Surface Water Supply of the United States 1955

Part 3–A. Ohio River Basin Except Cumberland and Tennessee River Basins

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1385

Prepared in cooperation with the States of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Virginia, and West Virginia, and with other agencies

Data for stations in the several States collected and prepared for publication in the district offices--Continued.

State	District office	Address
New York................	Albany..................	526 Federal Building.
North Carolina...........	Raleigh.................	Federal Building.
Ohio e/..................	Columbus................	1509 Hess Street.
Pennsylvania f/..........	Harrisburg..............	490 Education Building.
Virginia.................	Charlottesville.........	Natural Resources Building, University of Virginia.
West Virginia g/.........	Charleston..............	111 United States Courthouse.

e/ Except for Ohio River at Bellaire, Cincinnati, and Pomeroy.
f/ Except for Big Piney Run near Salisbury and Monongahela River at lock 8, at Point Marion but including Ohio River at Bellaire, Ohio.
g/ Including Ohio River at Pomeroy, Ohio, and Monongahela River at lock 8, at Point Marion, Pa.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

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

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

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

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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

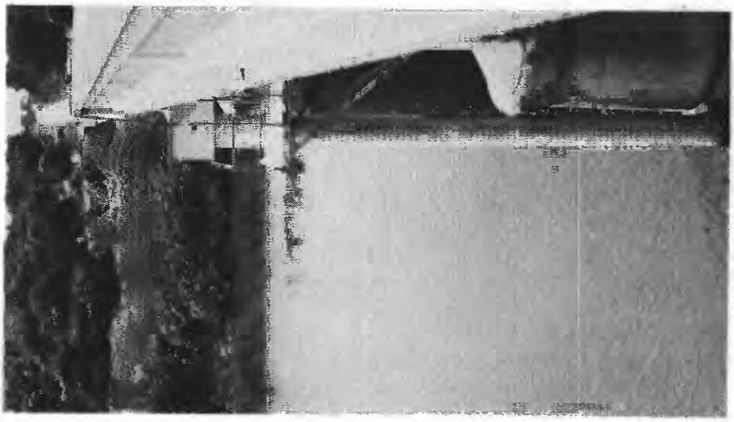
Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

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.

A, Stillwater River at Pleasant Hill, Ohio.

B, Cave Creek near Fort Spring, Ky.



C, Wabash River at Delphi, Ind.

FIGURE 1.—GAGING STATION STRUCTURES

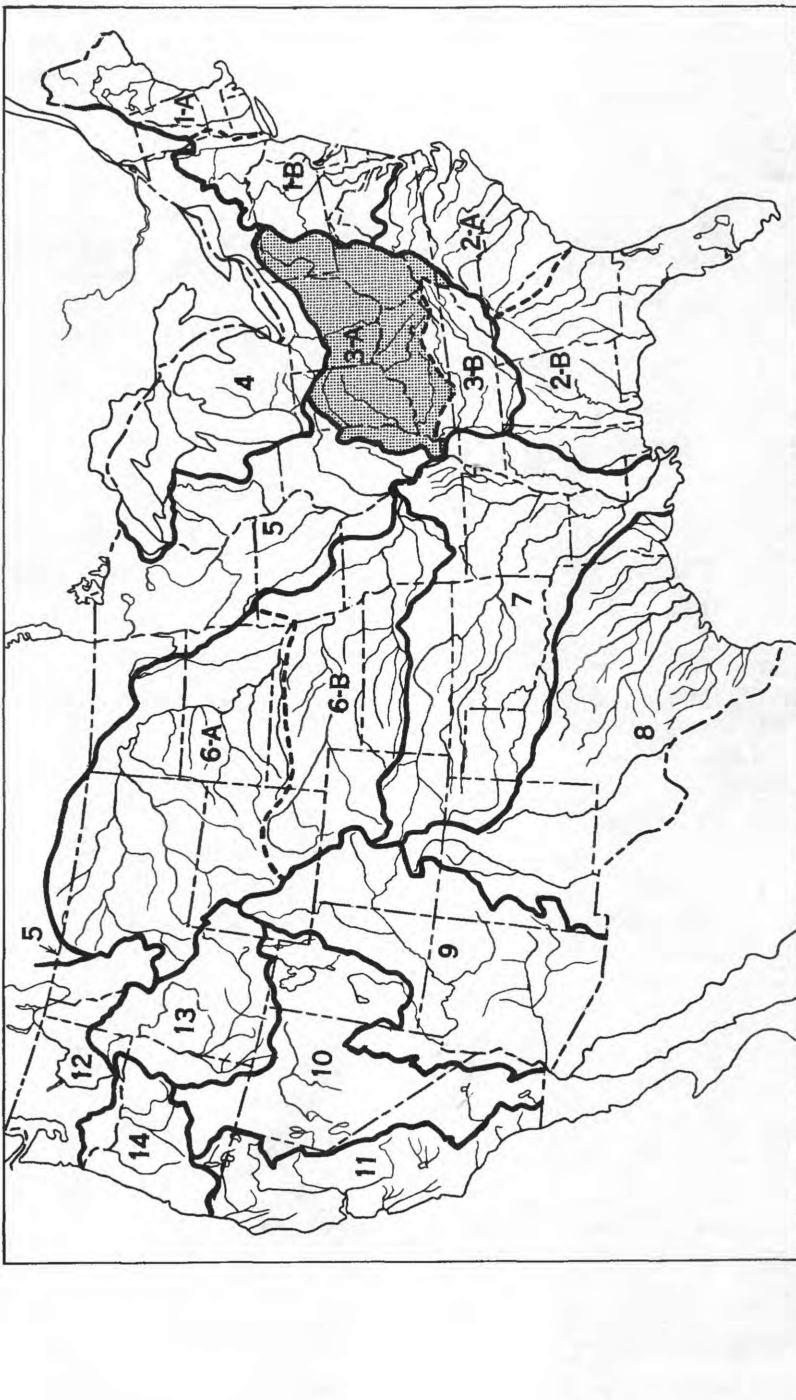


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

Records of discharge have been published also in State reports. Most of these records are also compiled in Water-Supply Paper 1305; however, some of them are not contained in the publications of the Geological Survey. 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
Illinois......	1908-11	Water resources of Illinois..............	Rivers and Lake Commission.
Do.........	1900-1934	Streamflow data of Illinois..............	Division of Waterways.
Indiana.......	1923-27	Pub. 72, Surface water supply of Indiana..	Department of Conservation.
Do.........	1927-30	Pub. 112, Surface water supply of Indiana.	Do.
Kentucky......	1910-20	Surface waters of Kentucky...............	Kentucky Geological Survey.
Maryland......	1892-1943	Bull. 1, Summary of records of surface waters of Maryland and the Potomac River basin.	Department of Geology, Mines, and Water Resources.
Do.........	1898-1952	Bull. 13, Geology and water resources of Garrett County.	Do.
North Carolina	1889-1923	Bull. 34, Discharge records of North Carolina streams.	Department of Conservation and Development.
Do.........	1889-1936	Bull. 39, Discharge records of North Carolina streams. a/	Do.
Ohio..........	1898-1921	Bull. 73, Ohio streamflow, Part 1.........	Engineering Experiment Station, Ohio State University.
Do.........	1898-1939	Bull. 111, Ohio stream-drainage areas and flow-duration tables.	Do.
Do.........	1898-1944	Bull. 127, Ohio streamflow, Part 2........	Do.
Do.........	1902-39	Bull. 200, Compilation of streamflow records of Ohio.	Department of Agriculture, Division of Conservation and Natural Resources.
Pennsylvania..	1890-1911	Report of Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do.........	1928-32	Streamflow records of Pennsylvania........	Department of Forests and Waters.
Virginia......	1895-1927	Bull. 31, Water resources of Virginia.....	Virginia Geological Survey.
Do.........	1927-42	Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River basins).	Virginia Conservation Commission.
Do.........	1942-50	Bull. 15, Surface water supply of Virginia (New, Tennessee, and Big Sandy River basins).	Do.

a/ Contains records of maximum and minimum daily, weekly and monthly discharge, and yearly mean discharge.

Note.--In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: Indiana, New York, and Pennsylvania.

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 or other agencies. 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 is a list of these reports:

Report	Issued by
WSP 147: Destructive floods in the United States in 1904.	U. S. Geological Survey.
WSP 162: Destructive floods in the United States in 1905.	Do.
WSP 334: The Ohio Valley flood of March-April 1913.	Do.
WSP 771: Floods in the United States, magnitude and frequency.	Do.
WSP 773-E: The New York State flood of July 1935.	
WSP 800: The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers.	Do.
WSP 838: Floods of Ohio and Mississippi Rivers, January-February 1937.	Do.
WSP 847: Maximum discharges at stream-measurement stations through September 1938.	Do.
WSP 869: Flood of August 1935 in Muskingum River basin, Ohio	Do.
WSP 967-B: Flood of July 5, 1939, in eastern Kentucky.	Do.
WSP 1066: Floods of August 1940 in the southeastern States.	Do.
WSP 1134-A: Floods of August 4-5, 1943, in Central West Virginia.	Do.
WSP 1134-B: Floods of July 18, 1942, in North Central Pennsylvania.	Do.
WSP 1137-I: Summary of floods in the United States during 1950.	Do.
Bull. 7: Floods in Ohio, magnitude and frequency.	Ohio Water Resources Board.
Bull. 9: The flood of June 1946 in Wayne and Holmes Counties, Ohio	Do.
Bull. 14: Local floods in Ohio during 1947.	Do.

Special reports on floods published by the Geological Survey and other agencies--Continued

Report	Issued by
Cir. 204: Floods in Youghiogheny and Kiskiminetas River basins, Pennsylvania and Maryland, frequency and magnitude.	U. S. Geological Survey.
The Miami Valley and the 1913 flood.	The Miami Conservancy District.
The floods of March 1936 in Pennsylvania.	Pennsylvania Department of Forests and Waters.
The floods of May 1943 in Illinois.	Illinois Division of Waterways.
Floods in Illinois, magnitude and frequency.	Do.
Unit hydrographs in Illinois.	Do.
The Crooksville area flood of June 16-17, 1950.	Ohio Division of Water.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The Corps of Engineers has been collecting records of daily discharge of Licking River near Butler, Ohio, beginning in 1946 and the Agricultural Reaearch Service of the United States Department of Agriculture has been collecting records of runoff from selected areas in the Ohio River basin as follows: near Blacksburg, Va., beginning in 1939, 4 areas of less than 20 acres each; near Coshocton, Ohio, beginning in 1937, 4 areas of 500 to 5,000 acres each, 5 areas of 100 to 500 acres each, 2 areas of 50 to 100 acres each, 2 areas of 20 to 50 acres each, and 22 areas of less than 10 acres each.

HYDROLOGIC CONDITIONS

The water year 1955 was characterized by above median runoff over most of the area covered by this report except in Illinois, Indiana, North Carolina, and Ohio where the runoff was generally below median. Record breaking floods occurred in Maryland, Pennsylvania, and West Virginia during October as the result of heavy rains associated with hurricane Hazel. Noteworthy floods also occurred in Kentucky and West Virginia during March and in the extreme eastern portion of the area during August. The August floods were the result of the passage of hurricanes Connie and Diane. Local flash floods also occurred on small streams in central Kentucky due to severe thunderstorms on July 8. For three key gaging stations in the area, a comparison of the monthly and yearly mean discharge during the 1955 water year with the median discharge for the 25-year period 1921-45 is shown in figure 3 on the following page.

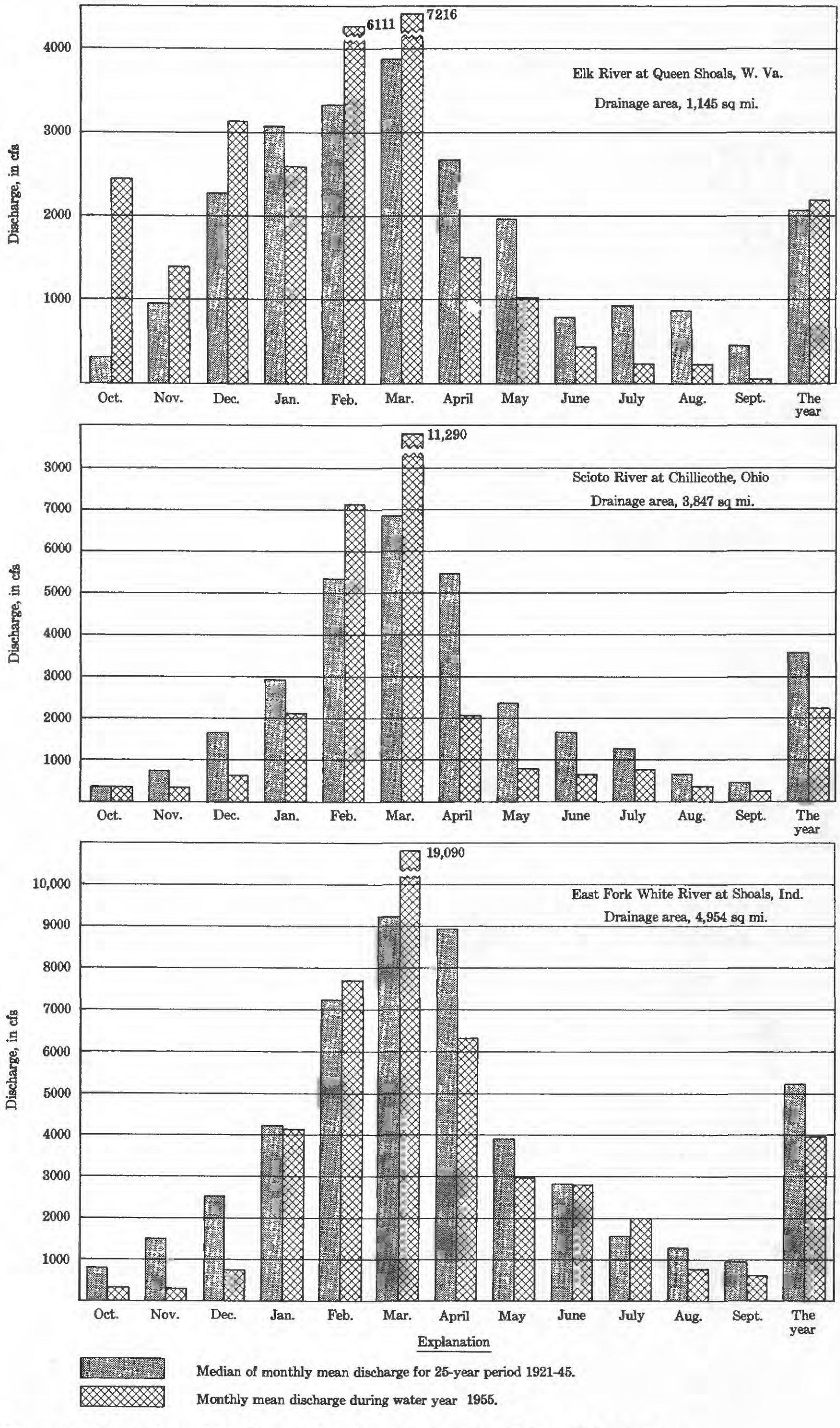


Figure 3. Comparison of discharge at three key gaging stations during 1955 water year with median discharge for 25-year period.