The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from stage-discharg relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying

A, PEARL RIVER NEAR COLUMBIA, MISS.

B, LITTLE MANATEE RIVER NEAR WIMAUMA, FLA.

FIGURE 1.—GAGING-STATION STRUCTURES.

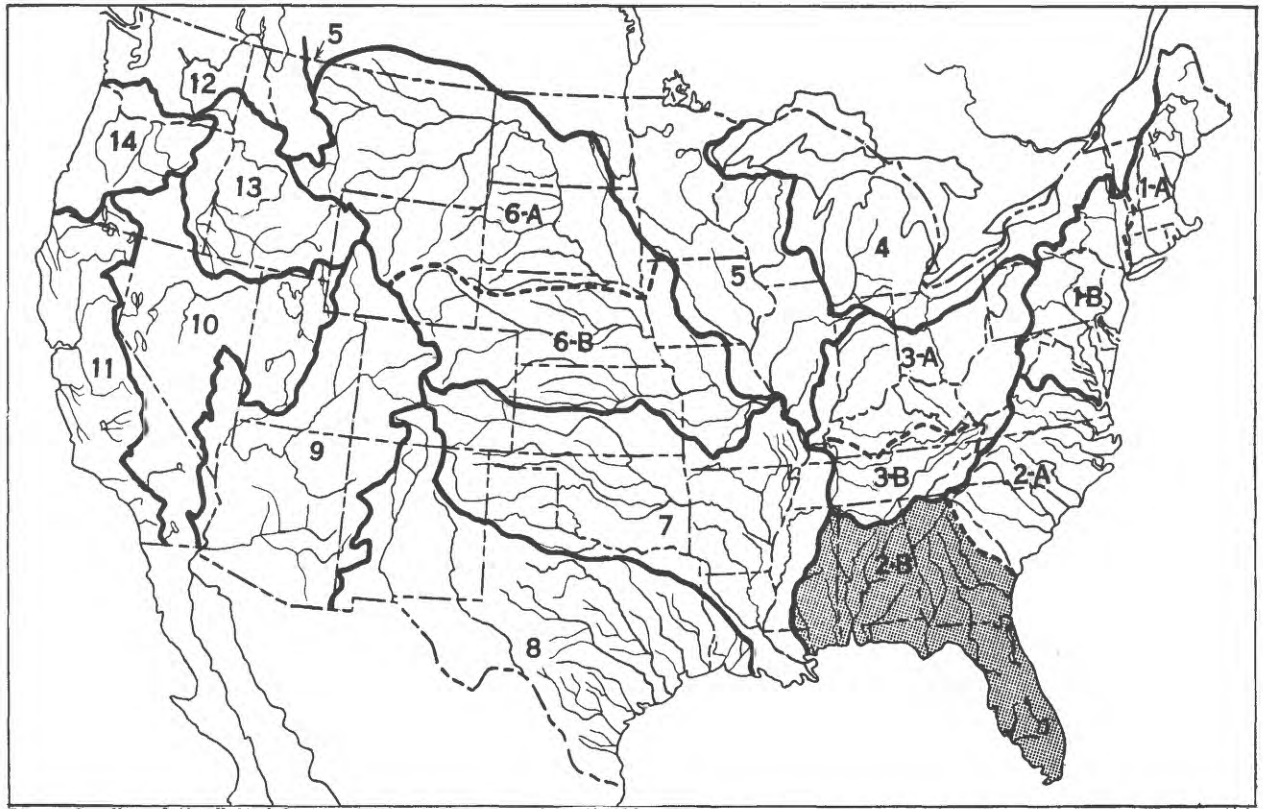

Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

Streamflow data for the years 1884-1901, in reports of the Geological Survey--Continued

(A = Annual Reports; B = Bulletin; W = Water-Supply Paper)

Report	Character of data	Year
W 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1895-96.
W 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
W 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897.
W 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
W 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge.....	1898.
W 35 to 39...	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4	Monthly discharge.....	1899.
W 47 to 52...	Descriptions, measurements, gage heights, and ratings.....	1900.
22d A, pt. 4.	Monthly discharge.....	1900.
W 65, 66.....	Descriptions, measurements, gage heights, and ratings.....	1901.
W 75.....	Monthly discharge.....	1901.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. Before 1951, records for the South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River basins were included with those for the South Atlantic slope and eastern Gulf of Mexico basins.

Numbers of water-supply papers containing results of stream measurements in the South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River, 1899-1952

Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.
1899	36	1911	302	1923	562	1933	742	1943	972
1900	48	1912	322	1924	582	1934	757	1944	1002
1901	65, 75	1913	352	1925	602	1935	782	1945	1032
1902	83	1914	382	1926	622	1936	802	1946	1052
1903	98	1915	402	1927	642	1937	822	1947	1082
1904	127	1916	432	1928	662	1938	852	1948	1112
1905	168	1917	452	1929	682	1939	872	1949	1142
1906	204	1918	472	1930	697	1940	892	1950	1172
1907-8	242	1919-20	502	1931	712	1941	922	1951	1204
1909	262	1921	522	1932	727	1942	952	1952	1234
1910	282	1922	542						

The records at most of the stations discussed in these reports extend over many years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

Each of the reports on the surface-water supply for the year 1939 (Water-Supply Paper 872 for the South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River) contains, for the area included in that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record had been collected. These summaries were reprinted separately.

Reports also have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which may have been revised), as well as some records not contained in the annual series of water-supply papers. The only such reports for any part of the area covered by this report are Water-Supply Paper 107, "Water powers of Alabama, with an appendix on stream measurements in Mississippi, 1895-1903" and Water-Supply Paper 197, "Water resources of Georgia, 1895-1905."

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Alabama.....	1895-1915	Bull. 17, Water powers of Alabama.....	Geological Survey of Alabama.
Do.....	1904-47	Special Report 20, Water Resources and Hydrology of southeastern Alabama.	Do.
Florida.....	1898-1946	Bull. 31, Springs of Florida.....	Florida Geological Survey.
Georgia.....	1895-1906	Bull. 16, Water powers of Georgia.....	Geological Survey of Georgia.
Do.....	1907-19	Bull. 38, Water powers of Georgia.....	Do.
Louisiana.....	1903-38	Geol. Bull. 16, Surface water supply of Louisiana.	Department of Conservation.
Mississippi...	1900-1948	Bull. 68, Surface Waters of Mississippi...	Mississippi Geological Survey.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following list gives the numbers and titles of these reports:

Water-Supply Paper	Title
771.....	Floods in the United States, magnitude and frequency.
847.....	Maximum discharges at stream-measurement stations through September 1938.
1066.....	Floods of August 1940 in the southeastern States.
1227-A.....	Floods of March-April 1951 in Alabama and adjacent States.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1951 to September 1952 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Big Cedar Creek.....	Cave Springs, Ga.....	1948-52	Corps of Engineers.
Chattahoochee River....	Eufaula, Ala.....	1938-52	United States Weather Bureau.
Do.....	Franklin, Ga.....	1945-52	Corps of Engineers.
Chiwappa River.....	Shannon, Miss.....	1949-52	Do.
Flint River.....	Newton, Ga.....	1938-45, 1946-52[a]	Do.
Harney Pond Canal.....	At Lake Okeechobee, Fla.....	1952	Do.
Indian Prairie Canal...	Near Okeechobee, Fla.....	1952	Do.
Little Cedar Creek.....	Cave Springs, Ga.....	1948-52	Do.
Miami Canal.....	At Lake Okeechobee, Fla.....	1952	Do.
Nine Mile Canal.....	....do.....	1952	Do.
North New River and Hillsboro Canals.	....do.....	1952	Do.
Old Town Creek.....	Verona, Miss.....	1944-52[b]	Do.
Sakatonchee Creek.....	Egypt, Miss.....	1949-52	Do.
Taylor Creek.....	Near Lake Okeechobee, Fla.....	1952	Do.
Tishimingo Creek.....	Saltillo, Miss.....	1949-52	Do.
Town Creek.....	Tupelo, Miss.....	1949-52	Do.
Uchee Creek.....	Fort Mitchell, Ala.....	1946-52	Do.
Uclatubba Creek.....	Saltillo, Miss.....	1949-52	Do.
Upatoi Creek.....	Fort Benning, Ga.....	1942-52[c]	Do.
Valley Creek.....	Oak Grove, Ala.....	1946-52	Do.
Do.....	Bessemer, Ala.....	1946-52	Do.

[a] Records prior to October 1947 published in reports of Geological Survey.
[b] Records prior to July 1947 published in reports of Geological Survey.
[c] Records prior to January 1948 published in reports of Geological Survey.
Note.--The Soil Conservation Service of the U. S. Department of Agriculture (beginning in 1939) has collected records of runoff from 1 area of 19.2 acres near Watkinsville, Ga.

HYDROLOGIC CONDITIONS

The water year 1952 was characterized by normal to slightly above normal runoff over most of the South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River, except for the southwestern portion of this area where drought conditions existed throughout most of the year. A record-breaking flood occurred October 1, 2 in a localized area west of Lake Okeechobee in southern Florida and during March medium to record-high flow occurred at many gaging stations in the State of Georgia. Drought conditions prevailed over most of the area covered by this report during the last three months of the water year. For three key gaging stations in the area covered by this report, a comparison of the monthly and yearly mean discharges during the 1952 water year with the median discharge for the 25-year period 1921-45 is shown in figure 4 on the opposite page.

Figure 3.-Making discharge measurement on Fisheating Creek at Palmdale, Fla., during hurricaneflood in October 1951.

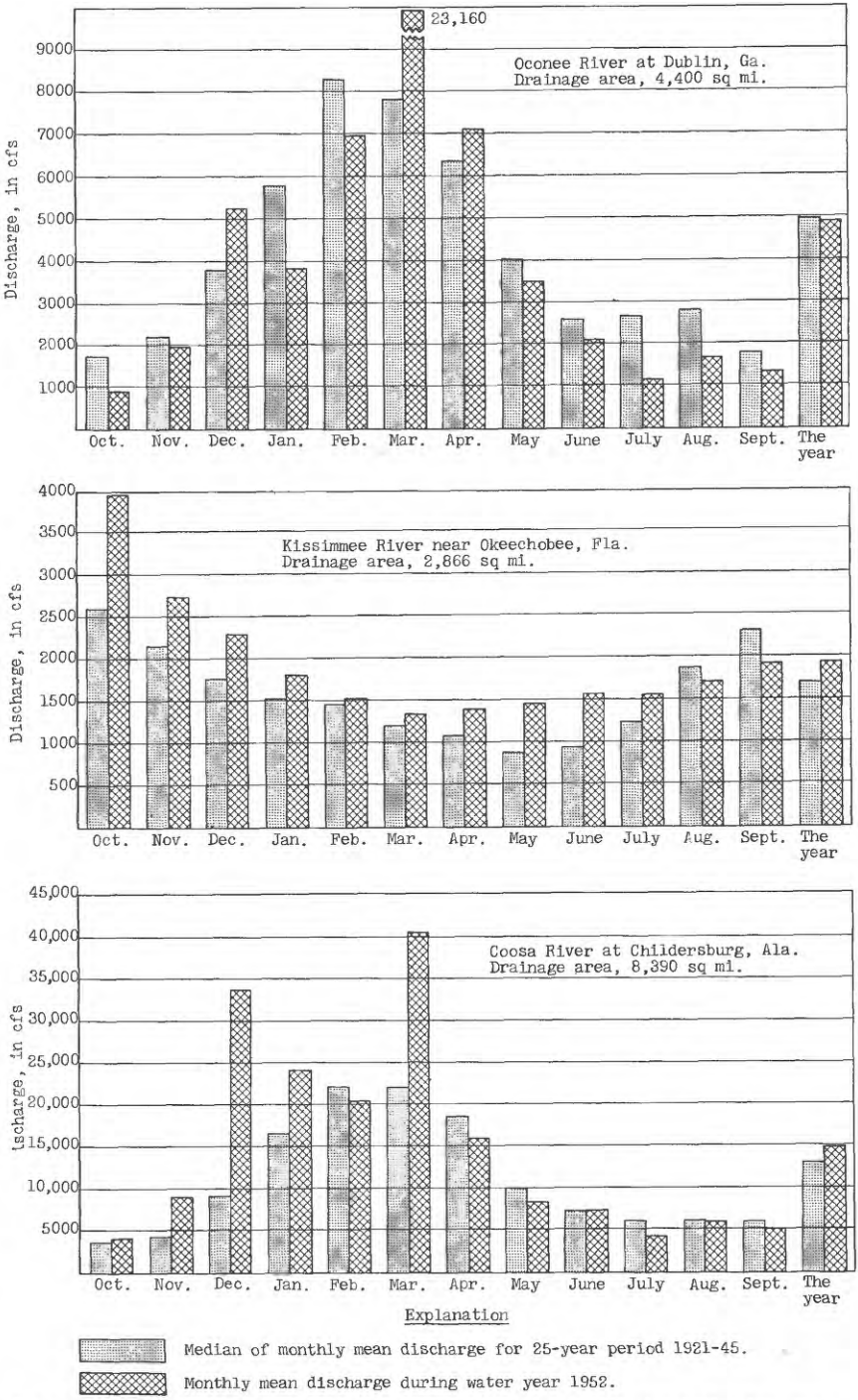

Figure 4.--Comparison of discharge at three key gaging stations during 1952 water year with median discharge for 25-year period.

OGEECHEE RIVER BASIN

Ogeechee River at Scarboro, Ga.

Location.--Lat 32°42'40", long. 81°52'45", on left bank 15 ft downstream from highway bridge at Scarboro, Jenkins County, 3½ miles downstream from Sculls Creek, 6½ miles upstream from Horse Creek, and 7½ miles southeast of Millen.

Drainage area.--1,940 sq mi, approximately.

Records available.--April 1937 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 111.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1936 (levels by Corps of Engineers). Prior to Dec. 18, 1941, staff gage at same site and datum.

Average discharge.--15 years, 1,701 cfs.

Extremes.--Maximum discharge during year, 11,000 cfs Mar. 11 (gage height, 10.32 ft); minimum, 184 cfs Oct. 19.
1937-52: Maximum discharge, 24,600 cfs Aug. 17, 1940, Mar. 27, 1944 (gage height, 12.8 ft); minimum observed, 146 cfs Sept. 28, 1938.
Maximum stage known, 17.0 ft in October 1929, from information by local residents.

Remarks.--Records good except those below 400 cfs, which are fair, and those for periods of no gage-height record, which are poor.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 17-30)

0.0	190	7.5	2,770
2.0	462	8.0	3,740
4.0	860	9.0	6,250
6.0	1,550	11.0	14,400
7.0	2,170		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	511	294	602	1,830	1,390	2,770	7,470	1,350	835	529	230	300
2	511	333	583	1,890	1,510	2,860	6,250	1,510	835	447	240	300
3	494	402	583	1,890	1,600	2,860	5,160	1,550	860	388	250	290
4	447	447	565	1,770	1,710	2,860	4,420	1,550	810	374	260	290
5	374	478	583	1,650	1,710	3,030	3,850	1,550	760	353	*270	290
6	326	511	602	1,550	1,650	3,320	3,420	1,510	720	353	280	290
7	294	565	621	1,430	1,600	3,850	3,030	1,470	700	340	290	290
8	268	602	640	1,390	1,600	4,540	2,770	1,390	700	326	374	280
9	248	640	700	*1,310	1,600	5,160	2,490	1,310	660	320	374	270
10	236	680	760	1,240	1,600	7,150	2,370	1,240	660	320	374	270
11	216	720	835	1,160	1,510	10,500	2,260	1,130	660	320	374	260
12	216	720	910	1,130	1,470	10,000	2,260	1,060	621	320	388	260
13	210	720	940	1,100	1,430	7,970	2,370	1,000	547	333	402	260
14	203	680	1,000	1,060	1,470	6,540	2,430	*970	511	326	432	250
15	190	640	1,030	1,030	1,650	5,560	2,430	1,000	511	310	478	250
16	*203	602	1,060	1,030	2,020	5,040	2,260	1,060	494	310	494	250
17	203	583	1,030	1,030	2,560	4,540	2,170	1,130	494	300	432	*248
18	190	565	1,000	1,000	2,700	4,910	2,020	1,160	511	290	374	274
19	190	565	940	1,000	3,320	5,830	1,890	1,160	547	290	353	307
20	190	621	910	970	3,850	5,420	1,770	1,130	583	280	374	320
21	196	680	940	940	*3,960	4,660	1,650	1,030	602	270	360	353
22	203	760	1,000	940	3,850	4,190	1,550	885	660	270	333	402
23	203	810	1,060	940	3,420	3,850	1,510	760	700	260	320	478
24	203	860	1,160	940	3,120	3,960	1,470	680	720	260	314	494
25	210	860	1,240	970	2,860	4,080	1,430	660	*720	250	307	494
26	229	860	1,350	1,030	2,770	4,780	1,390	680	680	240	320	511
27	242	810	1,470	1,100	2,770	6,400	1,390	700	602	240	320	529
28	262	*760	1,550	1,160	2,860	7,310	1,350	720	583	240	310	547
29	262	680	1,600	1,240	2,860	7,150	1,270	740	565	230	310	547
30	268	640	1,650	1,270	-	7,310	1,270	785	547	230	320	511
31	281	-	1,710	1,310	-	7,970	-	835	-	220	310	-
Total	8,279	19,088	30,624	38,300	66,420	166,370	77,370	33,705	19,398	9,539	10,567	10,415
Mean	267	636	988	1,235	2,290	5,367	2,579	1,087	647	308	341	347
Cfsm	0.138	0.328	0.509	0.637	1.18	2.77	1.33	0.560	0.334	0.159	0.176	0.179
In.	0.16	0.37	0.59	0.73	1.27	3.19	1.48	0.65	0.37	0.18	0.20	0.20

Calendar year 1951: Max 3,740 Min 190 Mean 922 Cfsm 0.475 In. 6.48
Water year 1951-52: Max 10,500 Min 190 Mean 1,339 Cfsm 0.690 In. 9.39

* Discharge measurement made on this day.

Note.--No gage-height record July 15 to Aug. 7, Aug. 26 to Sept. 16; discharge estimated on basis of weather records, 1 discharge measurement, and records for station near Eden.