,400	Noon	16.60	7,400
3 a. m.	16.59	7,400	6 p. m.	21.08	37,800	6 p. m.	16.42	6,400
6 a. m.	16.98	9,400	9 p. m.	20.66	34,500	12 p. m.	16.27	5,750
9 a. m.	17.61	13,000	12 p. m.	20.21	30,500	Feb. 17		
Noon	18.47	18,400	Feb. 15			Noon	16.06	4,720
3 p. m.	19.67	26,700	3 a. m.	19.73	26,700	12 p. m.	15.86	3,890

EAST FORK TOMBIGBEE RIVER AT BIGBEE

LOCATION.—Lat. 34° 00' 40", long. 88° 30' 50", in SW 1/4 NE 1/4 Sec. 25 T. 12 S., R. 7 E. Chickasaw meridian at bridge on State Highway 6, 0.2 mile upstream from St. Louis-San Francisco Railway bridge, 0.5 mile south-east of Bigbee, and 3.7 miles upstream from confluence with West Fork. Datum of gage is 190.00 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—1,194 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Two or more gage readings daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 22,500 second-feet and extended to peak discharge by velocity-area study. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 52,800 second-feet 2 a. m. Feb. 15 (gage height, 24.92 feet, from graph based on gage readings).

1945-47: Discharge observed, 36,500 second-feet Feb. 11, 1946 (gage height, 22.52 feet).

Flood in 1926 reached a stage of 24.2 feet, from information by Corps of Engineers.

REMARKS.—Base data collected by Corps of Engineers; occasional discharge measurement made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	5.05	945	4	6.75	2,060	14	23.91	45,800	23	9.75	4,470
27		1,200	5	7.50	2,580	15	24.33	48,700	24	9.35	4,120
28		1,400	6	7.90	2,880	16	21.41	31,200	25	9.20	3,950
29		1,600	7	8.35	3,280	17	19.07	21,200	26	9.00	3,780
30	6.40	1,780	8	10.16	4,810	18	16.54	13,800	27	8.85	3,610
31	6.70	1,990	9	11.21	5,730	19	14.12	9,060	28	8.55	3,440
Feb.			10	11.12	5,650	20	12.37	6,880	29		3,250
1	6.85	2,060	11	12.26	6,770	21	11.05	5,550	Mar.		
2	6.85	2,060	12	15.55	11,900	22	10.45	5,010	1	8.25	3,120
3	6.65	1,920	13	19.90	24,700						

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 8			Feb. 13			Feb. 16		
8 a. m.	9.55	4,300	4 a. m.	18.67	19,800	4 a. m.	22.38	35,900
4 p. m.	10.92	5,460	8 a. m.	19.24	21,600	8 a. m.	21.70	32,400
12 p. m.	11.20	5,730	Noon	19.75	23,800	Noon	21.27	30,400
Feb. 9			4 p. m.	20.55	27,200	4 p. m.	20.91	28,500
Noon	11.22	5,730	8 p. m.	21.17	29,900	8 p. m.	20.54	26,700
12 p. m.	11.20	5,730	12 p. m.	22.05	33,900	12 p. m.	20.20	25,400
Feb. 10			Feb. 14			Feb. 17		
Noon	11.10	5,640	4 a. m.	22.85	38,300	8 a. m.	19.63	23,000
6 p. m.	11.03	5,550	8 a. m.	23.59	43,200	4 p. m.	18.63	19,500
12 p. m.	11.19	5,730	Noon	24.16	47,400	12 p. m.	17.72	16,700
Feb. 11			4 p. m.	24.58	50,400	Feb. 18		
8 a. m.	11.91	6,380	8 p. m.	24.80	52,000	8 a. m.	16.47	14,800
4 p. m.	12.56	7,080	12 p. m.	24.90	52,800	4 p. m.	16.15	12,800
12 p. m.	13.45	7,990	Feb. 15			12 p. m.	15.25	10,700
Feb. 12			2 a. m.	24.92	52,800	Feb. 19		
4 a. m.	13.93	8,660	8 a. m.	24.77	52,000	Noon	14.07	8,950
8 a. m.	14.55	9,700	4 p. m.	24.19	47,400	12 p. m.	13.09	7,630
Noon	15.37	11,100	12 p. m.	23.16	40,700	Feb. 20		
4 p. m.	16.45	13,300				Noon	12.29	6,780
8 p. m.	17.27	15,600				12 p. m.	11.77	6,290
12 p. m.	17.97	17,600						

TOMBIGBEE RIVER AT ABERDEEN

LOCATION.—Lat. 33° 49' 14", long. 88° 31' 07", in N 1/2 Sec. 27, T. 14 S., R. 19 W. Huntsville meridian, at bridge on U. S. Highway 45, 1.3 miles downstream from former site at St. Louis-San Francisco Railway bridge, 1.5 miles east of Aberdeen, 2 miles downstream from Mattuby Creek, and 13½ miles upstream from McKinley Creek. Datum of gage is 154.71 feet above

mean sea level, datum of 1929 (Corps of Engineers bench mark). Auxiliary staff gage 4.4 miles downstream, at datum 1.80 feet lower.

DRAINAGE AREA.—2,210 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph and twice-daily readings of auxiliary staff gage.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Fall as determined from auxiliary gage used as a factor. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 97,000 second-feet 12 m. Feb. 15; gage height, 42.04 feet 7 p. m. Feb. 15.

1928-47: Discharge, 68,600 second-feet Mar. 30, 1944; gage height, 40.99 feet Mar. 30, 1944.

Stage known, 44.8 feet, former site, present datum, Apr. 20, 1892.

REMARKS.—Auxiliary gage not used Jan. 26 to Feb. 2, Feb. 10-15, 17-22, 24; U. S. Weather Bureau gage at St. Louis-San Francisco Railway bridge used to determine falls during these periods.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	7.24	734	3	12.10	2,980	12	31.19	14,800	22	29.75	12,400
27	8.24	1,050	4	12.76	3,140	13	36.51	28,500	23	28.17	9,530
28	15.45	4,860	5	18.79	6,320	14	40.37	64,200	24	26.11	8,320
29	12.54	2,370	6	20.04	6,390	15	41.90	93,700	25	24.12	7,310
30	11.27	2,210	7	21.42	7,360	16	41.37	74,200	26	22.32	6,840
31	14.44	3,940	8	24.77	8,800	17	39.61	43,000	27	20.82	6,350
Feb.			9	27.63	10,400	18	37.87	27,800	28	19.84	6,010
1	14.88	3,780	10	29.86	13,600	19	35.86	21,000	29	18.11	5,240
2	13.00	2,720	11	29.82	12,200	20	33.54	17,500	Mar.		
						21	31.54	14,000	1	15.65	4,190

TOMBIGBEE RIVER AT COLUMBUS

LOCATION.—Lat. 33° 29' 21", long. 88° 25' 57", in NW 1/4 Sec. 20, T. 18 S., R. 18 W. Huntsville meridian, in Columbus, 1,400 feet upstream from Gulf, Mobile & Ohio Railroad bridge, 2.3 miles upstream from Luxapalila Creek, and 6.7 miles downstream from Tibbee River. Datum of gage is 128.91 feet above mean sea level, datum of 1929, supplementary adjustment of 1941. Auxiliary staff gage 3.7 miles upstream at different datum.

DRAINAGE AREA.—4,490 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 122,000 second-feet. Gage heights used to tenths. Fall as determined from twice-daily readings of auxiliary gage used as a factor.

MAXIMA.—1948: Discharge, 135,000 second-feet 9 p. m. Feb. 16 (gage height, 38.32 feet).

1900-12, 1928-47: Discharge 134,000 second-feet Mar. 31 and Apr. 1, 1944; maximum gage height, 37.64 feet Mar. 31, 1944.

Maximum stage known, 42.6 feet (present datum) Apr. 8, 1892.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	5.13	2,760	3	9.71	7,360	12	27.19	33,500	22	26.84	30,600
27	5.37	3,240	4	8.81	6,440	13	28.16	37,100	23	24.10	24,900
28	9.09	7,150	5	10.50	8,380	14	30.62	49,400	24	21.48	20,300
29	10.35	8,720	6	12.28	10,200	15	34.97	88,000	25	19.42	16,400
30	10.23	7,560	7	14.07	12,600	16	37.89	127,000	26	17.11	14,600
31	11.24	8,760	8	18.47	21,500	17	37.87	119,000	27	15.00	12,500
Feb.			9	21.96	25,000	18	36.42	90,000	28	13.32	10,700
1	11.41	9,560	10	24.74	28,500	19	34.60	72,800	29	12.04	9,800
2	10.91	8,390	11	26.53	31,000	20	32.40	54,800	Mar.		
						21	29.66	39,400	1	10.74	8,960

MACKEYS CREEK NEAR DENNIS

LOCATION.—Lat. 34° 32', long. 88° 20', in Sec. 26, T. 6 S., R. 9 E. Chickasaw meridian, at bridge on county highway between Booneville and Dennis, 6 miles southwest of Dennis, and about 10 miles upstream from confluence with Browns Creek. Datum of gage is 333.47 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—66 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Two or more staff gage readings daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 2,400 second-feet. Gage heights used to half tenths between 2.5 and 3.2 feet; hundredths below and tenths above these limits.

MAXIMA.—1948. Discharge, 3,520 second-feet 12 m. Feb. 13 (gage height, 22.08 feet).

1938-47: Discharge, 2,460 second-feet Feb. 15, 1939 (gage height, 17.8 feet, from graph based on gage readings).

REMARKS.—Base data collected by Corps of Engineers; occasional discharge measurements made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	2.29	71	4	2.70	128	14	16.57	2,220	23	2.92	161
27	2.45	92	5	2.99	178	15	7.58	661	24	2.75	136
28	2.43	89	6	3.35	239	16	4.15	339	25	2.88	161
29	2.43	89	7	3.50	253	17	3.46	239	26	2.93	169
30	2.44	91	8	5.60	471	18	2.97	169	27	3.85	292
31	2.50	99	9	4.18	339	19	2.88	161	28	3.30	225
Feb.			10	3.16	262	20	3.49	253	29	2.85	152
1	2.52	99	11	2.53	241	21	3.13	262	Mar.		
2	2.39	84	12	12.32	1,430	22	3.31	225	1	2.71	128
3	2.45	92	13	21.59	3,400						

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 11			Feb. 13			Feb. 14		
Noon	3.02	178	4 a. m.	21.58	3,400	6 p. m.	14.40	1,720
6 p. m.	3.70	279	8 a. m.	22.00	3,500	9 p. m.	12.90	1,420
12 p. m.	5.90	495	Noon	22.08	3,520	12 p. m.	11.20	1,110
Feb. 12			4 p. m.	22.07	3,520	Feb. 15		
4 a. m.	7.80	655	8 p. m.	21.48	3,380	4 a. m.	9.50	855
8 a. m.	9.90	911	12 p. m.	20.46	3,120	8 a. m.	8.10	686
Noon	11.80	1,220	Feb. 14			Noon	7.16	599
4 p. m.	14.10	1,660	6 a. m.	19.00	2,760	4 p. m.	6.55	551
8 p. m.	17.28	2,350	Noon	17.00	2,280	8 p. m.	5.90	495
12 p. m.	20.15	3,050				12 p. m.	5.30	445

BULL MOUNTAIN CREEK AT TREMONT

LOCATION.—Lat. 34° 14' 20", long. 88° 16' 15", in NE 1/4 SW 1/4 Sec. 5, T. 10 S., R. 10 E. Chickasaw meridian, at bridge on U. S. Highway 78, 0.7 mile northwest of Tremont, 1½ miles upstream from Cypress Creek, and 3 1/4 miles upstream from Chubby Creek. Datum of gage is 317.39 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—120 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Graph based on once-daily staff gage readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 6,000 second-feet and extended to peak discharge by velocity-area study. Gage heights used to tenths between 3.9 and 6.5 feet; half-tenths below and above these limits.

MAXIMA.—1948: 11,600 second-feet 10 a. m. Feb. 13 (gage height, 9.45 feet, from graph based on gage readings).

1943-47: Discharge observed, 11,600 second-feet Jan. 8, 1946 (gage height 9.47 feet).

REMARKS.—Base data collected by Corps of Engineers; occasional discharge measurements made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
25	3.63	123	3	4.31	201	13	9.08	8,830	23	5.72	412
26	3.64	123	4	4.74	255	14	8.40	4,890	24	5.44	362
27	3.92	152	5	5.29	346	15	7.47	2,120	25	5.43	362
28	4.04	164	6	5.54	378	16	6.92	998	26	5.38	362
29	4.22	188	7	5.90	446	17	6.52	574	27	5.22	330
30	4.50	227	8	6.50	574	18	6.19	501	28	4.75	269
31	4.94	284	9	6.68	690	19	5.90	446	29	4.80	269
Feb.			10	6.80	845	20	6.30	521	Mar.		
1	4.66	255	11	7.56	2,340	21	6.10	482	1	5.02	299
2	4.41	214	12	7.84	3,020	22	6.01	464			

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 10			Feb. 13			Feb. 14		
Noon	6.73	745	4 a. m.	9.00	8,100	6 p. m.	8.25	4,200
12 p. m.	7.06	1,200	8 a. m.	9.40	11,200	12 p. m.	7.93	3,250
Feb. 11			10 a. m.	9.45	11,600	Feb. 15		
Noon	7.68	2,600	Noon	9.40	11,200	8 a. m.	7.53	2,220
12 p. m.	7.83	2,970	4 p. m.	9.17	9,200	4 p. m.	7.34	1,800
Feb. 12			8 p. m.	8.95	7,750	12 p. m.	7.16	1,400
Noon	7.73	2,720	Feb. 14			Feb. 16		
6 p. m.	7.76	2,720	6 a. m.	8.59	5,700	Noon	6.91	950
12 p. m.	8.34	4,600	Noon	8.40	4,800	12 p. m.	6.72	690

BULL MOUNTAIN CREEK NEAR SMITHVILLE

LOCATION.—Lat. 34° 05', long. 88° 24', in SE 1/4 Sec. 30, T. 11 S., R. 9 E. Chickasaw meridian, at bridge on State Highway 25, 0.8 mile upstream from the Mississippian Railway bridge, 1.1 miles north of Smithville, and 3½ miles from mouth. Datum of gage is 234.81 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—335 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Two or more wire-weight gage readings daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 12,600 second-feet and extended to peak discharge by velocity-area study. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 24,800 second-feet 11 p. m. Feb. 13 (gage height, 15.25 feet, from graph based on gage readings).

1940-47: Discharge observed, 21,900 second-feet Mar. 29, 1944 (gage height, 14.9 feet).

REMARKS.—Base data collected by Corps of Engineers; occasional discharge measurements made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
24	3.76	252	2	5.44	521	12	11.67	5,330	22	7.42	1,080
25	3.86	268	3	5.19	484	13	13.72	14,400	23	7.34	1,050
26	4.12	300	4	5.24	484	14	14.60	19,600	24	7.08	978
27	4.66	397	5	5.76	603	15	13.30	10,900	25	6.64	815
28	5.29	502	6	6.68	846	16	11.62	5,300	26	6.38	756
29	5.34	502	7	7.12	978	17	10.45	3,140	27	6.24	701
30	5.39	502	8	8.56	1,560	18	9.67	2,200	28	6.12	675
31	5.56	500	9	8.61	1,560	19	8.44	1,480	29	5.82	603
Feb.			10	9.40	1,990	20	7.76	1,240	Mar.		
1	5.64	560	11	10.17	2,760	21	7.46	1,120	1	5.66	581

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 10			Feb. 13			Feb. 15		
Noon	9.52	2,050	4 a. m.	12.56	7,630	6 a. m.	13.68	12,800
12 p. m.	9.74	2,200	8 a. m.	12.84	8,330	Noon	13.33	10,500
Feb. 11			Noon	13.66	12,800	6 p. m.	12.98	9,100
Noon	10.16	2,750	4 p. m.	14.37	17,900	12 p. m.	12.47	7,310
12 p. m.	10.62	3,330	8 p. m.	15.08	23,700	Feb. 16		
Feb. 12			11 p. m.	15.25	24,800	Noon	11.52	4,950
6 a. m.	11.34	4,560	Feb. 14			12 p. m.	10.95	4,910
Noon	11.72	5,350	3 a. m.	15.09	23,700	Feb. 17		
6 p. m.	12.14	6,230	6 a. m.	14.94	21,900	Noon	10.41	3,030
12 p. m.	12.36	7,010	Noon	14.57	19,500	12 p. m.	10.02	2,500
			6 p. m.	14.27	17,100			
			12 p. m.	13.97	14,900			

WEST FORK TOMBIGBEE RIVER NEAR NETTLETON

LOCATION.—Lat. 34° 03' 32", long. 88° 37' 40", in NW 1/4 Sec. 12, T. 12 S., R. 6 E. Chickasaw meridian, at bridge on U. S. Highway 45, 1.9 miles downstream from Tallabinnela Creek, and 2.1 miles south of Nettleton. Datum of gage is 194.01 feet above mean sea level, datum of 1929 (Corps of Engineers, bench mark).

DRAINAGE AREA.—617 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements to 41,500 second-feet. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 56,300 second-feet 12:30 a. m. Feb. 14 (gage height, 30.74 feet).

1939-47: Discharge, 48,400 second-feet Mar. 28, 1944 (gage height, 31.18 feet, present datum).

Flood of Dec. 24, 1926, reached a stage of 32.5 feet, present datum, from floodmark.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26		160	5	17.55	3,200	14	29.55	38,300	23	12.74	1,060
27	13.07	1,370	6	18.07	3,500	15	25.52	12,000	24	12.21	881
28	13.37	1,320	7	17.66	3,300	16	17.45	3,160	25	13.51	1,360
29	10.80	458	8	23.72	7,560	17	14.34	1,680	26	14.48	1,740
30	11.43	664	9	22.90	6,940	18	13.01	1,170	27	15.09	1,980
31	13.68	1,440	10	16.01	2,440	19	12.33	916	28	13.98	1,550
Feb.			11	17.02	2,990	20	15.34	2,090	29	11.92	777
1	12.98	1,170	12	25.97	15,800	21	13.41	1,320	Mar.		
2	11.26	588	13	29.96	43,200	22	16.13	2,470	1	11.09	533
3	12.89	1,130									
4	15.14	2,180									

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 10			Feb. 12			Feb. 14		
6 a. m.	17.08	2,900	9 p. m.	28.87	28,800	9 p. m.	28.49	24,700
Noon	15.34	2,060	12 p. m.	29.14	31,000	12 p. m.	28.15	22,000
6 p. m.	14.50	1,740	Feb. 13			Feb. 15		
12 p. m.	15.08	1,980	3 a. m.	29.28	33,400	3 a. m.	27.77	18,900
Feb. 11			6 a. m.	29.61	37,200	6 a. m.	27.32	15,700
6 a. m.	15.50	2,140	9 a. m.	29.63	37,200	9 a. m.	26.72	12,900
Noon	15.40	2,100	Noon	29.90	41,500	Noon	26.09	10,900
3 p. m.	16.45	2,550	3 p. m.	30.20	46,300	3 p. m.	25.24	9,250
6 p. m.	19.15	4,100	6 p. m.	30.43	50,000	6 p. m.	23.90	7,760
9 p. m.	20.63	5,020	9 p. m.	30.66	56,300	9 p. m.	22.50	6,500
12 p. m.	21.54	5,700	12 p. m.	30.73	56,300	12 p. m.	21.09	5,380
Feb. 12			Feb. 14			Feb. 16		
3 a. m.	22.19	6,260	12:30 a. m.	30.74	56,300	4 a. m.	19.43	4,220
6 a. m.	23.74	7,560	3 a. m.	30.61	54,100	8 a. m.	18.13	3,440
9 a. m.	24.94	8,850	6 a. m.	30.30	48,100	Noon	17.15	2,950
Noon	26.39	11,000	9 a. m.	30.00	43,000	4 p. m.	16.43	2,550
3 p. m.	27.75	18,900	Noon	29.56	37,200	8 p. m.	15.84	2,260
6 p. m.	28.56	25,700	3 p. m.	29.16	32,200	12 p. m.	14.35	1,700
			6 p. m.	28.81	27,700			

BUTTAHATCHEE RIVER NEAR CALEDONIA

LOCATION.—Lat. 33° 42' 10", long. 88° 20' 50", in SW 1/4 Sec. 5, T. 16 S., R. 17 W. Huntsville meridian, at bridge on county road, 600 feet downstream from Elbethel Creek, 2 miles northwest of Caledonia, and 19 miles upstream from mouth. Datum of gage is 198.59 feet above mean sea level (levels by Corps of Engineers).

DRAINAGE AREA.—823 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Two or more wire-weight gage readings daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements to 18,900 second-feet. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 24,200 second-feet Feb. 15 (gage height, 17.50 feet, from graph based on gage readings).

1928-32, 1939-47: Discharge observed, 30,700 second-feet Mar. 30, 1944; gage height observed, 17.62 feet Jan. 9, 1946.

Flood in July 1916 reached a stage of about 22.5 feet, from information by local residents.

REMARKS.—Base data furnished by Corps of Engineers; occasional discharge measurements made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Discharge	Day	Gage height	Discharge	Day	Gage height	Discharge	Day	Gage height	Discharge
Jan.			Feb.			Feb.			Feb.		
23	4.36	674	1	6.38	1,570	10	10.64	4,470	20	19.35	4,270
24	4.48	708	2	6.43	1,570	11	12.29	6,440	21	9.55	3,560
25	4.69	780	3	5.81	1,260	12	13.37	8,290	22	8.89	3,060
26	4.86	860	4	5.68	1,210	13	13.64	8,740	23	8.62	2,860
27	5.16	990	5	6.00	1,360	14	16.21	18,100	24	8.47	2,800
28	5.28	1,030	6	6.28	1,510	15	17.27	23,200	25	8.21	2,610
29	5.99	1,360	7	7.48	2,190	16	16.11	17,700	26	7.99	2,490
30	6.12	1,410	8	8.61	2,860	17	14.11	10,000	27	7.76	2,370
31	6.06	1,410	9	9.72	3,640	18	12.52	6,720	28	7.57	2,250
						19	11.29	5,210	29	7.25	2,010

TIBBEE RIVER NEAR TIBBEE

LOCATION.—Lat. 33° 32' 17", long. 88° 38' 00", in SW 1/4 Sec. 4, T. 19 N., R. 16 E. Choctaw meridian, at bridge on old State Highway 25, 560 feet upstream from Gulf, Mobile & Ohio Railroad bridge, 0.7 mile north of Tibbee, and 4½ miles upstream from Magee Creek. Datum of gage is 154.07 feet above mean sea level, datum of 1929, supplementary adjustment of 1941 (levels by Corps of Engineers).

DRAINAGE AREA.—928 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements to 37,600 second-feet. Affected by backwater Feb. 16-20. Gage heights used to half-tenths below 5.1 feet and tenths above.

MAXIMA.—Discharge: 48,900 second-feet 3 p.m. Feb. 14 (gage height, 28.49 feet).

1928-30, 1939-47: Discharge, 49,700 second-feet July 4, 1940 (gage height, 29.16 feet).

Stage known, 31.5 feet in December 1926, from information by local residents.

NOXUBEE RIVER NEAR BROOKSVILLE

LOCATION.—Lat. 33° 13' 30", long 88° 42' 10", in center of Sec. 19, T. 16 N., R. 16 E. Choctaw meridian, at bridge on county road, a quarter of a mile downstream from Shotbag Creek, 4½ miles downstream from Octoc Creek, and 7 miles west of Brooksville.

DRAINAGE AREA.—440 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—One wire-weight gage reading daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 8,600 second-feet Feb. 11, 15; gage height, 19.74 feet Feb. 15.

1940-42, 1944-47: Discharge, 18,900 second-feet July 9, 1940 (gage height, 21.4 feet, from graph based on gage readings).

REMARKS.—Base data collected by Corps of Engineers; occasional discharge measurements made and records of discharge computed by U. S. Geological Survey.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
27	4.23	236	4	7.69	577	13	19.14	6,220	22	8.16	634
28	5.35	345	5	7.81	588	14	19.34	6,920	23	8.28	646
29	7.49	555	6	8.23	634	15	19.64	8,100	24	8.36	658
30	9.95	887	7	8.95	738	16	19.14	6,220	25	9.29	780
31	10.55	987	8	16.33	2,870	17	18.64	4,760	26	8.57	684
Feb.			9	18.49	4,500	18	17.92	3,360	27	8.09	622
1	10.71	1,000	10	19.58	8,100	19	16.53	2,320	28	7.42	545
2	10.23	919	11	19.65	8,100	20	12.92	1,430	29	6.52	455
3	9.31	780	12	19.31	6,920	21	8.62	684	Mar.		
									1	5.95	405

NOXUBEE RIVER AT MACON

LOCATION.—Lat. 33° 06' 05", long. 88° 33' 40", in NE 1/4 Sec. 4, T. 14 N., R. 17 E. Choctaw meridian, at bridge on U. S. Highway 45, in Macon, and 1 mile downstream from Gulf, Mobile & Ohio Railroad bridge. Datum of gage is 142.38 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—812 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Gage heights used to tenths between 8.8 feet and 27.5 feet; half-tenths below and above those limits.

MAXIMA.—1948: Discharge, 10,600 second-feet 4:30 p.m. Feb. 13 (gage height 27.93 feet).

1928-32, 1938-47: Discharge, 25,000 second-feet July 10, 1940 (gage height, 30.28 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	8.47	512	4	11.30	1,210	14	27.70	9,600	23	12.13	1,400
27	10.20	934	5	11.55	1,280	15	27.29	8,200	24	11.74	1,310
28	16.00	2,280	6	11.69	1,310	16	26.86	7,100	25	12.91	1,580
29	15.62	2,190	7	13.40	1,690	17	26.36	6,260	26	12.59	1,510
30	15.75	2,230	8	22.52	4,050	18	26.06	5,900	27	11.49	1,260
31	17.51	2,640	9	25.98	6,070	19	25.30	5,240	28	10.79	1,090
Feb.			10	27.56	9,000	20	23.86	4,530	29	10.09	908
1	16.49	2,400	11	27.56	9,000	21	21.56	3,710	Mar.		
2	13.83	1,780	12	27.74	9,800	22	16.12	2,300	1	9.49	758
3	12.14	1,400	13	27.80	10,000						

PEARL RIVER BASIN

PEARL RIVER AT EDINBURG

LOCATION.—Lat. 32° 47', long. 89° 20', in SW 1/4 Sec. 13, T. 11 N., R. 9. E. Choctaw meridian, at bridge on State Highway 16 in Edinburg, 1,100 feet downstream from Hooper Mill Creek, and 3 miles upstream from Rice Creek. Datum of gage is 341.67 feet above mean sea level, datum of 1929, supplementary adjustment of 1941.

DRAINAGE AREA.—898 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 9,270 second-feet 10 p.m. Feb. 13 (gage height, 23.37 feet).

1928-47: Discharge, 31,400 second-feet Mar. 8, 1935 (gage height 26.20 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
25	6.90	554	3	11.12	1,370	12	22.57	7,830	22	18.18	3,920
26	7.02	570	4	10.96	1,350	13	23.13	8,670	23	17.35	3,530
27	7.60	673	5	11.50	1,460	14	23.05	8,490	24	16.54	3,120
28	8.76	894	6	12.09	1,610	15	22.64	7,830	25	15.66	2,780
29	8.99	932	7	12.94	1,820	16	22.19	7,250	26	14.81	2,430
30	10.06	1,150	8	15.32	2,660	17	21.70	6,630	27	14.11	2,190
31	10.95	1,350	9	18.14	3,870	18	21.20	6,100	28	13.50	2,000
Feb.			10	19.16	4,500	19	20.49	5,450	29	12.99	1,850
1	11.58	1,490	11	20.89	5,810	20	19.79	4,910	Mar.		
2	11.54	1,460				21	18.94	4,320	1	12.58	1,740

YOKAHOCKANY RIVER NEAR KOSCIUSKO

LOCATION.—Lat. 33° 02', long. 89° 35', in T. 14 N., R. 7 E. Choctaw meridian, at bridge on State Highway 35, 2 miles south of Kosciusko, and 28 miles upstream from mouth. Datum of gage is 374.34 feet above mean sea level, datum of 1929, supplementary adjustment of 1941 (levels by Corps of Engineers).

DRAINAGE AREA.—314 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used. Gage heights used to tenths between 5.9 and 12.6 feet, half-tenths below and above these limits.

MAXIMA.—1948: Discharge, 5,370 second-feet 1 a.m. Feb. 11 (gage height, 14.24 feet).

1938-47: Discharge, 11,600 second-feet Feb. 11, 1946 (gage height, 16.21 feet).

Flood in December 1932 reached a stage of about 17 feet (authority, Corps of Engineers).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	4.92	221	4	5.93	346	14	13.60	4,190	23	7.34	567
27	6.82	513	5	7.83	659	15	13.73	4,460	24	6.46	433
28	9.59	1,100	6	7.66	640	16	13.60	4,190	25	6.68	465
29	9.64	1,100	7	7.91	714	17	12.68	2,860	26	6.56	449
30	8.83	876	8	11.74	2,130	18	10.46	1,440	27	6.16	388
31	9.06	958	9	13.29	3,670	19	6.98	515	28	5.89	346
Feb.			10	13.90	4,750	20	6.70	465	29	5.46	287
1	8.20	739	11	14.11	5,160	21	6.97	515	Mar.		
2	6.75	481	12	13.64	4,280	22	7.93	678	1	5.23	257
3	5.90	346	13	13.43	3,920						

BIG BLACK RIVER BASIN

BIG BLACK RIVER AT WEST

LOCATION.—Lat. 33° 11' 45", long. 89° 46' 30", in NW 1/4 Sec. 3, T. 15 N., R. 5 E. Choctaw meridian, at bridge on county highway 0.2 mile east of West, 5 miles upstream from Jordan Creek, and 7 miles downstream from Zilpha Creek. Datum of gage is 249.74 feet above mean sea level, datum of 1929, supplementary adjustment of 1941 (levels by Corps of Engineers).

DRAINAGE AREA.—985 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Two or more wire-weight gage readings daily or graph based on those readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 31,800 second-feet Feb. 13, 14 (gage height, 22.29 feet).

1936-47: Discharge, 43,600 second-feet Mar. 30, 1944 (gage height, 22.36 feet).

REMARKS.—Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	6.60	891	3	12.54	2,250	12	20.35	18,200	21	16.32	4,800
27	8.40	1,200	4	12.40	2,220	13	22.06	30,200	22	15.56	3,920
28	11.08	1,830	5	12.86	2,410	14	22.13	30,200	23	14.66	3,220
29	11.33	1,890	6	12.93	2,410	15	20.97	22,000	24	13.26	2,570
30	11.80	2,040	7	13.55	2,690	16	20.06	16,500	25	12.55	2,290
31	12.75	2,370	8	16.82	5,620	17	19.36	13,100	26	12.08	2,130
Feb.			9	19.56	14,000	18	18.53	9,600	27	11.26	1,890
1	12.87	2,410	10	20.18	17,000	19	17.71	7,740	28	10.70	1,710
2	12.78	2,370	11	20.13	16,500	20	17.02	5,980	29	9.68	1,460

BIG BLACK RIVER AT PICKENS

LOCATION.—Lat. 32° 52' 45", long. 89° 58' 05", in SW 1/4 Sec. 14, T. 12 N., R. 3 E. Choctaw meridian at bridge on U. S. Highway 51 (old), half a mile southeast of Pickens, 6 miles downstream from Seneasha Creek, and 6 miles upstream from Cypress Creek. Datum of gage is 196.26 feet above mean sea level, datum of 1929, supplementary adjustment of 1941 (U. S. Department of Agriculture bench mark, levels by Corps of Engineers).

DRAINAGE AREA.—1,460 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used. Gage heights used to half-tenths between 17.8 and 18.2 feet, and above 18.8 feet; hundredths between 18.2 and 18.8 feet; tenths below 17.8 feet.

MAXIMA.—1948: Discharge, 35,600 second feet 7 a.m. Feb. 15 (gage height, 20.52 feet).

1938-47: Discharge, 37,900 second-feet Feb. 11, 1946 (gage height, 20.85 feet).

Maximum stage known, 23.7 feet Dec. 29, 1926 from information by local residents. Floods of 1892 and May 1930 reached a stage of about 23.5 feet from information by local residents.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	8.26	1,130	4	11.36	2,340	14	20.09	30,000	23	17.64	6,500
27	8.54	1,230	5	11.82	2,500	15	20.43	34,900	24	17.14	5,500
28	11.71	2,460	6	12.12	2,620	16	19.75	25,400	25	16.57	4,930
29	12.59	2,830	7	12.42	2,740	17	19.05	16,800	26	15.63	4,330
30	12.28	2,700	8	15.24	4,130	18	18.74	13,400	27	14.12	3,580
31	12.34	2,700	9	17.35	6,100	19	18.61	12,100	28	12.73	2,880
Feb.			10	17.92	7,320	20	18.39	9,910	29	11.74	2,460
1	12.21	2,660	11	18.74	13,600	21	18.24	8,680	Mar.		
2	11.86	2,540	12	18.99	16,300	22	18.03	7,700	1	11.00	2,180
3	11.52	2,380	13	19.25	19,200						

YAZOO RIVER BASIN

TALLAHATCHIE RIVER AT ETTA

LOCATION.—Lat. 34° 28', long. 89° 13', in SW 1/4 Sec. 8, T. 7 S., R. 1 E. Chickasaw meridian, at bridge on State Highway 30, three-quarters of a mile northeast of Etta, 3 3/4 miles upstream from Puskus Creek, and 13 miles west of New Albany. Datum of gage is 278.48 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

DRAINAGE AREA.—526 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph except Feb. 6-13, when graph was based on twice-daily wire-weight gage readings.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements below 31,700 second-feet and extended to peak discharge on basis of area-velocity study. Gage heights used to half-tenths between 16.7 and 19.7 feet, and below 4.8 feet; tenths between 4.8 and 16.7 feet, and above 19.7 feet.

MAXIMA.—1948: Discharge, 51,200 second-feet 3 p.m. Feb. 13 (gage height, 23.70 feet).

1938-47: Discharge, 32,600 second-feet Jan. 8, 1946 (gage height, 21.59 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	3.16	234	4	11.35	2,260	14	21.59	32,400	22	12.30	2,500
27	5.96	835	5	15.22	3,590	15	18.44	11,100	23	7.92	1,280
28	6.21	881	6	15.56	3,850	16	16.00	4,640	24	6.82	1,020
29	4.76	552	7	15.44	3,710	17	10.08	1,870	25	12.28	2,530
30	4.76	552	8	16.30	4,580	18	6.75	1,020	26	15.97	4,320
31	5.76	789	9	17.27	6,440	19	5.80	789	27	16.88	5,590
Feb.			10	15.25	3,800	20	9.25	1,620	28	16.44	4,650
1	5.81	789	11	11.74	2,330	21	8.10	1,330	29	13.42	2,990
2	5.12	638	12	16.73	7,770				Mar.		
3	8.53	1,420	13	22.95	44,400				1	7.49	1,180

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 11			Feb. 13			Feb. 15		
6 a. m.	11.32	2,190	9 a. m.	23.29	47,200	6 a. m.	19.02	13,500
Noon	9.92	1,780	Noon	23.61	50,200	Noon	18.36	9,900
6 p. m.	12.30	2,500	3 p. m.	23.70	51,200	6 p. m.	17.83	8,180
12 p. m.	13.83	3,000	6 p. m.	23.66	51,200	12 p. m.	17.36	6,700
Feb. 12			9 p. m.	23.52	49,200	Feb. 16		
6 a. m.	14.78	3,400	12 p. m.	23.26	47,200	6 a. m.	16.91	5,590
Noon	16.56	4,970	Feb. 14			Noon	16.29	4,520
3 p. m.	17.51	7,120	4 a. m.	22.79	42,400	6 p. m.	15.33	3,650
6 p. m.	18.47	10,300	8 a. m.	22.23	37,000	12 p. m.	13.56	2,930
9 p. m.	19.42	16,000	Noon	21.59	32,000	Feb. 17		
12 p. m.	20.44	23,000	4 p. m.	20.98	27,200	6 a. m.	11.48	2,250
Feb. 13			8 p. m.	20.40	23,000	Noon	9.76	1,750
3 a. m.	21.50	31,200	12 p. m.	9.78	18,800	6 p. m.	8.48	1,420
6 a. m.	22.49	39,700				12 p. m.	7.65	1,210

TALLAHATCHIE RIVER AT SARDIS DAM, NEAR SARDIS

LOCATION.—Lat. 34° 23' 58", long. 89° 47' 24", in NW 1/4 Sec. 11, T. 8 S., R. 6 W. Chickasaw meridian, 340 feet downstream from outlet of tunnel of Sardis Dam and 7½ miles southeast of Sardis. Datum of gage is 194.43 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers, War Department).

DRAINAGE AREA.—1,545 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used.

MAXIMA.—1948: Discharge, 3,350 second-feet Feb. 13 (gage height, 11.1 feet). 1940-47: Discharge, 5,860 second-feet May 24, 1946 (gage height, 15.00 feet).

REMARKS.—Flow completely regulated by Sardis Reservoir since Aug. 1, 1940. Records of daily discharge not adjusted for change in contents in Sardis Reservoir. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Jan.			Feb.			Feb.		
26	9.63	2,540	31	9.28	2,380	4	9.03	2,220	9	9.18	2,330
27	9.63	2,540	Feb.			5	8.19	1,790	10	9.44	2,430
28	9.89	2,710	1	9.22	2,330	6	8.16	1,790	11	9.75	2,650
29	9.52	2,490	2	9.17	2,330	7	8.47	1,950	12	10.58	3,080
30	9.34	2,380	3	9.15	2,330	8	9.02	2,220	13	9.28	1,180

Note.—No flow after Feb. 13.

TALLAHATCHIE RIVER NEAR LAMBERT

LOCATION.—Lat. 34° 10' 50", long. 90° 12' 55", in SW 1/4 Sec. 29, T. 27 N., R. 1 E. Choctaw meridian, at county highway bridge a quarter of a mile downstream from Coldwater River, 4 miles southwest of Lambert, and 24½

miles downstream from point of diversion of Panola-Quitman floodway. Datum of gage is 123.83 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers). Auxiliary gage at Shine Turner Bridge $5\frac{3}{4}$ miles downstream, at datum 2.66 feet higher.

DRAINAGE AREA.—1,980 square miles (authority, Corps of Engineers); does not include 2,600 square miles of upper Tallahatchie and Yocona Rivers, entire flow from which is diverted through Panola-Quitman floodway).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements throughout range used. Fall as determined from auxiliary water-stage recorder graph used as a factor. Gage heights, used to hundredths.

MAXIMA.—1948: Discharge, 12,200 second-feet Feb. 18 (gage height, 32.01 feet). 1938-47: Discharge, 16,100 second-feet Jan. 16, 17, 1946; gage height, 33.50 feet Jan. 16, 1946.

A stage of 36.8 feet (from floodmarks) occurred in January 1932 (probably affected by levee breaks above).

REMARKS.—Flow partly regulated by Arkabutla Reservoir since Aug. 1, 1945. Daily discharge not adjusted for storage in Arkabutla Reservoir. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Discharge	Day	Gage height	Discharge	Day	Gage height	Discharge	Day	Gage height	Discharge
Jan.			Feb.			Feb.			Feb.		
26	15.87	1,910	4	17.42	2,390	14	30.80	9,440	23	31.11	11,200
27	15.70	1,840	5	21.23	2,640	15	31.44	10,200	24	30.75	10,800
28	15.76	1,680	6	23.99	4,680	16	31.81	11,100	25	30.48	10,500
29	15.76	1,680	7	25.64	6,640	17	31.99	11,700	26	30.50	10,600
30	15.74	1,640	8	26.69	6,910	18	32.00	12,200	27	30.60	10,800
31	15.56	1,630	9	27.51	7,420	19	31.89	12,100	28	30.73	10,900
Feb.			10	27.55	7,000	20	31.84	12,100	29	30.79	11,100
1	15.52	1,640	11	27.19	6,430	21	31.66	11,900	Mar.		
2	15.63	1,660	12	27.82	7,480	22	31.41	11,600	1	30.82	11,100
3	16.06	1,730	13	29.89	9,580						

TALLAHATCHIE RIVER AT SWAN LAKE

LOCATION.—Lat. $33^{\circ} 52' 55''$, long. $90^{\circ} 16' 45''$, in NE $\frac{1}{4}$ Sec. 10, T. 23 N., R. 1 W. Choctaw meridian, at county highway bridge half a mile northeast of Swan Lake, 2 miles downstream from Cassidy Bayou, and 17 miles downstream from point where Panola-Quitman floodway empties into Tallahatchie River. Datum of gage is 113.38 feet above mean sea level, datum of 1929, supplementary adjustment of 1941. Auxiliary gage at highway bridge over cut-off 2.8 miles downstream, $1\frac{1}{2}$ miles northeast of Glendora, at datum 0.95 foot lower.

DRAINAGE AREA.—5,130 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Fall as determined from auxiliary water-stage recorder graph used as a factor. Gage heights used to hundredths.

MAXIMA.—1948: Discharge, 42,900 second-feet 2. p.m. Feb. 17 (gage height, 32.20 feet).

1938-47: Discharge observed, 43,200 second-feet Feb. 22, 1939 (gage height, 32.97 feet).

A stage of 37.0 feet occurred Jan. 15, 1932 (affected by break in levee).

REMARKS.—Flow partly regulated by Sardis and Arkabutla Reservoirs since Aug. 1, 1940. Daily discharge not adjusted for storage in Sardis and Arkabutla Reservoirs. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	15.78	5,650	4	16.67	6,220	14	29.29	23,300	24	30.16	21,200
27	15.80	5,580	5	17.84	7,250	15	30.70	31,900	25	29.95	20,500
28	15.93	5,750	6	19.43	8,690	16	31.78	40,100	26	29.73	19,600
29	15.93	5,750	7	20.85	10,100	17	32.18	42,500	27	29.57	19,500
30	15.95	5,790	8	22.23	11,100	18	32.00	38,700	28	29.46	19,200
31	15.98	5,670	9	23.27	12,200	19	31.65	34,500	29	29.33	18,800
Feb.			10	24.14	13,100	20	31.33	31,000	Mar.		
1	16.06	5,690	11	24.82	13,800	21	31.00	27,500	1	29.18	17,700
2	16.14	5,800	12	26.08	14,900	22	30.73	25,700			
3	16.25	5,910	13	27.79	17,900	23	30.43	23,100			

YAZOO RIVER AT GREENWOOD

LOCATION.—Lat. 33° 31' 17", long. 90° 11' 03", in SW 1/4 Sec. 10, T. 19 N., R. 1 E. Choctaw meridian, at bridge on U. S. Highways 49 E and 82, in Greenwood. 3 miles downstream from confluence of Tallahatchie and Yalobusha Rivers. Datum of gage is 92.07 feet above mean sea level, datum of 1929, supplementary adjustment of 1941.

DRAINAGE AREA.—7,450 square miles (from reports of Mississippi River Commission).

GAGE-HEIGHT RECORD.—Once-daily readings of wire-weight gage prior to Feb. 11 and water-stage recorder graph thereafter.

DISCHARGE RECORD.—Loop curves defined by frequent measurements.

MAXIMA.—1948: Discharge, 50,400 second-feet Feb. 21 (gage height, 39.99 feet). 1908-13, 1938-47: Discharge, 48,900 second-feet Feb. 17, 1946 (gage height, 39.78 feet).

Discharge determined, 72,900 second-feet Jan. 19, 1932 (gage height, 40.1 feet), from reports of Mississippi River Commission; stage known, 41.2 feet in 1882, caused by overflow from Mississippi River, from reports of Mississippi River Commission.

REMARKS.—Frequent discharge measurements made by Corps of Engineers. Flow partly regulated by Sardis and Arkabutla reservoirs since Aug. 1, 1940.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Mar.		
26	15.50	7,240	6	18.88	9,330	18	38.56	42,000	1	37.80	32,500
27	15.64	7,280	7	19.93	10,100	19	39.40	46,700	2	37.83	32,600
28	15.81	7,370	8	23.04	12,600	20	39.88	49,600	3	37.71	32,000
29	16.02	7,480	9	24.43	13,800	21	39.97	50,400	4	37.50	31,200
30	16.62	7,840	10	24.77	14,200	22	39.87	48,400	5	37.30	30,200
31	16.84	7,950	11	25.27	14,600	23	39.68	46,200	6	37.39	31,000
Feb.			12	27.97	17,800	24	39.44	43,600	7	37.30	32,200
1	17.14	8,160	13	30.40	21,600	25	39.22	41,400	8	37.19	32,100
2	17.26	8,250	14	31.42	23,400	26	38.98	39,500	9	37.14	32,000
3	17.28	8,260	15	32.79	26,000	27	38.65	37,000			
4	17.56	8,440	16	35.12	30,700	28	38.41	35,600			
5	18.34	8,950	17	37.51	37,400	29	38.10	34,000			

YOCONA RIVER NEAR ENID

LOCATION.—Lat. 34° 09', long. 89° 55', in T. 11 S., R. 7 W. Chickasaw meridian, at bridge on U. S. Highway 51, 200 feet downstream from Tolliver Creek, 2 miles northeast of Enid, 2½ miles upstream from Illinois Central Railroad bridge, 6 miles upstream from drainage-canal diversion, and 24½ miles upstream from mouth. Datum of gage is 189.42 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

DRAINAGE AREA.—560 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Gage heights used to half-tenths between 0.8 and 2.7 feet; hundredths below and tenths above these limits.

MAXIMA.—1948: Discharge, 36,600 second-feet 6 a.m. Feb 14 (gage height, 21.61 feet).

1928-31, 1938-46: Discharge, 25,400 second-feet Jan. 1, 1945 and Feb. 10, 1946; gage height, 20.20 feet Jan. 1, 1945.

REMARKS.—Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	0.59	231	4	5.58	2,120	14	21.20	33,000	23	4.92	1,580
27	3.55	1,120	5	6.98	2,680	15	19.10	17,300	24	3.54	1,070
28	3.50	1,070	6	7.46	2,970	16	12.53	6,800	25	7.00	2,740
29	2.18	652	7	6.98	2,690	17	6.53	2,380	26	7.76	3,180
30	1.87	544	8	12.18	6,560	18	5.18	1,700	27	7.37	2,900
31	2.02	590	9	8.50	3,670	19	4.35	1,380	28	6.44	2,290
Feb.			10	6.17	2,170	20	4.94	1,580	29	4.80	1,540
1	2.38	716	11	6.84	2,530	21	5.11	1,660	Mar.		
2	2.43	734	12	16.73	11,100	22	6.45	2,290	1	4.09	1,280
3	2.88	876	13	20.12	23,700						

COLDWATER RIVER NEAR LEWISBURG

LOCATION.—Lat 34° 50' 27", long. 89° 49' 32", in center of Sec. 10, T. 3 S., R. 6 W. Chickasaw meridian, at county highway bridge, 1.6 miles south of Lewisburg and 4.0 miles upstream from Pigeonroost Creek. Datum of gage is 250.52 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements to 13,000 second-feet. Gage heights used to half-tenths between 3.1 and 5.6 feet, 8.9 and 9.9 feet and 11.3 and 13.0 feet; hundredths between 9.9 and 13.0 feet, and below 3.1 feet; tenths between 5.6 and 8.9 feet, and above 13.0 feet.

MAXIMA.—1948: Discharge, 17,900 second-feet 2 a.m. Feb. 13 (gage height, 14.05 feet).

1941-47: Discharge, 25,900 second-feet Jan. 8, 1946 (gage height, 15.60 feet).

REMARKS.—Coldwater River and Pigeonroost Creek are interconnected through old creek channel; total drainage area 428 square miles. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	3.35	74	4	8.04	666	14	12.09	8,460	23	6.24	319
27	3.31	72	5	10.24	1,470	15	10.84	3,300	24	5.76	279
28	3.31	72	6	10.16	1,330	16	10.23	1,450	25	7.43	1,240
29	3.30	72	7	10.35	1,700	17	9.71	930	26	11.00	3,930
30	3.22	67	8	10.19	1,380	18	7.91	515	27	11.31	5,130
31	3.22	67	9	9.74	955	19	5.21	219	28	10.58	2,360
Feb.			10	9.38	801	20	5.39	239	29	10.18	1,360
1	3.30	72	11	8.96	658	21	5.74	269	Mar.		
2	3.36	74	12	11.64	7,260	22	6.67	370	1	9.76	955
3	4.16	128	13	13.64	15,900						

COLDWATER RIVER AT ARKABUTLA DAM, NEAR ARKABUTLA

LOCATION.—Lat. 34° 45' 30", long. 90° 07' 35", in SW 1/4 Sec. 2, T. 4 S., R. 9 W. Chickasaw meridian, 370 feet downstream from outlet funnel of Arkabutla Dam and 4 miles north of Arkabutla. Datum of gage is 171.28 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

DRAINAGE AREA.—1,000 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 4,230 second-feet 8 p. m. Feb. 15 (gage height, 17.38 feet).

1942-47: Discharge, 10,200 second-feet Apr. 12, 1942 (gage height, 27.7 feet).

REMARKS.—Flow completely regulated by Arkabutla Reservoir since Aug. 31, 1945. Records of daily discharge not adjusted for storage in Arkabutla Reservoir. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
21	6.67	934	1	6.29	836	11	8.99	1,550	21	14.91	3,350
22	6.70	934	2	6.23	812	12	11.94	2,390	22	14.81	3,310
23	6.77	959	3	6.26	836	13	15.44	3,520	23	14.66	3,280
24	6.80	959	4	8.41	1,390	14	16.99	4,120	24	14.59	3,210
25	6.77	959	5	11.60	2,320	15	17.34	4,240	25	15.01	3,380
26	6.72	934	6	12.65	2,420	16	17.06	4,160	26	16.34	3,850
27	6.67	934	7	12.25	2,480	17	16.40	3,890	27	17.24	4,200
28	6.32	836	8	12.52	2,570	18	15.75	3,670	28	17.30	4,240
29	6.52	884	9	11.02	2,120	19	15.26	3,490	29	16.90	4,080
30	6.45	860	10	8.87	1,530	20	15.95	3,380			
31	6.37	860									

PIGEONROOST CREEK NEAR LEWISBURG

LOCATION.—Lat. 34° 49' 49", long. 89° 49' 20", in NW 1/4 Sec. 15, T. 3 S., R. 6 W. Chickasaw meridian, at county highway bridge, 1.6 miles from mouth and 2.4 miles south of Lewisburg. Datum of gage is 253.14 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 3,700 second-feet. Gage heights used to half-tenths between 4.3 and 5.9 feet, between 10.0 and 11.1 feet, and above 12.4 feet; hundredths between 11.1 and 12.4 feet, and below 4.3 feet; tenths between 5.9 and 10.0 feet.

MAXIMA.—1948: Discharge, 7,370 second-feet 3 a. m. Feb. 13 (gage height, 12.68 feet).

1941-47: Discharge, 34,900 second-feet Apr. 9, 1942, from rating curve extended above 4,500 second-feet; gage height, 12.85 feet Jan. 8, 1946.

REMARKS.—Pigeonroost Creek and Coldwater River interconnected through old creek channel above station; total drainage area, 428 square miles. Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	3.52	52	3	6.94	437	12	11.85	4,060	21	5.00	214
27	3.60	59	4	10.49	1,560	13	12.38	5,870	22	7.14	459
28	3.57	56	5	11.01	1,550	14	10.83	2,090	23	4.38	138
29	3.53	53	6	10.59	1,210	15	6.16	346	24	4.07	105
30	3.56	55	7	9.18	718	16	4.50	148	25	8.93	1,720
31	3.60	59	8	10.04	928	17	3.80	78	26	11.29	2,240
Feb.			9	6.11	334	18	3.41	42	27	11.56	2,670
1	3.63	62	10	4.68	170	19	3.34	36	28	9.53	916
2	4.41	138	11	6.61	398	20	5.07	208	29	5.29	238

YALOBUSHA RIVER AT GRAYSPORT

LOCATION.—Lat. 33° 49', long. 89° 37', in E 1/2 Sec. 36, T. 23 N., R. 6 E. Choctaw meridian, at bridge on State Highway 8 (old), half a mile north of Graysport, and 11 1/4 miles upstream from Skuna River. Datum of gage is 179.91 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers).

DRAINAGE AREA.—607 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements to 41,900 second-feet. Gage heights used to half-tenths between 21.5 and 25.2 feet; tenths below and above these limits.

MAXIMA.—1948: Discharge, 46,800 second-feet 12 p. m. Feb. 13 (gage height, 28.25 feet).

1940-47: Discharge, 38,100 second-feet Mar. 29, 1944 (gage height, 27.00 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	9.71	254	4	15.97	964	14	27.70	40,800	23	20.59	1,850
27	12.04	491	5	17.43	1,180	15	25.74	22,100	24	20.37	1,780
28	16.07	979	6	18.19	1,320	16	24.02	10,600	25	20.49	1,810
29	16.44	1,020	7	18.99	1,460	17	23.00	6,020	26	20.61	1,850
30	16.49	1,040	8	20.76	1,940	18	23.39	4,030	27	20.53	1,810
31	16.95	1,120	9	22.00	3,750	19	21.98	3,040	28	20.17	1,720
Feb.			10	23.03	6,140	20	21.68	2,660	29	19.26	1,520
1	17.27	1,170	11	23.18	6,750	21	21.29	2,240	Mar.		
2	16.98	1,120	12	24.59	14,300	22	20.93	1,980	1	17.08	1,140
3	16.17	994	13	27.61	39,800						

GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, AT INDICATED TIME

Time	Gage height	Dis-charge	Time	Gage height	Dis-charge	Time	Gage height	Dis-charge
Feb. 8			Feb. 12			Feb. 15		
8 a. m.	20.71	1,890	4 p. m.	24.91	15,600	4 p. m.	25.40	19,000
4 p. m.	20.91	1,980	8 p. m.	25.36	19,000	12 p. m.	24.78	15,000
12 p. m.	21.25	2,240	12 p. m.	26.26	26,100	Feb. 16		
Feb. 9			Feb. 12			8 a. m.	24.22	11,400
8 a. m.	21.75	2,720	4 a. m.	27.08	33,700	4 p. m.	23.76	9,150
4 p. m.	22.28	3,720	8 a. m.	27.41	37,000	12 p. m.	23.40	7,600
12 p. m.	22.69	4,950	Noon	27.68	40,500	Feb. 17		
Feb. 10			4 p. m.	28.00	44,200	8 a. m.	23.11	6,400
Noon	23.12	6,400	8 p. m.	28.21	46,800	4 p. m.	22.86	5,470
12 p. m.	23.19	6,800	12 p. m.	28.25	46,800	12 p. m.	22.64	4,770
Feb. 11			Feb. 14			Feb. 18		
Noon	23.14	6,600	8 a. m.	28.09	45,500	Noon	22.38	3,990
12 p. m.	23.27	7,000	4 p. m.	27.50	38,100	12 p. m.	22.16	3,370
Feb. 12			12 p. m.	26.76	30,700	Feb. 19		
4 a. m.	23.51	8,000	Feb. 15			Noon	21.97	3,010
8 a. m.	24.29	12,000	8 a. m.	26.06	24,400	12 p. m.	21.81	2,790
Noon	24.76	14,700						

YALOBUSHA RIVER AT GRENADA

LOCATION.—Lat. 33° 47', long. 89° 48', in NE 1/4 Sec. 7, T. 22 N., R. 5 E. Choctaw meridian, at bridge on U. S. Highway 51 in Grenada, 0.8 mile downstream from Illinois Central Railroad bridge, 1 mile downstream from Batupan River, 6 miles downstream from Skuna River, and 60 miles upstream from confluence with Tallahatchie River. Datum of gage is 152.03 feet above mean sea level, datum of 1929, supplementary adjustment of 1944.

DRAINAGE AREA.—1,550 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements throughout range used. Gage heights used to half tenths between 25.6 and 27.3 feet; tenths below and above these limits.

MAXIMA.—1948: Discharge, 78,400 second-feet 8 a. m. Feb. 14 (gage height, 30.78 feet).

1906, 1908-12, 1928-31, 1938-47: Discharge, 76,800 second-feet Mar. 29, 1944 (gage height, 30.53 feet).

REMARKS.—Base data furnished by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	8.12	760	4	14.00	2,500	14	30.73	76,800	23	21.54	5,350
27	11.24	1,680	5	16.49	3,250	15	30.15	69,100	24	20.86	5,050
28	15.14	2,830	6	17.34	3,570	16	28.74	47,800	25	20.96	5,100
29	15.06	2,830	7	18.66	4,130	17	27.18	28,800	26	20.86	5,050
30	15.16	2,860	8	21.80	5,540	18	25.87	15,300	27	20.65	4,900
31	15.44	2,920	9	22.91	6,720	19	24.76	10,300	28	20.52	4,850
Feb.			10	23.34	7,300	20	23.87	8,320	29	20.34	4,770
1	14.69	2,710	11	24.44	9,300	21	22.88	6,720	Mar.		
2	14.25	2,560	12	27.64	33,600	22	22.29	6,000	1	19.82	4,570
3	13.82	2,440	13	29.96	66,100						

SKUNA RIVER NEAR COFFEEVILLE

LOCATION.—Lat. 33° 54' 35", long. 89° 38' 30", in NW 1/4 Sec. 35, T. 24 N., R. 6 E. Choctaw meridian, at bridge on county road, 3 1/4 miles upstream from Turkey Creek, 5 miles south of Coffeeville, and 9 1/4 miles from mouth. Datum of gage is 188.46 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

DRAINAGE AREA.—435 square miles.

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current meter measurements to 15,000 second-feet. Gage heights used to tenths between 7.7 and 17.9 feet; half tenths below and above these limits.

MAXIMA.—1948: Discharge, 31,000 second-feet 4 p.m. Feb. 14 (gage height, 22.15 feet).

1940-47: Discharge, 44,000 second feet Mar. 29, 1944 (gage height, 23.22 feet).

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	6.54	167	4	10.58	682	14	22.02	28,900	23	14.70	1,390
27	8.86	450	5	13.08	1,090	15	21.34	21,100	24	15.30	1,510
28	12.94	1,050	6	15.40	1,530	16	20.02	9,650	25	14.61	1,370
29	14.40	1,330	7	17.04	1,990	17	18.72	4,170	26	15.43	1,530
30	13.84	1,210	8	18.20	3,000	18	17.32	2,240	27	16.83	1,910
31	10.53	667	9	18.67	3,880	19	13.52	1,180	28	16.91	1,950
Feb.			10	18.91	4,540	20	11.29	792	29	14.38	1,330
1	11.10	760	11	18.52	3,540	21	12.12	920	Mar.		
2	11.30	792	12	19.08	5,410	22	13.29	1,120	1	10.81	712
3	9.87	577	13	21.03	18,500						

SUNFLOWER RIVER AT SUNFLOWER

LOCATION.—Lat. 33° 32' 50", long. 90° 32' 35", in NE 1/4 Sec. 6, T. 19 N., R. 3 W. Choctaw meridian, at bridge on U. S. Highway 49 W (old), half a mile northwest of Sunflower, 2½ miles downstream from Jones Bayou, and 19 miles upstream from Quiver River. Datum of gage is 92.95 feet above mean sea level, datum of 1929, supplementary adjustment of 1941 (levels by Corps of Engineers).

DRAINAGE AREA.—780 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

DISCHARGE RECORD.—Stage-discharge relation defined by current-meter measurements. Gage heights used to tenths.

MAXIMA.—1948: Discharge, 6,780 second-feet Feb. 16-18; gage height, 26.65 feet Feb. 17.

1938-47: Discharge, 7,700 second-feet Jan. 15-17, 1946; gage height, 27.43 feet Jan. 16, 1946.

REMARKS.—Base data collected by Corps of Engineers.

DAILY MEAN GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND-FEET, 1948

Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge	Day	Gage height	Dis-charge
Jan.			Feb.			Feb.			Feb.		
26	5.24	654	4	8.04	1,940	14	25.75	6,120	23	25.28	5,760
27	5.60	703	5	10.04	1,410	15	26.40	6,600	24	24.80	5,450
28	6.02	755	6	11.89	1,800	16	26.62	6,780	25	24.32	5,190
29	6.13	768	7	13.26	2,110	17	26.65	6,780	26	24.00	5,040
30	6.15	781	8	15.38	2,560	18	26.56	6,780	27	23.62	4,840
31	6.01	755	9	17.16	2,960	19	26.39	6,600	28	23.26	4,720
Feb.			10	17.86	3,130	20	26.22	6,440	29	22.87	4,560
1	6.24	781	11	18.11	3,170	21	25.97	6,280	Mar.		
2	6.62	834	12	20.58	3,790	22	25.71	6,040	1	22.38	4,360
3	7.14	905	13	24.08	5,090						

SUMMARY OF FLOOD STAGES AND DISCHARGES

The following table presents crest stages or discharges or both for a number of streams for which more detailed information is not available. Many of the locations listed are former river-measurement stations at which records were obtained for short periods of time. Crest stages were, in these cases, determined from high-water marks, and peak discharges were obtained from previously established stage-discharge relations. Some of the locations are the Weather Bureau river forecast stations, or Corps of Engineers stage stations for which stage only is determined. Still others are Corps of Engineers high-water stations for which data are available only during high water periods.

Crest stages and discharges are also listed in the tables for existing river measurement stations. These data have been previously presented but are included again to facilitate a comprehensive comparison.

SUMMARY OF FLOOD STAGES AND DISCHARGES IN NORTH MISSISSIPPI

				Maximum flood previously known				Maximum during February-March 1948			
No. on Map	Stream and place of determination	Drainage area (Square miles)	Period of record	Date	Gage height (Feet)	Discharge		Time	Gage height (Feet)	Discharge	
						Second feet	Second feet per square mile			Second feet	Second ft. per square mile
1	East Fork Tombigbee River near Marietta.....	335	1938-	Jan. 8, 1946	10.84	12,700	41.6	Feb. 13	12.4	.....	.....
2	East Fork Tombigbee River near Fulton.....	605	1923-	Jan. 9, 1946 Mar. 29, 1944	19.12 18.82	..... 30,000	..... 49.6	Feb. 14 5 a. m.	22.24	47,700	78.8
3	East Fork Tombigbee River at Bigbee.....	1,194	1945-	Feb. 11, 1946	22.52	36,500	30.6	Feb. 15	24.90	52,800	44.2
4	Tombigbee River near Amory	1,941	1937-	Mar. 30, 1944 Apr. 20, 1892	31.65 44.8	67,800	34.9	Feb. 14 1 p. m. Feb. 15 noon	32.55	89,100 97,000	45.9 43.9
5	Tombigbee River at Aberdeen	2,210	1928-	Mar. 30, 1944 Apr. 8, 1892 Mar. 31, 1944	40.99 42.6 37.64	68,600 134,000	31.0	Feb. 15 7 p. m.	42.04	.....	.....
6	Tombigbee River at Columbus	4,490	1900-12	Mar. 31, 1944	37.64	134,000	29.8	Feb. 16 9 p. m.	38.32	135,000	30.1
7	Mackeys Creek near Dennis	66	1928- 1938-	Feb. 15, 1939	17.8	2,460	37.3	Feb. 13	22.08	3,520	53.3
8	Bull Mountain Creek at Tremont	120	1943-	Jan. 8, 1946	9.47	11,600	96.7	Feb. 13	9.45	11,600	96.7
9	Bull Mountain Creek near Smithville	335	1940-	Mar. 29, 1944	14.9	21,900	65.4	Feb. 13	15.25	24,800	74.0
10	West Fork Tombigbee River near Nettleton....	617	1939-	Mar. 28, 1944	31.18	48,400	78.4	Feb. 14 12:30 a. m.	30.74	56,300	91.2
11	Oldtown Creek at Tupelo	114	1944-47	Mar. 28, 1944	24.34	12,600	111	Feb. 13	24.55	14,700	129
12	Oldtown Creek near Verona	263	1944-47	Jan. 8, 1946	27.80	20,300	77.2	Feb. 13	28.2	23,100	87.8
13	Mud Creek at Tupelo	92	1944-47	Feb. 9, 1946	23.44	8,610	93.6	Feb. 13	24.48	13,500	147
14	Buttahatchie River near Caledonia	823	1928-32 1939-	Jan. 9, 1946 Mar. 30, 1944	17.62 17.6	..... 30,700	..... 37.3	Feb. 15	17.50	24,200	29.4
15	Tibbee River near Tibbee	928	1928-30 1939-	July 4, 1940	29.16	49,700	53.6	Feb. 14 3 p. m.	28.49	48,900	52.7

SUMMARY OF FLOOD STAGES AND DISCHARGES IN NORTH MISSISSIPPI—(Continued)

Maximum flood previously known												Maximum during February-March 1948			
No. on Map	Stream and place of determination	Drainage area (Square miles)	Period of record	Date	Gage height (Feet)	Discharge		Time	Gage height (Feet)	Discharge					
						Second feet	Second feet per square mile			Second feet	Second ft. per square mile				
16	Luxapalila Creek at Steens	309	1943-	Jan. 10, 1946	18.00	9,350	30.3	Feb. 10 8 a. m.	16.87	7,330	23.7				
17	Noxubee River near Brooksville	440	1940-42	July 9, 1940	21.4	18,900	43.0	Feb. 11, 15	.....	8,600	19.5			
18	Noxubee River at Macon	812	1928-32	July 10, 1940	30.28	25,000	30.8	Feb. 15	19.74	.....	.....		
19	Pearl River at Edinburg	898	1928-	Mar. 8, 1935	26.20	31,400	35.0	Feb. 13 4:30 p. m.	27.93	10,600	13.1				
20	Yokahockany River near Kosciusko	314	1938-	Feb. 11, 1946	16.21	11,600	36.9	Feb. 13 10 p. m.	23.37	9,270	10.3				
21	Big Black River at West	985	1936-46	Mar. 30, 1944	22.36	43,600	44.3	Feb. 11 1 a. m.	14.24	5,370	17.1				
22	Big Black River at Pickens	1,460	1938-	Feb. 11, 1946	20.85	37,900	26.0	Feb. 13, 14	22.29	31,800	32.3				
23	Upper Tallahatchie River near New Albany	23.9	1938-	Dec. 29, 1926	23.7	.....	.....	Feb. 15 7 a. m.	20.52	35,600	24.4		
24	Tallahatchie River at Etta	526	1939-41	May 22, 1939	12.3	6,700	280	Feb. 13	11.3	4,000	167				
25	Tallahatchie River near Lambert	1,980	1936-	Jan. 8, 1946	21.59	32,600	62.0	Feb. 13 4 p. m.	23.70	51,200	97.3				
26	Tallahatchie River at Swan Lake	5,130	1936-	Jan. 16, 1946	*33.50	*16,100	.....	Feb. 18	*32.01	*12,200	.....			
27	Yazoo River at Greenwood	7,450	1929-13	Jan. 1932	+36.8	.....	.....	.....	.....	.....	.....
28	Yazoo River at Yazoo City .....	.....	1928-	Jan. 15, 1932	+37.0	.....	.....	.....	.....	.....	.....
29	Hell Creek near New Albany	27.3	1941-42	Feb. 22, 1939	32.97	43,200	8.42	.....	.....	.....	.....
30	Locks Creek near Etta	29.3	1939-	June 19, 1882	41.2	.....	.....	.....	.....	.....	.....
				June 19, 1932	40.1	72,900	9.79	Feb. 21	*39.99	50,400	.....			
				May 5, 1927	43.4	.....	.....	Mar. 14	35.6	.....	.....		
				June 17, 1939	16.73	3,600	132	Feb. 13	16.9	3,120	114				
				June 17, 1939	7.19	4,000	137	Feb. 13	7.3	4,400	150				

SUMMARY OF FLOOD STAGES AND DISCHARGES IN NORTH MISSISSIPPI—(Continued)

No. on Map	Stream and place of determination	Drainage area (Square miles)	Period of record	Maximum flood previously known				Maximum during February-March 1948			
				Date	Gage height (Feet)	Discharge		Time	Gage height (Feet)	Discharge	
						Second feet	Second feet per square mile			Second feet	Second ft. per square mile
31	Cypress Creek near Etta	28.5	1939-42	June 17, 1939	10.12	3,920	138	Feb. 13	10.7	7,400	260
32	North Tippah Creek near Ripley	20.0	1939-42	Apr. 9, 1942	11.53	1,980	99.0	Feb. 13	12.1	2,800	140
33	Potts Creek near Potts Camp	8.26	1939-41	Apr. 4, 1940	9.99	535	64.8	Feb. 13	11.6	645	78.1
34	Clear Creek near Oxford	9.30	1939-41	July 12, 1940	9.17	3,400	366	Feb. 13	7.4	1,800	194
35	Yocona River near Enid	560	1928-	Jan. 14, 1932	21.0	27,000	48.2	Feb. 14 6 a. m.	21.61	36,600	65.4
36	Long Creek at Courtland	63.3	1940-42	Apr. 9, 1942	22.21	13,500	213	Feb. 13	21.8	12,800	202
37	Coldwater River near Lewisburg		1939-	Jan. 8, 1946	15.60	25,900	.....	Feb. 13 2 a. m.	14.05	17,900	.....
38	Pigeonroost Creek near Lewisburg		1939-	Jan. 8, 1946	12.85						
39	North Fork Tillatoba Creek near Charleston	43.7	1941-42	Apr. 9, 1942	12.2	34,900	.....	Feb. 13 3 a. m.	12.68	7,370	.....
40	Askamore Creek near Charleston	31.0	1941-42	May 14, 1942	17.42	4,470	102	Feb. 13	16.3	3,650	83.5
41	Yalobusha River at Graysport	607	1940-	Mar. 29, 1944	12.90	8,420	272				
42	Yalobusha River at Grenada	1,550	1906 1908-12 1928-	Mar. 29, 1944	27.00	38,100	62.8	Feb. 13 12 p. m.	28.25	46,800	77.1
43	Skuna River near Coffeeville	435	1940-	Mar. 29, 1944	30.53	76,800	49.5	Feb. 14 8 a. m.	30.78	78,400	50.6
44	Turkey-Cypress Creek near Coffeeville	22.3	1941-42	Dec. 27, 1942	23.22	44,000	101	Feb. 14 4 p. m.	22.15	31,000	71.3
45	Sunflower River at Sunflower	780	1935-	Jan. 16, 1946	13.39	2,760	124	Feb. 13 Feb. 16-18 Feb. 17	14.5 26.65	4,000 6,780	179 8.69

*Regulated.

†Affected by levee break.

STORAGE

Only two storage reservoirs are in operation in the region covered by this report, Sardis Reservoir on Tallahatchie River and Arkabutla Reservoir on Coldwater River. The effect of these reservoirs on the restriction of the flood crests in the lower Tallahatchie, lower Coldwater, and the Yazoo River Basins has already been indicated. The following descriptions and tables present detailed information as to daily storage throughout the flood period. The release of water from these reservoirs has been previously presented in the records of daily discharge for Tallahatchie River at Sardis Dam, near Sardis and Coldwater River at Arkabutla Dam, near Arkabutla.

SARDIS RESERVOIR NEAR SARDIS

LOCATION.—Lat. 34° 23' 57", long 89° 47' 10", in gate house of dam on Tallahatchie River in NE 1/4 Sec. 11, T. 8 S., R. 6 W. Chickasaw meridian, 7½ miles southeast of Sardis. Datum of gage is 219.43 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers); gage readings have been reduced to elevations above mean sea level.

DRAINAGE AREA.—1,545 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

MAXIMA.—1948: Not determined; gates closed Feb. 13 and were not reopened during floodperiod.

1939-47: Elevation, 276.65 feet Mar. 31, 1946 (contents, 1,304,970 acre-feet).

REMARKS.—Reservoir is formed by hydraulic-fill earth dam, with concrete spillway and outlet tunnel. Storage began Aug. 26, 1939; dam completed Aug. 1, 1940. Capacity, 1,569,900 acre-feet at elevation of 281.4 feet (crest of spillway) of which about 1,478,000 acre-feet are available for flood-control storage and about 91,900 acre-feet are permanent storage which will be maintained for incidental recreation at elevation 234.4 feet (15 feet above sill of outlet tunnel). Water below 219.4 feet cannot be withdrawn through outlet tunnel. Reservoir used only for flood control. Elevations and contents presented herein were furnished by Corps of Engineers and are preliminary.

8 A. M. ELEVATIONS, IN FEET, AND CONTENTS, IN THOUSANDS OF ACRE-Feet

Day	Elevation	Contents	Day	Elevation	Contents	Day	Elevation	Contents
Jan.			Feb.			Feb.		
26	235.65	104.35	10	239.03	144.18	26	264.02	751.18
27	235.53	103.07	11	239.85	155.25	27	264.57	769.46
28	235.25	100.18	12	241.25	175.09	28	265.02	788.11
29	235.01	97.76	13	245.86	251.56	29	265.59	809.54
30	234.84	96.04	14	250.56	349.19	Mar.		
31	234.73	94.93	15	257.21	525.53	1	266.07	827.98
Feb.			16	260.28	621.82	2	266.74	854.04
1	234.61	93.72	17	261.52	663.19	3	267.23	873.40
2	234.48	92.40	18	262.14	684.45	4	267.69	891.88
3	234.41	91.71	19	262.47	695.81	5	268.18	911.83
4	234.40	91.62	20	262.75	705.70	6	268.70	936.63
5	234.82	95.84	21	262.89	710.64	7	269.15	952.10
6	235.22	99.88	22	263.09	717.70	8	269.51	967.25
7	235.85	106.49	23	263.29	724.76	9	269.85	981.90
8	237.11	120.45	24	263.54	733.70	10	270.17	995.69
9	238.20	133.42	25	263.77	742.08			

ARKABUTLA RESERVOIR NEAR ARKABUTLA

LOCATION.—Lat. 34° 45' 31", long. 90° 07' 30", in gate house of dam on Coldwater River in SW 1/4 Sec. 2, T. 4 S., R. 9 W. Chickasaw meridian, 4 miles north of Arkabutla. Datum of gage is 191.18 feet above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Corps of Engineers); gage readings have been reduced to elevations above mean sea level.

DRAINAGE AREA.—1,000 square miles (authority, Corps of Engineers).

GAGE-HEIGHT RECORD.—Water-stage recorder graph.

MAXIMA.—1948: Elevation, 234.12 feet Mar. 7 (contents, 398,500 acre-feet).

1941-47: Elevation, 235.91 feet Jan. 12, 1946 (contents, 450,140 acre-feet).

REMARKS.—Reservoir is formed by hydraulic-fill earth dam with concrete spillway and outlet tunnel. Storage began Aug. 14, 1941; dam completed Aug. 31, 1945. Capacity, 525,300 acre-feet at elevation 238.3 feet (crest of spillway) of which about 493,800 acre-feet are available for flood-control storage and about 31,500 acre-feet are permanent storage which will be maintained, for incidental recreational purposes, at elevation 209.3 feet (18 feet above sill of outlet tunnel). Figures given herein represent contents above 191.3 feet. Water below 191.3 feet cannot be withdrawn through outlet tunnel. Reservoir used only for flood control. Elevations and contents presented herein were furnished by Corps of Engineers and are preliminary.

8 A. M. ELEVATIONS, IN FEET, AND CONTENTS, IN THOUSANDS OF ACRE-Feet

Day	Elevation	Contents	Day	Elevation	Contents	Day	Elevation	Contents
Jan.			Feb.			Feb.		
26	215.49	74.26	10	218.93	109.51	26	229.60	286.22
27	215.44	73.81	11	219.14	111.92	27	230.93	316.72
28	215.28	72.55	12	220.19	124.72	28	231.72	335.86
29	215.18	71.52	13	224.14	181.71	29	231.91	340.57
30	215.08	70.68	14	228.75	267.82	Mar.		
31	214.98	69.85	15	230.43	304.94	1	231.83	338.59
Feb.			16	230.74	312.25	2	232.67	359.85
1	214.86	68.85	17	230.64	309.89	3	233.62	384.92
2	214.76	68.02	18	230.46	305.65	4	233.82	390.36
3	214.62	66.86	19	230.23	300.29	5	233.75	388.46
4	215.07	70.60	20	229.96	294.26	6	233.93	393.34
5	215.72	76.36	21	229.72	288.90	7	234.12	398.50
6	216.48	83.44	22	229.57	285.55	8	234.08	397.42
7	217.41	92.75	23	229.33	280.18	9	233.84	390.90
8	218.07	99.81	24	229.11	275.46	10	233.57	383.57
9	218.50	105.72	25	228.86	270.16			

PREVIOUS FLOODS

The flood of April 1892 was the maximum known in the lower Tombigbee River Basin in Mississippi as already noted. There is evidence that major floods occurred in other parts of that basin in July 1916, December 1926, and in March 1927. Little or no stream-flow information is available for any of these floods. Information obtained from local residents indicates that the stage for Buttahatchee River near Caledonia was considerably higher in July 1916, than during February 1948; higher for Tibbee River near Tibbee and West Fork Tombigbee River near Nettleton in December 1926, than during February 1948; and higher for East Fork Tombigbee River near Fulton in March 1927, than during February 1948. Weather Bureau stage records on the Tombigbee River at Aberdeen and at Columbus show high but not record breaking stages during each of these periods, indicating that each of these floods was perhaps of a more or less local nature.

The floods of 1892, 1916, 1926, and 1927, all prior to the start of the systematic stream-flow investigations, apparently were less general and less extensive than the flood of February 1948, or, in fact, than that of 1944 which was the largest of record prior to the flood covered by this report. Other important floods in the Tombigbee River Basin occurred in February 1939, July 1940, and January 1946. Interesting to note in connection with floods in the Tombigbee River Basin is the fact that below Aberdeen the three maximum floods since that of 1892 have been in the last four years: in March-April 1944, January 1946, and February 1948.

Meager as flood data are for the Tombigbee River Basin, they are even more meager for the Yazoo River Basin, particularly for the upper part. There is little doubt that the February 1948 flood was the maximum known on the Yalobusha, Yocona, and upper Tallahatchie Rivers. Major floods occurred in the upper basin of these three rivers in December 1927, January 1932, March 1944, and in March 1946, but in no case did they exceed that of February 1948, except in the upper Coldwater River Basin where the 1948 flood was not severe. Weather Bureau stage records are available for the Tallahatchie River at Swan Lake and the Yazoo River at Greenwood since 1904. At both stations, the highest flood in that period occurred in January 1932. However, there is knowledge of a flood at Greenwood in 1882 which exceeded the 1932 crest stage by over a foot. The 1882 flood was, however, caused in considerable part by overflow of the Mississippi River. Weather Bureau stage records are available for the Yazoo River at Yazoo City since 1885. At this point, the maximum stage occurred during the May 1927 flood which exceeded the 1882 flood by nearly a foot and the February 1948 flood by about 8 feet.

FLOOD DAMAGE

The greatest damage from the February 1948 flood was the disruption of transportation, both highway and railroad. State highways in north Mississippi suffered extensive damage from inundated roads, especially in the river bottoms, and from washouts of bridges and approaches. State highways leading west and south out of Columbus, east and north out of Grenada, and west out of Greenwood were blocked by high water for several days. The only known damage to railroad facilities was in the vicinity of Aberdeen where the St. Louis-San Francisco Railway road-bed was washed out in two separate stretches of track (Figure 4). No estimate of this damage to highways and railway is available at this time, nor is any estimate available of patrol costs for keeping drift clear of relief openings most of which are of pile trestle construction.

The county highway systems in north Mississippi were damaged in excess of one million dollars. The flood damaged or destroyed 100 bridges in Union County, 92 in Prentiss County, 66 in Carroll County, 65 in Itawamba County, 50 each in Lafayette and Tippah Counties, and a lesser number in other north Mississippi counties. Carroll County has already spent \$110,000 repairing flood damage to its highway system without completing the job. Estimates by the

county engineer of Leflore County place the flood damage in that county at nearly \$200,000. In Prentiss County the estimated damage was \$175,000.

As far as is known, only one life was lost as a result of the flood. However, many hundreds of people were made homeless. Information is incomplete at the present but indications are that more than 5,000 persons were evacuated by the American Red Cross.

Agricultural damage was not great. Forecasts by the Weather Bureau permitted the removal of most of the live stock from the low bottom lands. Planting had not yet begun so there was no direct damage to crops. However, the delay in the planting season because of the flood may result in later losses.

Other losses or costs attributable to the flood include the patrolling of levees, sandbagging of levees, interruption of radio communication in certain areas, loss of boats, damage to homes and furniture from silt-laden floodwaters, and the like.