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SURFACE WATER SUPPLY *of the* UNITED STATES

1931

PART 3

OHIO RIVER BASIN

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FIGURE 1. Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car- 3

SURFACE WATER SUPPLY OF OHIO RIVER BASIN, 1931

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting records of measurements of flow made on streams in the United States during the year ending September 30, 1931.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat. L., p. 394):

Provided, That this officer [the director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following items:

For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895–1932

1895	$12,500.00	1908–1910	$100,000.00	1926	$165,000.00
1896	24,500.00	1911–1917	150,000.00	1927	151,000.00
1897–1899	50,000.00	1918	175,000.00	1928	147,000.00
1900	70,000.00	1919	148,244.10	1929	270,500.00
1901–2	100,000.00	1920	175,000.00	1930	275,000.00
1903–1906	200,000.00	1921–1923	180,000.00	1931	565,000.00
1907	150,000.00	1924–25	170,000.00	1932	711,000.00

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 10.

Measurements of stream flow have been made at about 6,270 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1931, 2,660 gaging stations were being maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in the water-supply papers from time to time.

DEFINITION OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, and acre-feet. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation"—an abbreviation for the term "relation of gage height to discharge."

"Control"—a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1930, and ending September 30, 1931. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as underground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff or chain gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of

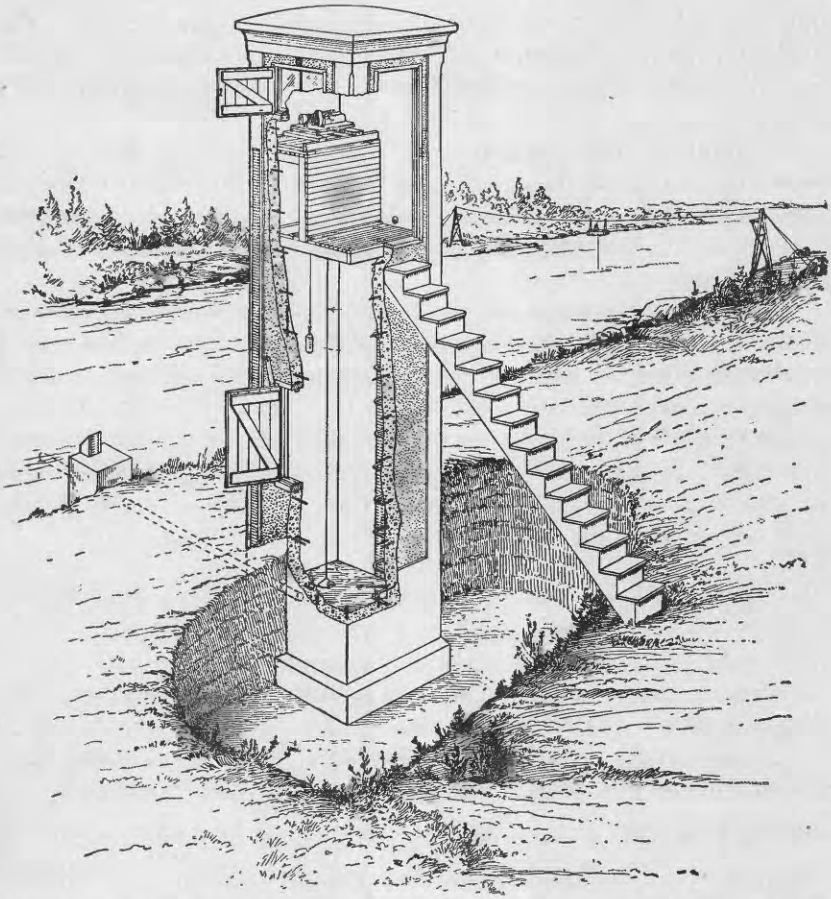

FIGURE 1.—Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car

discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is computed.

The data presented for each gaging station in the area covered by this report comprise a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off.

The description of the station gives, in addition to statements regarding location and type of gage, information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded discharges, and the accuracy of the records. The maximum discharge given under "Extremes" does not represent the crest discharge unless a water-stage recorder was in operation or a nonrecording gage was read at the time of the crest.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the daily gage height, which may be a once daily reading or the mean of twice daily readings of a nonrecording gage, or the mean daily gage height obtained from a water-stage recorder graph.

At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals during the day or by using the discharge integrator, an instrument for obtaining mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the maximum daily discharge, and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 2.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation, and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that records are accurate within 5 per cent; "good", within 10 per cent; "fair," within 15 per cent; and "poor", within 20 per cent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing

districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches.

The table of monthly discharge gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

Many gaging stations on streams in the irrigated sections of the United States are situated above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the stations must first be satisfied.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, underground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the bulletins, professional papers, monographs, and annual reports.

The results of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

PART 1. North Atlantic slope basins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.
9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. North Pacific slope drainage basins, in three parts:
    - A, Pacific slope basins in Washington and upper Columbia River Basin.
    - B, Snake River Basin.
    - C, Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below:

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will on application furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Augusta, Me., Statehouse.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 318 State Office Building.
Albany, N. Y., 603 State Public Works Building.
Trenton, N. J., 710 Trenton Trust Building.
Harrisburg, Pa., 604 Claster Building.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 220 Post Office Building.
Columbia, S. C., 801 National Loan & Exchange Bank Building.
Ocala, Fla., Post Office Building.
Tuscaloosa, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Indianapolis, Ind., 319 Federal Building.
Urbana, Ill., 302 University New Agricultural Building.
Madison, Wis., 337N State Capitol.
St. Paul, Minn., 632 State Office Building.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.
Santa Fe, N. Mex., State Capitol.
Tucson, Ariz., 210 Post Office Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 303 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 416 Power Block.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 751 South Figueroa Street, room 510.
Honolulu, Hawaii, Territorial Office Building.

A list of the Geological Survey publications may be obtained by applying to the Director, United States Geological Survey, Washington, D. C.

Stream-flow records have been obtained at about 6,270 points in the United States, and the data obtained have been published in the reports tabulated on page 7.

Stream-flow data in reports of the United States Geological Survey

[A=Annual Report; B=Bulletin; W=Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to September, 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893–94.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895–96.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas River.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	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.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.
W 601 to 614	do	1925.
W 621 to 634	do	1926.
W 641 to 654	do	1927.
W 661 to 674	do	1928.
W 681 to 694	do	1929.
W 696 to 709	do	1930.
W 711 to 724	do	1931.

The records at most of the stations discussed in these reports extend over a series of 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, in the same relative order as the regular gaging stations. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1931. The data for any particular station will, as a rule, be found in the reports covering the years during which the station was maintained. For example, data from 1910 to 1920 for any station in the area covered by Part 3 are published in Water-Supply Papers 283, 303, 323, 353, 383, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899–1931

[For basins included see p. 5]

Year	1	2	3	4	5	6	7	8	9	10	11	12-A	12-B	12-C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [i] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125, [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166, [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211, [s] 213	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332-A	332-B	332-C
1913	351	352	353	354	355	356	357	358	359	360	361	362-A	362-B	362-C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928	661	662	663	664	665	666	667	668	669	670	671	672	673	674
1929	681	682	683	684	685	686	687	688	689	690	691	692	693	694
1930	696	697	698	699	700	701	702	703	704	705	706	707	708	709
1931	711	712	713	714	715	716	717	718	719	720	721	722	723	724

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, Part 4.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Colorado River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Tables of monthly discharge for 1900 in Twenty-second Annual Report, Part 4.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte River.
[k] Tributaries of Mississippi River from east.
[l] Lake Ontario and tributaries to St. Lawrence River.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] The Great Basin in California, except Truckee and Carson River Basins.
[s] Below junction with Gila River.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in the several States was done under cooperative agreements as follows: In Illinois with the Illinois Department of Purchases and Construction, division of waterways, William F. Mulvihill and Judge Benjamin H. Miller, supervisors; in Indiana with the Department of Conservation, Denzil Doggett, assistant State engineer; in Kentucky with the Kentucky Geological Survey, Willard R. Jillson, director; in New York with the Department of Public Works, Frederick Stuart Greene, superintendent; in North Carolina with the Department of Conservation and Development, John W. Harrelson, director; in Ohio with the Ohio Cooperative Topographic Survey, C. E. Sherman, inspector; in Tennessee with the Tennessee Geological Survey, Walter F. Pond, State geologist; in Virginia with the Conservation and Development Commission, W. E. Carson, chairman; in West Virginia with the State Geological Survey, James D. Sisler, State geologist, and the Public Service Commission, I. Wade Coffman, chairman.

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DIVISION OF WORK

The data for stations in the several States were collected and prepared for publication as follows: In Illinois by J. H. Morgan, district engineer, assisted by L. C. Crawford and C. L. Muntz; in Indiana and in Licking, Kentucky, Salt, Green and Tradewater River Basins in Kentucky, by H. E. Grosbach, district engineer, assisted by F. L. LeMert, W. D. Mitchell, W. P. Cross, R. L. Spencer, and Mrs. C. Perrin; in New York by Arthur W. Harrington, district engineer, assisted by J. L. Lamson, F. C. Christopherson, J. V. B. Wells, R. H. Brigham, W. B. Hanlon, Kyle Forrest, Miss A. D. Buchanan, and Miss E. L. Connors; in North Carolina by E. D. Burchard, district

engineer, assisted by F. M. Bell, R. W. Sundstrom, R. E. Cabell, H. A. Taylor, A. G. Hely, and Mrs. Effie T. Workman; in Ohio by Lasley Lee, district engineer, assisted by J. I. Perrey, C. V. Youngquist, L. Engstrom, C. L. Muntz, H. E. Cox, J. P. Bonner, and H. P. Brooks; in the Cumberland and Tennessee River Basins in Alabama, Georgia, Kentucky, and Tennessee, by W. R. King, district engineer, assisted by Warren Withee, Duncan Charlton, C. E. Knox, M. R. Williams, W. R. Eaton, S. C. Moore, W. J. Perry, F. W. Wagener, H. M. Erskine, R. P. Mangold, and Miss Gladys Boulton; in Virginia by J. J. Dirzulaitis, district engineer, assisted by O. D. Mussey, A. R. Green, T. F. Hanly, F. F. Schrader, H. C. Eagle, A. D. Ash, E. A. Gdaniec, P. N. Schackelford, and Miss S. F. Norris; in West Virginia and Levisa Fork at Paintsville, Ky., by Wm. Kessler, district engineer, assisted by M. T. Thomson.

Records were reviewed by F. L. LeMert and A. G. Hely. The manuscript was assembled by A. G. Hely.

GAGING-STATION RECORDS

ALLEGHENY RIVER BASIN

ALLEGHENY RIVER AT RED HOUSE, N. Y.

LOCATION.—Water-stage recorder at highway bridge in Red House, Cattaraugus County.
DRAINAGE AREA.—1,640 square miles.
RECORDS AVAILABLE.—September, 1903, to September, 1931.
EXTREMES.—Maximum discharge during year, 15,000 second-feet Apr. 11 (gage height, 8.64 feet); minimum, 87 second-feet Nov. 28 (gage height, 2.79 feet). 1903–1931: Maximum discharge, 41,000 second-feet Mar. 2, 1910 (gage height, 13.6 feet); minimum, that of Nov. 28, 1930.
REMARKS.—Records good except those for periods of ice effect, Nov. 29 to Dec. 5, Dec. 14 to Feb. 22, and those estimated for Dec. 11–13, May 23–30, July 24, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	155	950	280	500	1,640	7,040	6,150	2,990	470	585	267
2	133	155	2,000	300	420	1,700	7,340	5,180	2,470	433	535	246
3	127	149	1,800	320	360	1,480	7,360	5,180	2,010	468	1,460	310
4	122	138	1,400	340	320	1,250	9,140	4,660	1,710	819	1,420	460
5	122	133	950	340	300	1,100	12,400	3,790	1,500	647	1,020	575
6	117	122	780	340	280	955	11,200	3,320	1,360	535	759	433
7	112	133	1,510	340	280	843	10,100	2,880	3,440	451	605	350
8	112	143	1,510	320	280	795	8,680	3,630	8,610	416	516	304
9	112	138	1,180	320	320	795	9,020	5,870	9,020	383	785	260
10	112	133	942	340	280	783	11,600	5,590	8,680	375	1,470	240
11	112	133	795	360	280	713	14,800	5,590	7,150	425	1,450	226
12	112	138	1,110	360	260	680	12,800	5,180	5,190	565	1,110	212
13	112	143	1,060	360	280	585	10,800	5,460	3,520	525	892	205
14	112	143	850	340	460	625	9,020	5,320	2,670	433	735	226
15	112	155	650	340	650	636	7,040	4,790	2,570	383	702	240
16	112	155	550	320	600	713	5,460	4,280	2,180	358	615	320
17	117	162	500	320	550	771	4,160	4,160	1,830	342	525	614
18	127	174	460	320	700	795	3,550	4,160	1,530	342	470	647
19	133	174	380	320	1,400	993	2,990	3,550	1,260	342	442	545
20	127	168	340	340	1,900	1,100	2,570	3,550	1,220	358	400	442
21	122	162	320	320	1,800	1,540	2,180	3,550	1,190	576	358	383
22	117	155	300	300	1,600	2,650	1,940	2,990	1,020	3,730	350	350
23	107	143	280	280	1,460	3,490	2,180	4,100	905	2,640	312	304
24	112	143	280	280	1,280	3,970	2,470	10,400	819	1,880	289	274
25	117	138	280	280	1,220	4,660	2,470	9,480	783	1,420	289	274
26	117	138	320	420	1,340	5,460	3,900	7,280	747	1,110	267	297
27	122	138	320	950	1,360	5,180	7,520	5,870	680	855	407	367
28	149	122	280	1,100	1,370	7,550	7,840	5,050	625	713	416	416
29	155	120	280	1,100	-------	12,800	8,340	4,280	555	615	367	367
30	168	180	260	750	-------	11,200	7,680	3,790	507	595	335	304
31	162	-------	280	600	-------	8,000	-------	3,320	-------	605	304	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	168	107	124	0.076	0.09
November	180	120	146	.089	.10
December	2,000	260	739	.451	.52
January	1,100	280	419	.255	.29
February	1,900	260	780	.476	.50
March	12,800	585	2,760	1.68	1.94
April	14,800	1,940	7,140	4.35	4.85
May	10,400	2,880	4,920	3.00	3.46
June	9,020	507	2,620	1.60	1.78
July	3,730	342	768	.468	.54
August	1,470	267	651	.397	.46
September	647	205	349	.213	.24
The year	14,800	107	1,780	1.09	14.77

MONONGAHELA RIVER BASIN

TYGART RIVER NEAR DAILEY, W. VA.

LOCATION.—Chain gage at Burnt Bridge, 1,000 feet above Stalnaker Run and 1 mile northeast of Dailey, Randolph County.
DRAINAGE AREA.—194 square miles.
RECORDS AVAILABLE.—April, 1915, to September, 1931.
EXTREMES.—Maximum discharge during year, 2,880 second-feet Aug. 23 (gage height, 7.35 feet); no flow Oct. 1 to Nov. 30.
1915–1931: Maximum discharge, 9,150 second-feet Mar. 13, 1918 (gage height, 15.9 feet); no flow Sept. 12 to Nov. 30, 1930.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	132	124	202	395	202	275	37	21	153
2	10	94	96	335	775	176	275	30	22	113
3	10	89	82	365	535	202	202	140	54	100
4	10	87	74	290	1,700	185	153	120	305	96
5	20	96	65	245	1,640	164	153	75	102	75
6	15	800	56	153	910	144	136	63	79	58
7	116	500	54	146	650	134	157	430	56	51
8	132	215	61	202	570	730	1,250	168	42	45
9	73	200	365	380	1,640	535	1,150	109	33	38
10	43	155	820	245	1,300	365	650	305	134	30
11	31	90	380	202	865	275	365	570	230	28
12	33	90	260	171	690	275	245	245	148	30
13	45	90	230	151	570	465	202	162	128	36
14	40	66	650	395	412	910	500	93	109	27
15	32	64	500	955	335	730	320	72	79	25
16	32	82	305	955	260	482	1,250	58	62	26
17	26	73	395	610	215	380	910	54	50	27
18	21	56	910	500	185	320	430	63	40	30
19	20	132	910	465	157	275	178	67	40	28
20	20	260	730	570	128	350	148	48	185	28
21	15	140	430	430	109	1,880	132	42	1,100	42
22	18	111	320	465	128	1,100	113	55	2,740	54
23	19	275	245	380	290	2,420	99	65	2,420	40
24	19	305	173	320	365	1,350	178	68	955	142
25	16	82	153	412	650	1,000	114	80	448	90
26	21	148	136	465	690	610	76	56	290	570
27	275	465	114	412	1,000	412	65	48	230	570
28	448	500	92	465	690	290	69	42	215	305
29	245	290	------	1,150	412	215	54	28	690	260
30	183	190	------	730	275	180	44	24	395	157
31	132	144	------	448	------	350	------	22	215	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
December	448	3	68.5	0.353	0.41
January	800	56	194	1.00	1.15
February	910	54	312	1.61	1.68
March	1,150	146	426	2.20	2.54
April	1,700	109	618	3.19	3.56
May	2,420	134	552	2.85	3.29
June	1,250	44	330	1.70	1.90
July	570	22	111	.572	.66
August	2,740	21	375	1.93	2.22
September	570	25	109	.562	.63
The year	2,740	0	257	1.32	18.04

NOTE.—No flow during October and November.

TYGART RIVER AT BELINGTON, W. VA.

LOCATION.—Chain gage at highway bridge at Belington, Barbour County, a quarter of a mile above Mill Creek. Zero of gage is 1,679.89 feet above mean sea level.

DRAINAGE AREA.—390 square miles.

RECORDS AVAILABLE.—June, 1907, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,160 second-feet May 23 (gage height, 10.56 feet); minimum, 0.5 second-foot Oct. 4 (gage height, 1.66 feet).

1907–1931: Maximum discharge, 20,100 second-feet Mar. 13, 1917 (gage height, 21.48 feet); minimum, 0.1 second-foot Sept. 13, 1930 (gage height, 1.56 feet).

REMARKS.—Records good. Some water diverted from Cheat River Basin into Tygart River at Elkins during October and November.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	3.1	14	210	340	428	1,170	525	682	71	228	405
2	.9	4.1	16	159	273	1,470	1,980	450	575	62	59	288
3	.8	3.8	17	138	220	1,230	1,610	500	475	252	45	262
4	.5	3.8	14	140	198	875	1,410	525	360	360	120	252
5	.7	3.8	46	159	174	600	3,710	450	450	204	207	220
6	1.0	3.3	52	2,380	142	475	1,980	405	525	140	171	150
7	.8	3.8	162	1,680	130	382	1,610	360	428	135	111	118
8	.9	3.8	300	710	142	500	1,470	990	1,110	382	80	90
9	1.0	4.4	214	428	710	710	2,880	1,540	2,140	195	58	74
10	1.0	3.8	132	360	2,620	655	2,380	1,050	1,750	228	56	72
11	.9	4.1	98	245	1,350	500	1,980	765	990	990	40	63
12	.8	3.5	72	248	820	450	2,060	710	655	738	245	50
13	.7	4.7	77	252	655	405	1,350	930	450	405	153	44
14	.8	4.7	86	220	1,230	765	990	3,060	525	220	130	42
15	.7	5.6	69	[a] 215	1,540	1,540	765	2,880	655	174	130	50
16	.7	5.3	71	210	1,050	2,220	628	1,610	875	135	92	140
17	.7	6.2	65	201	820	1,470	500	1,110	1,110	116	74	88
18	.8	6.2	55	130	2,300	1,110	450	820	500	90	56	80
19	.8	6.9	37	201	2,380	1,050	360	930	259	107	56	63
20	.9	6.9	40	990	1,680	1,470	320	1,230	231	116	128	69
21	1.0	6.9	29	765	1,110	1,350	273	4,210	195	77	930	56
22	1.0	7.3	27	360	820	1,170	259	3,610	252	65	3,810	60
23	.9	6.9	27	284	600	1,110	475	5,830	180	68	3,060	80
24	1.7	6.9	24	360	500	820	765	4,110	201	102	2,220	71
25	1.7	8.5	22	320	450	875	1,230	2,790	262	94	990	189
26	1.9	8.9	27	500	405	1,290	1,410	2,700	195	80	550	284
27	1.7	11	123	930	312	1,230	2,060	1,410	150	77	428	1,470
28	3.1	11	655	1,350	312	1,110	1,540	930	132	62	360	682
29	3.3	9.3	628	875	-------	1,680	990	600	109	51	930	525
30	3.3	11	360	600	-------	1,900	710	475	92	40	1,410	360
31	3.5	-------	204	428	-------	1,230	-------	655	-------	37	655	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3.5	0.5	1.26	0.0032	0.004
November	11	3.1	5.98	.015	.02
December	655	14	121	.301	.35
January	2,380	130	518	1.33	1.53
February	2,620	130	832	2.13	2.22
March	2,220	382	1,030	2.64	3.04
April	3,710	259	1,310	3.36	3.75
May	5,830	360	1,550	3.97	4.58
June	2,140	92	550	1.41	1.57
July	990	37	189	.485	.56
August	3,810	40	567	1.45	1.67
September	1,470	42	213	.546	.61
The year	5,830	.5	573	1.47	19.90

[a] Interpolated.

TYGART RIVER AT FETTERMAN, W. VA.

LOCATION.—Chain gage at highway bridge at Fetterman, Taylor County, three-quarters of a mile above Otter Creek. Zero of gage is 957.86 feet above mean sea level.

DRAINAGE AREA.—1,340 square miles.

RECORDS AVAILABLE.—June, 1907, to September, 1931.

EXTREMES.—Maximum discharge during year, 15,500 second-feet May 23 (gage height, 12.12 feet); minimum, 1.1 second-feet Oct. 21 (gage height, 2.23 feet).

1907–1931: Maximum discharge, about 57,600 second-feet July 25, 1912 (gage height, 29.1 feet); minimum, 1.1 second-feet Oct. 21, 1930 (gage height, 2.23 feet).

REMARKS.—Records good. Discharge estimated because of ice effect Dec. 18–25.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	1.9	18	481	1,160	1,500	3,640	1,880	1,800	268	160	1,800
2	4.0	2.1	27	402	1,010	3,460	6,470	1,570	1,570	219	152	1,290
3	4.0	2.0	50	350	800	4,520	6,290	1,640	1,290	167	243	1,100
4	3.5	2.3	45	395	671	3,460	6,120	1,800	1,100	350	243	1,430
5	3.0	2.5	42	410	586	2,580	7,360	1,640	1,570	541	193	1,160
6	2.6	2.6	85	3,460	505	1,800	7,180	1,430	2,930	473	250	910
7	2.1	2.5	209	6,820	473	1,570	5,940	1,290	2,580	336	425	690
8	1.9	2.6	365	3,990	473	1,500	5,410	2,750	2,220	256	336	514
9	1.8	2.6	614	2,310	1,030	2,220	4,880	4,340	4,520	497	243	410
10	1.4	2.5	595	1,500	6,120	2,580	5,760	3,990	5,940	523	193	336
11	1.6	2.6	441	1,220	5,580	2,220	4,880	3,110	3,810	701	160	280
12	1.4	2.6	358	934	3,110	1,800	5,580	2,400	2,580	2,050	141	225
13	1.3	2.5	294	958	2,580	1,500	4,700	2,400	1,720	1,290	268	193
14	1.3	2.6	268	934	3,460	1,880	3,460	7,360	1,290	833	350	167
15	1.2	2.5	268	811	5,760	3,460	2,580	8,260	1,220	559	268	152
16	1.3	2.5	231	671	4,170	5,410	1,960	5,410	1,160	395	256	160
17	1.3	2.6	177	541	3,110	4,520	1,570	3,640	1,720	336	219	172
18	1.6	5.2	160	586	5,580	3,280	1,360	2,750	1,220	322	167	541
19	1.3	7.0	135	586	8,080	2,750	1,220	2,400	800	322	152	514
20	1.2	9.0	120	982	6,650	3,460	1,020	2,750	595	294	268	329
21	1.2	11	105	2,220	4,700	3,990	877	5,940	449	308	1,640	329
22	1.2	15	95	1,720	3,280	3,460	811	9,030	372	336	7,720	280
23	1.3	13	90	1,500	2,490	3,280	1,160	15,500	395	308	7,540	231
24	1.3	13	85	1,160	2,050	2,750	1,800	12,700	395	268	5,230	358
25	1.3	12	80	1,220	1,640	3,280	2,140	8,080	577	380	2,930	350
26	1.4	13	90	1,010	1,430	4,170	3,280	9,430	652	372	1,800	3,990
27	1.4	15	127	1,360	1,220	4,340	4,700	5,580	473	308	1,960	3,110
28	1.6	13	662	2,580	1,100	3,810	4,700	3,280	410	256	1,960	3,110
29	1.9	12	1,030	2,580	-------	3,810	3,460	2,310	336	188	2,050	1,720
30	1.8	13	1,220	1,880	-------	4,880	2,490	1,720	280	156	4,880	1,360
31	1.9	-------	844	1,500	-------	3,640	-------	1,570	-------	152	2,930	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4.0	1.2	1.87	0.0014	0.002
November	15	1.9	6.42	.0048	.005
December	1,220	18	288	.215	.25
January	6,820	350	1,520	1.13	1.30
February	8,080	473	2,810	2.10	2.19
March	5,410	1,500	3,130	2.34	2.70
April	7,360	811	3,760	2.81	3.14
May	15,500	1,290	4,450	3.32	3.83
June	5,940	280	1,530	1.14	1.27
July	2,050	152	444	.331	.38
August	7,720	141	1,460	1.09	1.26
September	3,990	152	907	.677	.76
The year	15,500	1.2	1,680	1.25	17.09

MIDDLE FORK AT MIDVALE, W. VA.

LOCATION.—Staff gage a third of a mile above Midvale station on Coal & Coke Railway, Randolph County, and 1¾ miles below Laurel Creek.

DRAINAGE AREA.—122 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,020 second-feet May 23 (gage height, 6.80 feet); minimum, about 0.1 second-foot part of October (gage height, 0.80 foot).

1915–1931: Maximum gage height, 16.1 feet Jan. 28, 1918 (discharge not determined because of ice effect); no flow Sept. 15–25, 1930.

Floods of 1888 and 1912 reached gage height of about 18 feet.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet. 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.3	10	210	149	332	450	210	157	28	4.5	188
2	-------	.3	55	125	125	510	545	159	133	24	4.0	133
3	-------	.3	29	125	101	420	450	210	105	31	3.2	136
4	-------	.3	18	133	97	332	655	165	85	92	3.6	113
5	-------	.3	13	142	66	244	695	151	136	44	51	79
6	-------	.3	18	[a]1,400	54	188	580	145	133	34	31	65
7	-------	.6	178	1,250	75	178	450	131	125	51	12	64
8	-------	.4	116	735	82	256	405	306	1,000	37	10	40
9	-------	.4	69	[a]500	405	256	735	268	1,420	24	5.0	35
10	-------	.4	48	[a]400	615	199	545	233	695	73	6.0	32
11	-------	.5	40	[a]250	390	188	775	222	390	256	6.5	24
12	-------	.6	46	[a]220	293	167	615	222	268	124	24	21
13	-------	.6	53	[a]210	244	188	450	256	178	68	18	18
14	-------	.6	43	[a]200	655	210	319	655	140	45	23	16
15	-------	.9	38	[a]190	480	510	256	510	155	41	15	20
16	-------	.9	32	[a]160	375	510	188	390	109	37	11	29
17	-------	1.0	29	[a]160	390	405	155	319	89	61	3.6	24
18	-------	1.2	27	[a]160	910	319	143	256	68	38	3.2	26
19	-------	1.2	28	[a]160	910	450	122	346	51	37	21	36
20	-------	1.1	24	545	615	615	105	655	43	26	199	31
21	-------	.9	24	346	450	510	93	1,540	50	21	820	33
22	-------	1.2	31	332	319	580	98	910	40	28	1,050	29
23	-------	1.6	20	319	256	450	178	1,840	57	40	655	22
24	-------	1.6	19	222	222	375	178	1,050	167	46	405	29
25	-------	1.6	16	155	188	480	450	910	79	36	233	30
26	-------	1.5	22	256	163	580	420	655	55	24	155	199
27	-------	2.0	319	480	136	510	775	405	58	17	118	167
28	-------	2.2	360	510	125	580	480	280	51	15	113	142
29	-------	3.2	256	293	-------	735	375	306	39	11	910	116
30	.2	3.0	233	244	-------	480	256	149	30	8.0	655	87
31	.3	-------	280	199	-------	360	-------	178	-------	6.0	280	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	----------	[a]0.1	[a]0.2	0.0016	0.002
November	3.2	.3	1.03	.0084	.009
December	360	10	80.5	.660	.76
January	1,400	125	343	2.81	3.24
February	910	54	318	2.61	2.72
March	735	167	391	3.20	3.69
April	775	93	398	3.26	3.64
May	1,840	131	453	3.71	4.28
June	1,420	30	204	1.67	1.86
July	256	6.0	45.9	.376	.43
August	1,050	3.2	189	1.55	1.79
September	199	16	66.1	.542	.60
The year	1,840	.1	207	1.70	23.02

[a] Estimated.

BUCKHANNON RIVER AT HALL, W. VA.

LOCATION.—Staff gage a quarter of a mile above highway bridge at Hall, Barbour County, and 1 mile above Pecks Run.

DRAINAGE AREA.—277 square miles.

RECORDS AVAILABLE.—June, 1907, to May, 1909; April, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,220 second-feet Aug. 22 (gage height, 5.55 feet); minimum, 0.2 second-foot Oct. 23, 27 (gage height, 1.30 feet).

1915–1931: Maximum discharge, about 12,000 second-feet Mar. 14, 1918 (gage height, 14.7 feet); minimum, that of October, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.3	2.8	135	230	311	1,130	389	327	67	81	458
2	.4	.3	2.8	125	194	1,030	1,840	299	270	56	112	299
3	.4	.3	3.0	106	169	975	1,340	358	217	49	74	276
4	.3	.3	34	81	145	720	1,180	373	179	39	81	342
5	.3	.4	41	112	135	522	1,510	311	243	38	125	282
6	.3	.4	39	1,340	116	406	1,240	276	820	39	179	197
7	.3	.4	35	1,510	103	342	1,340	252	720	38	135	162
8	.3	.4	74	770	109	522	1,290	570	975	78	95	135
9	.3	.4	162	522	423	975	1,130	720	1,960	119	74	112
10	.3	.4	125	406	1,510	670	975	570	1,400	109	49	89
11	.4	.6	86	282	975	522	1,240	458	870	570	53	76
12	.4	.7	69	226	620	441	1,400	449	570	522	112	63
13	.3	1.0	60	243	522	389	975	432	373	270	116	54
14	.3	.9	78	276	1,400	670	720	1,130	264	183	89	48
15	.3	1.0	76	208	1,510	1,290	570	1,510	217	132	86	44
16	.3	.9	78	145	975	1,290	415	1,080	217	106	74	46
17	.3	1.2	60	158	770	975	311	770	197	119	60	54
18	.3	1.4	41	176	1,730	720	282	670	165	109	53	56
19	.3	1.2	38	176	1,960	670	239	720	132	95	53	51
20	.3	1.2	34	311	1,620	870	201	670	100	89	128	53
21	.2	1.4	32	466	1,080	922	183	975	84	100	975	48
22	.2	1.4	32	373	720	870	176	1,510	71	112	3,020	42
23	.2	1.4	26	282	522	820	258	2,400	76	119	1,960	44
24	.3	1.4	25	299	441	670	358	2,180	165	234	1,180	46
25	.2	1.7	22	248	373	770	381	1,730	201	190	720	44
26	.2	1.8	19	194	305	975	522	1,510	148	145	441	179
27	.2	2.0	39	243	264	975	975	922	109	100	327	720
28	.3	1.8	172	570	226	870	922	620	84	78	342	415
29	.2	2.0	230	458	-------	1,080	670	423	103	67	720	358
30	.3	2.2	190	327	-------	1,080	522	299	92	54	1,400	264
31	.3	-------	155	264	-------	770	-------	287	-------	48	770	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.4	0.2	0.29	0.0010	0.001
November	2.2	.3	1.03	.0037	.004
December	230	2.8	67.1	.242	.28
January	1,510	81	356	1.29	1.49
February	1,960	103	684	2.47	2.57
March	1,290	311	778	2.81	3.24
April	1,840	176	810	2.92	3.26
May	2,400	252	802	2.90	3.34
June	1,960	71	378	1.36	1.52
July	570	38	131	.473	.55
August	3,020	49	441	1.59	1.83
September	720	42	169	.610	.68
The year	3,020	.2	383	1.38	18.76

WEST FORK RIVER AT BUTCHERVILLE, W. VA.

LOCATION.—Chain gage at trolley bridge between Weston and Clarksburg, a quarter of a mile above Butcherville, Lewis County.

DRAINAGE AREA.—181 square miles.

RECORDS AVAILABLE.—April, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,300 second-feet Apr. 1 (gage height, 11.40 feet); minimum, 0.2 second-foot Oct. 12 (gage height, 2.98 feet).

1915–1931: Maximum discharge, 7,590 second-feet Mar. 13, 1918, Jan. 2, 1919 (gage height, 24.0 feet); no flow in October, 1919, September, October, and December, 1922, caused by diversion or impounding at small dams upstream.

Maximum stage known, about 27 feet in 1888. Dam, since washed out, may have increased height of this flood.

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.6	0.7	21	19	68	1,390	65	103	9.5	4.7	77
2	.4	.4	.8	8.6	17	660	1,640	79	60	7.5	7.8	41
3	.3	.4	.6	5.8	15	346	660	96	44	5.6	12	52
4	.3	.5	.6	5.6	12	217	900	96	32	4.2	10	49
5	.4	.6	.5	5.8	10	118	370	71	207	2.6	7.8	40
6	.3	.5	.7	860	8.9	80	370	65	1,350	4.2	3.0	34
7	.3	.4	1.0	370	7.8	69	820	64	900	4.3	17	20
8	.2	.4	1.1	150	9.5	860	425	370	268	3.8	9.2	17
9	.2	.4	.8	78	247	820	300	300	247	3.4	10	12
10	.2	.4	.8	62	820	370	268	395	168	10	18	8.3
11	.2	.5	.7	46	278	257	395	168	103	941	6.6	6.6
12	.2	.6	.6	46	141	227	323	103	82	590	3.8	4.9
13	.2	.8	.6	50	133	227	247	133	71	69	2.0	3.7
14	.3	.7	.6	84	1,100	700	168	278	42	38	1.7	3.0
15	.3	.6	.5	62	590	860	103	300	38	23	1.8	3.2
16	.3	.6	.6	43	168	625	80	227	34	26	2.0	4.7
17	.4	.7	.7	36	188	323	65	159	33	30	1.5	4.2
18	.5	.6	.7	30	900	178	60	178	24	26	1.2	10
19	.5	.8	.7	34	860	159	47	150	17	21	3.3	10
20	.5	.7	.8	39	346	150	43	455	15	18	69	8.9
21	.5	.5	.8	40	159	133	39	860	13	35	740	7.5
22	.4	.5	.4	35	125	133	45	455	13	74	1,350	5.8
23	.4	.5	.3	26	96	125	96	1,310	12	141	590	7.8
24	.6	.4	.4	26	77	118	178	555	31	159	257	7.5
25	.6	.4	.6	23	62	300	168	1,020	33	79	77	5.1
26	.7	.4	.8	23	52	485	278	860	26	34	72	300
27	.6	.3	10	25	44	425	323	300	27	24	168	300
28	.7	.3	26	29	38	425	227	188	22	17	370	133
29	.9	.4	12	26	-------	346	133	110	22	11	625	73
30	1.0	.5	11	26	-------	207	96	69	19	7.5	300	48
31	.7	-------	18	22	-------	188	-------	133	-------	5.6	133	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1.0	0.2	0.44	0.0024	0.003
November	.8	.3	.51	.0028	.003
December	26	.3	3.05	.017	.02
January	860	5.6	75.4	.417	.48
February	1,100	7.8	233	1.29	1.34
March	860	68	329	1.82	2.10
April	1,640	39	342	1.89	2.11
May	1,310	64	310	1.71	1.97
June	1,350	12	135	.746	.83
July	941	2.6	78.2	.432	.50
August	1,350	1.2	157	.867	1.00
September	300	3.0	43.2	.239	.27
The year	1,640	.2	142	.785	10.63

WEST FORK RIVER AT CLARKSBURG, W. VA.

LOCATION.—Water-stage recorder at dam of Clarksburg waterworks, three-quarters of a mile south of Clarksburg, Harrison County.

DRAINAGE AREA.—384 square miles.

RECORDS AVAILABLE.—March, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,550 second-feet Apr. 2 (gage height, 3.58 feet); minimum mean daily discharge, 2.0 second-feet Nov. 24 (pumpage for water supply; no flow over dam).

1923–1931: Maximum discharge, 16,300 second-feet May 12, 1924 (gage height, 7.76 feet); minimum, that of Nov. 24, 1930.

REMARKS.—Records good. Water diverted for water supply of Clarksburg included in records. There are three storage reservoirs between Clarksburg and Weston. Water was drawn from storage Oct. 1 to Jan. 6.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	2.7	2.5	2.7	52	211	1,170	182	330	36	62	217
2	3.5	2.4	2.5	2.3	48	1,020	3,780	160	247	25	40	155
3	3.4	2.8	2.3	2.4	39	857	1,720	170	177	18	24	138
4	3.3	2.5	2.5	2.4	31	503	2,060	222	138	14	32	138
5	3.2	2.4	2.6	2.4	24	336	1,660	199	471	8.0	57	144
6	3.2	2.5	2.5	301	20	240	922	160	1,660	9.0	36	103
7	3.5	2.7	2.3	1,030	20	188	1,380	138	1,100	6.4	21	75
8	3.9	2.4	2.4	435	20	799	1,560	290	561	30	14	48
9	3.8	2.1	2.3	218	207	1,720	900	586	450	49	17	39
10	3.9	2.5	2.8	160	1,560	1,070	561	536	420	43	7.8	28
11	3.3	2.5	2.4	104	815	658	553	391	278	152	36	21
12	3.1	2.4	2.6	93	383	495	836	303	194	587	36	21
13	3.0	2.6	2.5	76	279	442	553	316	149	211	24	14
14	2.8	2.6	2.3	84	1,060	815	385	578	128	109	14	10
15	3.0	2.6	2.3	118	1,320	1,293	299	734	200	62	11	11
16	3.0	2.5	2.4	103	604	1,100	247	503	183	49	10	13
17	2.9	2.5	2.6	88	384	658	205	370	123	61	8.6	24
18	2.4	2.3	2.6	69	890	427	177	336	93	44	5.3	56
19	2.5	2.5	2.4	57	1,400	330	171	336	70	39	4.3	40
20	2.4	2.4	2.5	56	933	303	138	240	57	131	25	24
21	3.0	2.4	2.3	61	569	278	108	1,610	44	317	984	20
22	2.4	2.3	2.3	61	384	259	103	1,100	35	188	1,660	20
23	2.2	2.2	2.4	70	290	253	123	2,380	20	128	1,040	32
24	2.5	2.0	2.5	61	228	240	240	1,660	17	200	435	24
25	2.8	2.3	2.4	56	194	520	253	1,200	27	206	247	18
26	2.8	2.4	2.4	53	171	1,010	253	3,240	109	123	228	582
27	2.8	2.2	2.4	49	144	944	640	1,270	79	80	988	878
28	2.7	2.4	2.4	52	118	676	528	586	56	49	1,020	406
29	2.9	2.2	2.3	61	-------	553	336	363	44	35	715	240
30	3.2	2.3	2.6	65	-------	456	253	259	40	22	613	171
31	3.1	-------	2.6	61	-------	384	-------	323	-------	130	370	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3.9	2.2	3.03	0.0079	0.009
November	2.8	2.0	2.42	.0063	.007
December	2.8	2.3	2.45	.0064	.007
January	1,030	2.3	118	.307	.35
February	1,560	20	435	1.13	1.18
March	1,720	188	614	1.60	1.84
April	3,780	103	737	1.92	2.14
May	3,240	138	669	1.74	2.01
June	1,660	17	250	.651	.73
July	587	6.4	102	.266	.31
August	1,660	4.3	283	.737	.85
September	878	10	124	.323	.36
The year	3,780	2.0	277	.721	9.79

BEAVER RIVER BASIN

MAHONING RIVER NEAR DEERFIELD, OHIO

LOCATION.—Chain gage in T. 1 N., R. 6 W., at highway bridge 1 mile above Willow Creek and 2½ miles southwest of Deerfield, Portage County.

DRAINAGE AREA.—175 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,150 second-feet Apr. 23 (gage height, 6.20 feet); minimum discharge, 3.7 second-feet Oct. 6, Aug. 10; minimum gage height, 1.44 feet Aug. 10.

1923–1931: Maximum discharge, about 10,300 second-feet June 29, 1924 (gage height, 17.4 feet); minimum, 2.2 second-feet Aug. 30, 1930.

Flood of March, 1913, reached stage equivalent to gage height 19.0 feet.

REMARKS.—Records good except those for periods of ice effect, Dec. 23–31, Jan. 1–4, 13–14, 16–18, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	21	47	9.6	40	35	37	215	42	17	6.0	32
2	7.6	22	42	9.3	32	35	30	124	35	13	7.0	102
3	7.6	15	24	8.9	35	31	790	76	24	14	6.5	402
4	6.2	15	19	8.9	27	29	830	56	23	14	4.7	215
5	6.0	16	17	25	24	33	830	42	159	10	6.5	132
6	3.7	16	30	157	20	20	206	40	132	548	5.5	8.8
7	5.4	14	31	148	21	26	124	35	300	206	5.5	5.1
8	9.3	13	38	100	117	29	54	141	1,070	66	6.5	33
9	14	14	27	58	97	35	48	132	1,070	42	6.5	23
10	10	10	22	29	53	27	64	99	548	35	3.7	16
11	10	13	20	27	51	24	82	71	124	26	13	8.2
12	8.9	14	21	24	40	20	79	59	79	13	71	6.5
13	7.6	20	20	22	138	27	56	430	50	13	324	124
14	8.2	23	20	18	458	76	52	196	37	11	124	132
15	9.6	21	18	15	256	150	42	159	108	9.5	48	102
16	8.9	19	14	13	116	141	31	99	69	7.0	26	108
17	12	21	14	12	186	124	37	66	54	14	18	23
18	16	23	10	13	458	93	30	48	42	12	24	24
19	10	22	10	23	278	93	29	52	27	7.6	177	18
20	13	22	9.6	82	215	150	27	64	23	6.0	132	21
21	15	18	10	47	159	102	26	54	16	11	37	12
22	16	18	9.6	35	108	96	790	44	150	56	23	9.5
23	10	18	9.3	28	90	76	1,150	350	141	40	23	12
24	10	18	9.3	20	76	71	752	215	85	24	12	13
25	9.6	18	8.9	38	45	93	235	196	39	16	48	124
26	10	17	9.3	85	54	235	580	168	27	7.6	215	69
27	13	16	9.6	88	42	235	870	96	32	7.6	458	42
28	14	16	10	67	37	159	752	85	37	6.5	215	35
29	18	16	10	51	-------	324	215	40	33	7.6	99	21
30	18	23	10	44	-------	177	124	30	29	5.1	50	16
31	17	-------	10	46	-------	108	-------	33	-------	6.5	40	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18	3.7	10.8	0.062	0.07
November	23	10	17.7	.101	.11
December	47	8.9	18.1	.103	.12
January	157	8.9	43.6	.249	.29
February	458	20	117	.669	.70
March	324	20	92.7	.530	.61
April	1,150	26	299	1.71	1.91
May	430	30	113	.646	.74
June	1,070	16	154	.880	.98
July	548	5.1	41.0	.234	.27
August	458	3.7	72.1	.412	.47
September	402	5.1	63.0	.360	.40
The year	1,150	3.7	86.1	.492	6.67

MAHONING RIVER NEAR BERLIN CENTER, OHIO

LOCATION.—Staff gage prior to Nov. 29 and water-stage recorder thereafter at highway bridge in T. 1 N., R. 5 W., 1¾ miles west of Berlin Center and about 1½ miles below mouth of Mill Creek. Zero of gage is 966.15 feet above mean sea level.

DRAINAGE AREA.—247 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 1,820 second-feet Apr. 22 (gage height, 5.15 feet); minimum, 2.6 second-feet Aug. 8–10 (gage height, 0.47 foot).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	e 23	37	e 20	e 57	42	178	107	48	18	3.7	39
2	-------	e 28	e 79	e 20	e 48	41	731	84	44	16	6.0	62
3	-------	22	e 47	e 20	e 37	e 36	1,200	79	35	16	6.3	423
4	-------	19	31	e 20	e 31	e 29	1,200	69	29	13	4.8	343
5	-------	18	26	e 100	e 30	e 25	702	56	101	11	3.7	169
6	-------	16	31	e 260	e 30	e 20	306	47	157	517	3.3	105
7	-------	13	49	e 220	e 35	e 19	181	43	339	359	3.7	66
8	-------	13	52	e 170	e 65	e 21	127	109	1,090	124	3.1	45
9	-------	14	38	e 120	e 95	e 22	93	171	1,260	49	2.9	34
10	-------	13	e 29	e 80	e 69	e 23	77	117	472	27	4.2	28
11	-------	12	25	e 58	e 55	e 22	92	83	168	19	10	25
12	-------	14	25	e 36	e 44	e 20	97	83	99	16	19	21
13	-------	16	25	e 32	e 320	e 24	73	420	65	13	165	19
14	-------	22	25	e 27	e 650	e 69	57	523	47	12	230	17
15	-------	21	e 18	e 26	e 430	e 185	47	244	130	10	80	15
16	-------	21	e 16	e 26	e 240	220	37	129	81	8.0	38	14
17	-------	19	e 16	e 26	e 360	185	35	97	66	6.6	23	18
18	-------	19	e 15	e 26	e 490	148	33	88	50	7.5	22	31
19	-------	19	e 15	e 48	e 410	147	30	74	34	7.5	99	27
20	-------	19	15	e 160	323	217	27	73	25	6.6	116	20
21	-------	16	16	e 140	241	200	27	71	21	8.0	56	15
22	-------	15	18	e 83	169	139	927	65	20	21	32	12
23	-------	14	17	e 55	133	107	1,490	266	56	52	20	10
24	-------	14	18	45	107	86	856	282	130	32	13	9.5
25	-------	13	18	49	e 76	117	337	236	50	20	21	9.8
26	-------	15	19	98	e 60	265	884	244	31	12	196	30
27	-------	15	21	141	e 50	234	1,200	157	31	8.0	781	83
28	10	15	e 21	113	e 45	290	688	95	37	6.6	390	48
29	14	17	e 21	93	-------	505	288	63	32	5.9	162	31
30	16	16	e 21	e 71	-------	272	164	44	24	5.2	81	22
31	20	-------	e 20	e 63	-------	161	-------	38	-------	4.4	56	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	28	12	17.0	0.069	0.08
December	79	15	26.6	.108	.12
January	260	20	78.9	.319	.37
February	650	30	168	.680	.71
March	505	19	126	.510	.59
April	1,490	27	406	1.64	1.83
May	523	38	137	.555	.64
June	1,260	20	159	.644	.72
July	517	4.4	46.2	.187	.22
August	781	2.9	85.5	.346	.40
September	423	9.5	59.7	.242	.27

e Estimated.

MAHONING RIVER AT PRICETOWN, OHIO

LOCATION.—Water-stage recorder in T. 2 N., R. 5 W., about half a mile southwest of Pricetown and a quarter of a mile south of line between Mahoning and Trumbull Counties. Zero of gage is 905.50 feet above mean sea level.

DRAINAGE AREA.—276 square miles.

RECORDS AVAILABLE.—July, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,780 second-feet Apr. 23 (gage height, 6.32 feet); minimum, 5.4 second-feet Feb. 9–26 (gage height, 1.20 feet).

1929–1931: Maximum discharge, 4,070 second-feet Jan. 14, 1930 (gage height, 10.5 feet); minimum, that of Feb. 9–26, 1931.

REMARKS.—Records excellent except those for estimated periods, Dec. 8–10, Apr. 20, which are fair. Flow regulated by storage in Milton Reservoir.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	36	34	31	6.3	6.3	212	168	49	92	77	71
2	20	36	34	31	6.3	6.3	487	135	50	111	71	71
3	20	36	34	31	5.9	6.3	1,240	93	52	142	71	69
4	22	36	34	31	5.9	6.3	1,430	84	64	142	71	68
5	22	35	33	31	5.9	6.3	1,010	79	34	149	71	68
6	22	35	33	31	5.9	6.3	533	84	115	147	71	68
7	22	35	33	31	5.9	6.3	295	62	159	189	71	68
8	22	35	33	33	5.9	6.3	204	71	688	196	69	69
9	22	35	33	33	5.9	6.3	149	132	1,220	161	68	69
10	22	35	33	33	5.4	6.8	122	150	808	144	69	68
11	23	35	33	33	5.4	6.3	92	108	340	142	69	68
12	24	35	30	30	5.4	13	101	76	176	139	69	81
13	24	35	31	30	5.4	18	109	190	112	137	69	97
14	25	35	31	30	5.4	18	68	487	95	181	69	129
15	25	35	31	30	5.4	18	61	383	68	239	69	149
16	25	35	33	30	5.4	18	55	115	116	242	69	137
17	26	35	33	30	5.4	15	53	159	103	239	69	133
18	26	35	33	30	5.4	5.9	47	149	93	239	69	133
19	26	35	33	29	5.4	5.9	46	135	84	239	69	135
20	26	35	33	29	5.4	6.3	63	97	71	236	68	133
21	26	35	33	29	5.4	36	76	50	47	236	68	135
22	26	35	31	28	5.4	118	418	56	46	236	69	133
23	26	35	31	29	5.4	114	1,680	198	46	234	69	133
24	26	35	31	29	5.4	140	1,240	323	49	142	69	135
25	26	35	31	29	5.4	124	612	254	61	84	68	137
26	42	36	31	22	5.4	140	658	231	66	61	68	135
27	55	36	30	12	5.9	238	1,290	196	55	61	68	133
28	41	36	30	6.8	6.3	278	1,020	137	52	60	68	135
29	35	36	30	6.8	-------	426	470	97	53	60	68	133
30	35	34	30	6.8	-------	365	273	76	71	65	69	133
31	36	-------	31	6.8	-------	238	-------	63	-------	81	69	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	55	20	27.0	May	487	50	150
November	36	34	35.2	June	1,220	34	168
December	34	30	32.1	July	242	60	156
January	33	6.8	26.5	August	77	68	69.4
February	6.3	5.4	5.64	September	149	68	108
March	426	5.9	77.6				
April	1,680	46	470	The year	1,680	5.4	110

MAHONING RIVER AT WARREN, OHIO

LOCATION.—Water-stage recorder at dam 200 feet below crossing of Erie Railroad (Shenango Branch) in Warren, Trumbull County.

DRAINAGE AREA.—599 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,640 second-feet Apr. 23 (gage height, 5.47 feet); minimum mean daily discharge, 6 second-feet Oct. 19.

1924–1931: Maximum discharge, 10,500 second-feet Feb. 27, 1929 (gage height, 7.2 feet); minimum mean daily discharge, that of Oct. 19, 1930.

REMARKS.—Records good except those for estimated periods, Dec. 8, Sept. 17–30, which are fair. Water diverted past right end of dam by Ohio Public Service Co. is included in records. City of Warren diverted a mean of 4.7 second-feet during the year, which is not included in records. Slight regulation caused by operation of Milton Reservoir above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	22	99	43	134	94	450	327	147	112	110	134
2	34	77	169	55	118	91	1,000	277	137	127	107	155
3	30	73	118	48	97	85	2,440	232	110	178	113	246
4	18	66	96	61	91	77	3,250	206	107	193	139	284
5	15	66	81	67	80	81	2,300	182	128	188	116	197
6	32	70	88	131	73	71	1,030	165	146	266	102	161
7	30	46	112	338	70	44	598	169	246	343	97	134
8	34	34	114	246	82	28	419	259	608	289	69	125
9	42	26	103	170	149	65	312	327	1,140	227	67	116
10	40	59	92	139	163	70	283	321	1,080	193	82	76
11	24	52	76	97	108	62	265	259	570	175	131	84
12	13	54	77	86	103	58	227	287	290	175	128	87
13	53	60	59	79	107	62	213	719	205	171	138	84
14	40	52	70	73	471	81	182	974	159	164	125	125
15	40	34	70	73	481	188	147	700	139	222	110	176
16	34	25	65	70	252	296	137	438	131	238	91	144
17	43	61	58	64	213	355	128	321	159	238	87	161
18	13	60	58	61	429	306	119	341	142	249	102	174
19	6	55	58	67	524	254	100	300	131	249	119	161
20	37	54	46	97	358	277	110	244	133	271	119	161
21	30	65	45	123	282	283	118	194	131	283	110	158
22	40	45	62	127	211	271	441	162	102	277	87	161
23	40	57	60	116	176	277	3,160	462	102	283	88	158
24	52	58	54	88	154	249	2,750	780	94	244	106	152
25	24	52	43	76	132	294	1,190	592	70	155	110	155
26	14	52	56	148	121	354	1,030	435	93	112	134	174
27	53	52	64	330	110	450	2,490	354	116	98	223	182
28	71	46	64	246	100	499	1,880	259	142	92	244	174
29	70	34	66	186	-------	985	904	155	97	89	147	167
30	60	30	64	151	-------	880	492	162	101	86	127	164
31	56	-------	46	135	-------	540	-------	155	-------	86	122	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	71	6	36.5	May	974	155	347
November	77	22	51.2	June	1,140	70	232
December	169	43	75.3	July	343	86	196
January	338	43	122	August	244	67	118
February	524	70	192	September	284	76	154
March	985	28	249				
April	3,250	100	939	The year	3,250	6	225

MAHONING RIVER AT YOUNGSTOWN, OHIO

LOCATION.—Water-stage recorder 400 feet above Bridge Street Bridge, at Youngstown, Mahoning County. Zero of gage is 826.53 feet above mean sea level.
DRAINAGE AREA.—899 square miles.
RECORDS AVAILABLE.—October, 1921, to September, 1931. May, 1903, to July, 1906, at station 4½ miles downstream.
EXTREMES.—Maximum discharge during year, 4,420 second-feet Apr. 4 (gage height, 6.35 feet); minimum, 39 second-feet Oct. 6, 20 (gage height, 1.90 feet).

1921–1931: Maximum discharge, 14,000 second-feet Dec. 14, 1927 (gage height, 12.7 feet); minimum, 28 second-feet Aug. 14, 1930 (gage height, 1.80 feet).

Maximum known stage, 26.5 feet Mar. 26, 1913.
REMARKS.—Records excellent. Water diverted for municipal water supply above station. Flow slightly regulated at Milton Reservoir.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	83	117	70	341	159	1,010	841	257	104	88	125
2	58	62	192	68	324	143	1,600	521	220	118	101	190
3	55	100	184	78	214	132	3,060	387	187	136	104	269
4	52	103	155	80	172	128	4,290	297	174	195	104	373
5	45	96	155	110	143	121	3,780	246	205	190	118	264
6	45	90	192	180	121	121	2,320	205	178	552	110	182
7	47	90	196	418	128	110	1,380	210	398	490	98	150
8	88	75	237	440	132	113	910	590	940	375	85	132
9	96	60	242	288	196	83	582	794	1,600	273	101	128
10	78	58	237	242	262	96	423	841	1,600	205	112	115
11	60	75	232	228	224	103	366	784	960	182	172	104
12	45	80	201	224	192	96	341	720	505	178	211	101
13	49	87	151	167	228	100	334	1,050	303	174	200	96
14	58	90	143	136	506	124	297	1,600	231	170	157	107
15	62	87	143	110	910	234	220	1,490	191	202	146	136
16	60	72	113	106	580	409	191	1,070	146	286	128	166
17	72	83	110	103	504	520	174	832	166	286	128	174
18	70	90	100	96	718	554	166	632	153	316	118	178
19	49	93	87	113	1,060	529	153	624	132	309	139	166
20	42	90	83	121	860	512	139	552	153	334	170	157
21	52	83	80	159	718	538	122	409	115	380	139	150
22	52	83	78	176	625	529	370	372	104	380	132	161
23	55	75	78	172	463	520	2,960	1,250	98	347	136	150
24	65	80	80	155	354	504	4,030	1,660	83	334	142	157
25	72	87	78	155	268	487	2,370	1,440	90	228	166	168
26	49	80	78	180	232	512	1,880	1,070	108	145	178	220
27	47	75	90	502	201	625	3,060	860	150	101	220	195
28	80	72	87	495	176	718	3,300	616	153	90	309	187
29	100	70	83	440	-------	1,220	2,040	387	130	85	218	182
30	90	87	87	424	-------	1,490	1,280	292	115	83	157	174
31	93	-------	80	382	-------	1,160	-------	286	-------	83	128	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	100	42	62.7	May	1,660	205	740
November	103	58	81.9	June	1,600	83	328
December	242	78	134	July	552	83	236
January	502	68	213	August	309	85	146
February	1,060	121	388	September	373	96	169
March	1,490	83	409				
April	4,290	122	1,440	The year	4,290	42	360

WEST BRANCH OF MAHONING RIVER NEAR NEWTON FALLS, OHIO

LOCATION.—Water-stage recorder in T. 3 N., R. 6 W., 2½ miles southwest of Newton Falls and about 6 miles above mouth.

DRAINAGE AREA.—97.8 square miles.

RECORDS AVAILABLE.—June, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 996 second-feet Apr. 23 (gage height, 6.16 feet); minimum, 4.9 second-feet Aug. 24, 25 (gage height, 0.98 foot).

1926–1931: Maximum discharge, 3,540 second-feet Dec. 1, 1927; minimum, 3.6 second-feet Aug. 3, 1930 (gage height, 0.95 foot).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.1	24	38	15	a 41	28	75	46	24	12	8.3	9.1
2	9.1	25	a 37	16	a 36	28	333	40	20	22	7.4	19
3	9.1	24	29	16	a 25	26	812	38	16	28	7.4	61
4	8.3	23	22	16	a 17	22	548	36	14	20	13	39
5	8.3	21	21	21	a 15	a 16	182	30	37	15	13	25
6	8.3	18	24	154	a 17	a 14	100	26	40	32	9.1	18
7	9.1	16	41	130	a 22	a 14	70	24	72	27	7.4	13
8	9.9	14	42	a 63	54	a 18	54	52	150	16	6.6	9.9
9	17	13	31	a 42	72	22	46	66	79	13	6.6	8.3
10	17	14	23	a 31	54	a 17	40	50	43	11	7.4	7.4
11	13	14	21	a 29	a 41	a 14	50	40	25	9.9	12	6.6
12	12	14	21	25	a 31	a 12	49	42	17	9.1	12	5.8
13	12	17	22	24	96	a 14	38	182	14	8.3	13	5.8
14	12	21	21	a 22	355	a 38	31	167	13	7.4	13	5.8
15	12	21	19	a 20	a 110	a 74	26	83	12	7.4	9.9	5.8
16	12	19	14	a 18	a 77	127	22	52	13	7.4	9.1	5.8
17	12	19	a 13	16	110	a 110	21	49	12	7.4	7.4	7.4
18	15	21	12	16	216	a 96	21	48	12	7.4	9.9	8.3
19	16	20	13	20	143	92	18	36	11	9.0	19	9.1
20	14	18	14	50	107	114	17	31	9.9	30	14	7.4
21	14	17	13	49	82	89	16	32	9.1	20	8.3	7.4
22	14	16	13	a 36	64	64	309	31	9.1	21	5.8	6.6
23	14	14	13	a 29	54	52	818	74	12	29	5.4	5.8
24	14	14	13	25	48	46	211	83	11	14	4.9	5.8
25	15	14	a 12	36	35	69	107	64	8.3	11	5.4	6.6
26	16	14	12	138	38	107	291	59	7.4	9.9	13	24
27	16	14	13	122	34	89	432	38	14	9.1	130	23
28	17	13	14	93	29	132	157	25	15	9.1	38	14
29	21	12	14	69	------	211	93	19	13	8.3	18	12
30	19	13	14	a 49	------	106	61	16	12	8.3	12	9.9
31	19	------	a 13	a 46	------	68	------	19	------	8.3	9.9	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	21	8.3	13.4	0.137	0.16
November	25	12	17.2	.176	.20
December	42	12	20.1	.206	.24
January	154	15	46.3	.473	.55
February	355	15	72.2	.738	.77
March	211	12	62.2	.636	.73
April	818	16	168	1.72	1.92
May	182	16	51.5	.527	.61
June	150	7.4	24.8	.254	.28
July	32	7.4	14.4	.147	.17
August	130	4.9	14.7	.150	.17
September	61	5.8	13.1	.134	.15
The year	818	4.9	42.8	.438	5.95

a Estimated.

EAGLE CREEK AT PHALANX STATION, OHIO

LOCATION.—Water-stage recorder at highway bridge 1 mile north of Phalanx Station, Trumbull County, and 2 miles below Tinker Creek. Zero of gage is 887.42 feet above mean sea level.

DRAINAGE AREA.—97.0 square miles.

RECORDS AVAILABLE.—June, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 930 second-feet April 23 (gage height, 7.38 feet); minimum, 1.3 second-feet Oct. 1, 5.

1926–1931: Maximum discharge, 3,240 second-feet Dec. 1, 1927; minimum discharge, 1.1 second-feet Sept. 11, 1930; minimum gage height, 1.54 feet Aug. 14, 1926.

REMARKS.—Records excellent. Flow at low stages regulated by mill dam several miles upstream. Discharge estimated May 11–20.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	36	88	19	70	34	77	60	35	16	12	15
2	9.8	29	81	20	56	33	227	52	31	19	5.0	33
3	7.0	22	43	18	66	32	645	53	24	17	64	111
4	12	20	27	17	42	32	745	48	24	18	38	55
5	3.3	18	25	21	50	29	362	42	31	15	21	35
6	9.9	20	31	102	33	27	121	39	40	22	12	21
7	9.3	18	57	262	33	26	79	39	81	27	13	21
8	12	16	50	133	55	28	62	74	161	15	11	25
9	14	12	37	77	73	31	55	74	89	16	6.0	16
10	18	14	26	52	61	29	51	57	48	12	22	14
11	16	12	24	39	47	28	56	50	32	12	17	14
12	13	14	24	36	37	29	52	53	24	12	22	11
13	14	18	25	38	66	33	43	190	19	15	23	8.1
14	13	23	23	33	330	48	39	180	18	9.5	19	24
15	14	23	21	31	204	84	37	110	17	9.0	18	10
16	9.2	11	19	28	101	118	33	70	16	15	5.3	13
17	17	19	16	27	88	124	34	61	16	8.6	18	31
18	20	21	14	26	171	96	33	59	14	19	11	10
19	17	21	16	34	147	88	31	50	14	22	13	3.8
20	21	15	11	57	108	101	28	46	15	37	19	5.0
21	13	16	7.5	56	86	86	29	49	14	36	14	21
22	14	18	17	51	69	68	232	44	14	39	16	15
23	15	12	17	40	61	56	782	114	16	40	3.4	9.8
24	18	15	15	35	56	48	364	124	17	25	13	14
25	17	21	16	38	47	60	126	82	12	19	12	16
26	15	13	18	182	44	91	297	73	14	6.0	22	23
27	17	9.6	19	234	39	82	586	47	52	16	28	14
28	23	14	17	124	34	95	226	37	31	11	34	29
29	26	16	18	88	-------	283	104	31	22	10	28	17
30	37	15	16	74	-------	130	74	28	17	13	5.6	18
31	11	-------	18	81	-------	79	-------	31	-------	12	23	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	37	3.3	14.9	0.154	0.18
November	36	9.6	17.7	.182	.20
December	88	7.5	27.0	.278	.32
January	262	17	66.9	.690	.80
February	330	33	81.2	.837	.87
March	283	26	68.6	.707	.82
April	782	28	188	1.94	2.16
May	190	28	66.7	.688	.79
June	161	12	31.9	.329	.37
July	40	6.0	18.2	.188	.22
August	64	3.4	18.3	.189	.22
September	111	3.8	21.8	.225	.25
The year	782	3.3	51.4	.530	7.20

MOSQUITO CREEK AT NILES, OHIO

LOCATION.—Water-stage recorder at dam in Niles, Trumbull County.
DRAINAGE AREA.—139 square miles.
RECORDS AVAILABLE.—June, 1929, to September, 1931.
EXTREMES.—Maximum discharge during year, 839 second-feet Apr. 4 (gage height, 3.32 feet); minimum, 0.2 second-foot Oct. 1 to Nov. 11; minimum gage height, 1.20 feet Oct. 7–8.

1929–1931: Maximum discharge, 1,680 second-feet Jan. 15, 1930 (gage height, 4.13 feet); minimum, 0.2 second-foot several times in 1929 and 1930; minimum gage height, that of Oct. 7–8, 1930.

REMARKS.—Records good except those for extremely low water and for estimated periods, Dec. 4–7, 9–10, Jan. 21, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	2.3	3.2	137	38	312	234	41	2.6	0.7	2.6
2	.2	.2	4.3	3.2	95	32	402	100	35	2.6	2.4	7.8
3	.2	.2	8.5	2.3	68	28	558	65	38	2.0	2.6	12
4	.2	.2	22	2.3	54	25	774	51	35	2.0	.9	12
5	.2	.2	28	5.2	35	22	746	41	30	2.6	.7	8.4
6	.2	.2	38	10	28	16	549	35	24	131	.7	5.6
7	.2	.2	58	25	25	14	402	38	47	89	.7	4.4
8	.2	.2	72	32	25	12	236	193	83	27	.7	2.6
9	.2	.2	86	44	38	12	104	334	75	9.9	.7	2.6
10	.2	.2	95	58	50	12	65	334	68	4.4	.7	2.0
11	.2	.2	95	68	54	12	58	371	62	3.4	2.8	2.0
12	.2	.9	68	68	58	12	55	356	43	2.6	5.6	2.0
13	.2	1.5	44	44	50	14	51	284	26	2.0	5.6	1.4
14	.2	1.5	32	28	72	25	44	298	16	1.4	3.4	1.7
15	.2	1.5	28	16	104	44	35	305	12	2.7	2.6	2.0
16	.2	1.7	19	14	126	68	29	312	10	2.6	1.4	.9
17	.2	1.9	16	10	152	91	24	284	8.4	2.5	.9	.9
18	.2	.7	12	10	192	104	21	174	5.6	7.5	.9	.9
19	.2	.6	8.5	10	217	126	18	179	5.6	3.5	2.3	.9
20	.2	.5	7.0	10	223	147	18	192	8.5	3.5	2.6	.7
21	.2	.5	5.6	21	229	152	14	131	6.2	11	1.4	.7
22	.2	.9	4.3	32	217	152	66	109	5.6	12	.9	.7
23	.2	.9	3.2	38	168	152	268	341	4.4	6.9	.7	.7
24	.2	.9	3.2	41	122	137	334	394	3.4	6.9	.7	.7
25	.2	.9	3.2	38	75	104	334	410	2.6	6.9	2.2	.7
26	.2	.9	3.2	38	68	104	418	349	7.7	4.4	4.8	.7
27	.2	.9	3.2	50	58	117	499	305	8.4	2.6	8.4	.7
28	.2	.5	3.2	75	44	142	482	203	6.9	1.4	5.6	.7
29	.2	.6	3.2	117	-------	185	426	93	4.4	.9	5.6	.7
30	.2	1.8	3.2	158	-------	242	379	55	3.4	.9	4.4	.7
31	.2	-------	3.2	174	-------	270	-------	48	-------	.7	3.4	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.2	0.2	0.200	0.001	0.001
November	1.9	.2	.727	.005	.006
December	95	2.3	25.2	.181	.21
January	174	2.3	40.2	.289	.33
February	229	25	99.4	.715	.74
March	270	12	84.2	.606	.70
April	774	14	257	1.85	2.06
May	410	35	213	1.53	1.76
June	83	2.6	24.2	.174	.19
July	131	.7	11.6	.083	.10
August	8.4	.7	2.48	.018	.02
September	12	.7	2.68	.019	.02
The year	774	.2	63.1	.454	6.14

MEANDER CREEK AT MINERAL RIDGE, OHIO

LOCATION.—Water-stage recorder in T. 3 N., R. 3 W., Trumbull County, three-eighths of a mile above highway bridge 1 mile northwest of Mineral Ridge. Zero of gage is 854.81 feet above mean sea level.

DRAINAGE AREA.—84.9 square miles.

RECORDS AVAILABLE.—August, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 67 second-feet May 25 (gage height, 2.51 feet); minimum, 2.0 second-feet Sept. 23.

1929–1931: Maximum discharge, 960 second-feet Jan. 14, 15, 1930 (gage height 5.3 feet); minimum, 1.0 second-foot May 29, 1930.

REMARKS.—Records excellent except those for June 26 to Aug. 19, which are good, and those for Nov. 27 to Dec. 10 (estimated) and Sept. 11–30, which are fair. Flow regulated by storage above Mineral Ridge Dam.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	7.8		5.2	5.9	8.6	4.6	4.1	4.5	3.9	3.9	5.4
2	2.7	8.0		5.0	5.9	8.6	5.0	4.3	3.2	3.9	4.3	6.3
3	2.5	7.8	8.0	4.5	6.1	8.6	4.6	4.3	3.4	3.9	3.9	5.4
4	2.7	7.5		5.0	6.3	8.6	4.8	4.1	3.7	4.6	4.3	5.0
5	2.5	7.2		7.2	5.7	8.6	4.6	3.9	3.7	4.6	4.3	4.3
6	2.4	7.2		11	5.5	8.6	4.6	3.7	3.6	6.8	4.3	3.2
7	2.5	7.0		10	7.0	8.9	4.6	4.1	4.3	5.0	4.3	2.8
8	4.1	6.8	7.0	9.7	6.8	8.9	4.6	4.8	3.9	4.8	4.6	3.1
9	7.2	6.5		8.6	6.8	7.8	4.6	4.1	3.7	4.8	4.6	4.1
10	7.8	6.3		6.3	7.0	6.8	4.6	4.1	3.7	4.8	5.4	3.6
11	6.8	6.5	8.6	4.1	7.2	5.2	4.3	3.9	3.6	4.8	5.0	3.4
12	5.4	7.0	8.3	4.1	6.8	5.2	4.1	3.7	3.6	4.8	5.0	3.2
13	5.0	7.5	7.8	3.9	7.2	4.6	4.3	4.3	3.7	4.8	5.4	3.1
14	4.6	7.8	7.5	4.1	7.2	3.9	4.5	4.3	3.7	4.8	5.0	3.1
15	4.3	7.8	7.2	4.1	7.2	3.9	4.1	4.1	3.9	4.8	5.0	3.1
16	4.5	7.8	6.1	4.8	7.2	3.7	3.9	3.9	4.1	4.8	5.0	3.1
17	5.9	8.0	5.4	5.7	7.2	3.7	3.9	4.1	4.3	4.8	5.0	3.0
18	7.8	7.5	4.8	5.7	7.5	3.7	3.7	4.1	4.1	4.8	3.4	2.8
19	7.0	7.2	4.6	5.7	7.5	3.9	3.7	5.2	4.1	4.8	3.2	2.7
20	5.7	7.2	5.0	5.7	7.5	3.9	3.7	4.5	4.6	4.8	3.4	2.5
21	5.2	7.2	5.0	5.9	7.8	4.1	3.9	4.5	4.5	4.8	4.3	2.4
22	5.0	6.8	5.2	5.9	8.0	4.8	4.6	5.0	4.6	4.6	11	2.1
23	5.0	6.5	5.2	5.7	8.3	4.5	4.6	12	4.6	4.3	26	2.0
24	5.4	6.3	5.2	5.4	8.3	4.5	4.1	36	4.6	4.4	21	3.6
25	6.3	6.1	5.0	5.4	8.3	4.5	3.9	58	4.6	4.5	7.8	3.4
26	6.5	6.3	5.0	5.4	8.3	4.3	5.4	24	4.3	4.6	6.8	3.6
27	6.5		5.2	5.2	8.0	4.3	4.8	10	4.6	4.8	7.0	3.1
28	6.8	10	5.2	5.2	8.6	4.5	4.3	6.8	4.6	4.8	6.8	3.1
29	6.8		5.2	5.4	-------	4.5	4.1	5.0	4.5	4.8	6.1	3.0
30	6.8		5.4	5.4	-------	4.1	4.1	5.0	3.9	4.3	3.7	3.0
31	7.0	-------	5.2	5.9	-------	4.1	-------	5.2	-------	4.1	3.7	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	7.8	2.4	5.21	May	58	3.7	8.23
November	-------	6.1	7.52	June	4.6	3.2	4.07
December	-------	4.6	6.36	July	6.8	3.9	4.68
January	11	3.9	5.85	August	26	3.2	6.24
February	8.6	5.5	7.18	September	6.3	2.0	3.42
March	8.9	3.7	5.61				
April	5.4	3.7	4.35	The year	58	2.0	5.72

LITTLE BEAVER CREEK BASIN

LITTLE BEAVER CREEK NEAR EAST LIVERPOOL, OHIO

LOCATION.—Water-stage recorder at Grimms Bridge, 4 miles above mouth of creek and 4 miles northeast of East Liverpool, Columbiana County.

DRAINAGE AREA.—505 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,990 second-feet June 8 (gage height, 8.31 feet); minimum, 20 second-feet Nov. 29 (gage height, 1.79 feet).

1915–1931: Maximum discharge, 18,200 second-feet on Feb. 26, 1929 (gage height, 14.4 feet); minimum discharge, 12 second-feet Aug. 22, 26, 1918, Aug. 13, 1930; minimum gage height, 1.53 feet Aug. 13, 1930.

Highest flood known reached a gage height of about 20 feet.

REMARKS.—Records excellent except those for periods estimated because of ice effect, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	39	a 72	a 25	a 49	a 116	570	293	298	116	70	58
2	26	40	a 69	a 22	a 43	a 116	1,240	255	238	104	57	302
3	24	38	a 58	a 22	a 39	111	1,600	252	190	90	52	852
4	24	37	a 57	a 25	a 35	a 98	2,450	222	170	79	50	412
5	22	36	a 58	a 36	a 32	a 88	1,560	192	369	81	82	249
6	21	34	101	a 96	a 34	a 77	926	172	264	84	81	178
7	20	32	136	a 130	a 56	a 78	670	164	1,190	108	36	128
8	24	31	117	a 86	109	97	506	550	3,070	103	24	102
9	30	33	92	a 66	a 130	a 98	398	522	1,740	75	22	85
10	42	31	74	a 53	a 112	a 87	378	381	898	60	57	72
11	39	31	68	a 50	a 82	a 75	645	319	506	55	103	62
12	34	37	68	a 50	a 74	a 57	454	310	375	49	73	56
13	30	43	64	a 49	137	a 50	361	774	290	44	78	50
14	28	52	60	a 47	a 400	a 97	301	1,780	265	40	109	44
15	28	50	a 53	a 40	a 270	222	261	1,070	881	39	79	42
16	29	49	a 34	a 32	a 220	248	230	645	530	37	53	43
17	46	49	a 31	a 31	a 240	230	210	526	395	38	38	51
18	37	56	a 30	a 34	a 470	215	202	435	284	37	57	70
19	35	51	a 28	a 61	a 490	218	180	1,220	225	52	152	63
20	31	46	a 26	a 97	a 430	248	162	745	182	94	136	53
21	30	45	a 26	a 87	395	267	144	518	178	196	91	48
22	28	42	a 26	a 78	a 310	245	212	395	162	201	64	44
23	29	39	a 26	a 70	a 240	222	845	620	208	140	49	41
24	29	36	a 25	63	a 180	212	620	620	168	164	39	38
25	30	36	a 24	68	a 150	348	420	598	135	144	42	36
26	30	a 34	a 24	a 96	a 140	506	488	598	129	127	151	80
27	31	a 25	a 24	a 108	a 130	454	926	435	304	120	96	99
28	36	a 21	a 24	a 116	a 120	568	670	335	215	114	98	95
29	39	a 21	a 25	106	------	898	482	272	164	109	97	76
30	37	a 33	a 26	a 79	------	670	358	238	131	106	82	60
31	38	------	a 26	a 58	------	490	------	287	------	111	72	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	46	20	30.8	0.061	0.07
November	56	21	38.2	.076	.08
December	136	24	50.7	.100	.12
January	130	22	63.9	.127	.15
February	490	32	183	.362	.38
March	898	50	242	.479	.55
April	2,450	144	616	1.22	1.36
May	1,780	164	508	1.01	1.16
June	3,070	129	472	.935	1.04
July	201	37	94.1	.186	.21
August	152	22	73.9	.146	.17
September	852	36	120	.238	.27
The year	3,070	20	207	.410	5.56

a Estimated because of ice effect.

YELLOW CREEK BASIN

YELLOW CREEK AT HAMMONDSVILLE, OHIO

LOCATION.—Wire gage installed Feb. 4, 1930, on highway bridge one-fifth mile southwest of Hammondsville, Jefferson County, and 1,000 feet above North Fork. Temporary staff gage 300 feet below wire gage used after Apr. 4, 1931.

DRAINAGE AREA.—169 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,650 second-feet Apr. 4 (gage height, 7.68 feet); minimum, 0.7 second-foot Oct. 6 (gage height, 2.31 feet).

1915–1931: Maximum discharge, 7,710 second-feet June 17, 1920 (gage height, 13.2 feet); minimum, 0.3 second-foot Aug. 20, 22, 1930 (gage height, 2.26 feet).

Highest known flood reached a stage of about 16 feet.

REMARKS.—Records good except those for periods of ice effect, Nov. 26–30, Dec. 2–3, 19–31, Jan. 1–12, 20–26, Feb. 2–6, 11–12, June 19 to Aug. 25, Sept. 9–30, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	3.4	44	2.3	32	42	286	136	120	a 31	a 3.8	39
2	.9	3.4	40	2.1	29	44	620	130	94	a 40	a 2.7	795
3	.9	3.4	32	1.9	27	38	940	124	76	a 36	a 2.1	1,110
4	1.1	6.1	27	1.8	26	31	2,160	107	71	a 32	a 2.1	404
5	.9	6.1	38	3.7	25	25	840	92	82	a 31	a 1.7	230
6	.7	3.7	68	20	27	23	497	76	73	a 28	a 20	150
7	.9	2.8	72	70	42	30	352	73	660	a 24	a 17	110
8	.9	2.2	30	56	55	32	274	440	750	a 17	a 6.6	98
9	1.6	1.7	19	47	52	38	203	386	352	a 14	a 4.6	a 85
10	1.3	2.2	15	40	46	29	178	289	216	a 13	6.1	a 71
11	1.1	2.6	11	35	38	31	289	154	154	a 11	a 19	a 65
12	1.8	3.2	11	33	30	36	230	203	120	a 10	a 24	a 59
13	1.6	4.0	8.3	30	59	42	190	617	98	a 8.3	132	a 54
14	1.3	4.0	6.1	27	390	51	166	795	82	a 8.3	37	a 47
15	1.6	5.5	4.9	26	286	74	136	478	75	a 8.3	a 23	a 45
16	9.1	4.0	4.0	24	229	99	110	320	68	a 10	a 14	a 55
17	3.4	6.1	3.4	20	207	91	99	244	59	a 7.7	a 8.9	a 65
18	2.8	9.1	2.6	21	240	83	88	203	50	a 10	a 10	a 114
19	1.6	10	2.2	30	237	99	76	1,230	a 45	a 14	a 68	a 69
20	1.4	6.8	2.1	70	178	171	68	478	a 36	a 14	304	a 55
21	1.3	4.9	2.0	56	147	131	62	304	a 29	a 22	112	a 43
22	1.6	4.0	2.0	46	112	93	244	244	a 54	a 103	62	a 37
23	2.0	4.4	1.9	41	88	88	459	289	a 98	a 38	44	a 37
24	3.4	3.4	1.9	38	59	102	289	289	a 85	a 22	a 31	a 41
25	3.0	3.4	1.8	35	46	256	230	320	a 61	a 17	a 29	a 39
26	3.2	3.1	2.0	45	42	458	422	336	a 82	a 15	58	57
27	6.1	2.8	2.2	62	40	348	369	244	a 79	a 12	76	49
28	6.1	2.6	2.3	47	40	327	289	178	a 64	a 8.3	68	40
29	4.4	2.5	2.3	45	-------	412	216	150	a 52	a 7.1	40	a 35
30	9.1	15	2.4	39	-------	267	178	136	a 45	a 5.1	54	a 30
31	6.1	-------	2.4	34	-------	214	-------	134	-------	a 5.1	86	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9.1	0.7	2.65	0.016	0.02
November	15	1.7	4.55	0.027	.03
December	72	1.8	15.0	.089	.10
January	70	1.8	33.8	.200	.23
February	390	25	101	.598	.62
March	458	23	123	.728	.84
April	2,160	62	352	2.08	2.32
May	1,230	73	297	1.76	2.03
June	750	29	131	.775	.86
July	103	5.1	20.1	.119	.14
August	304	1.7	44.1	.261	.30
September	1,110	30	138	.817	.91
The year	2,160	.7	105	.621	8.40

a Water below staff gage. Record obtained from tape gage readings.
b Estimated.

MIDDLE ISLAND CREEK BASIN

MIDDLE ISLAND CREEK AT LITTLE, W. VA.

LOCATION.—Chain gage at highway bridge at Little, Tyler County.
DRAINAGE AREA.—458 square miles.
RECORDS AVAILABLE.—May, 1915, to September, 1922; October, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 9,300 second-feet Apr. 4 (gage height, 13.58 feet); no flow Oct. 1 to Nov. 4, Nov. 7–10.

1915–1922, 1928–1931: Maximum discharge, 18,200 second-feet Jan. 22, 1917 (gage height, 22.22 feet); no flow during part of 1922 and Sept. 1 to Nov. 4, Nov. 7–10, 1930.

Maximum stage known, about 33.5 feet during August, 1875.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.4	1.0	7.5	324	2,310	148	93	3.7	4.0	400
2	0	.2	.8	9.0	1,540	5,940	121	78	2.7	7.5	530
3	0	.2	.9	10	621	2,630	131	63	8.5	11	1,540
4	0	.2	1.0	9.5	291	8,900	138	50	8.0	5.4	465
5	.1	.1	1.0	7.5	188	3,060	119	51	10	2.7	308
6	.1	.5	1.7	5.9	133	950	101	600	7.0	9.5	207
7	0	.7	2.7	4.9	97	810	89	439	4.0	15	131
8	0	.5	115	5.4	271	1,020	400	394	2.7	13	88
9	0	.5	86	8.5	1,020	586	537	302	2.0	9.5	60
10	0	.4	47	91	740	361	318	165	2.0	7.5	46
11	.1	.5	33	313	426	524	335	115	2.2	6.4	37
12	.1	.5	27	143	271	628	244	78	2.0	7.5	30
13	.1	.5	20	108	221	380	313	58	1.7	5.4	23
14	.1	.4	19	915	472	253	3,220	47	2.2	3.1	19
15	.1	.4	15	705	775	194	1,240	50	4.0	2.7	15
16	.1	.5	11	232	504	348	565	53	7.5	2.0	13
17	.2	.5	11	148	266	124	324	31	8.5	1.6	13
18	.2	.4	9.5	335	182	106	218	22	8.5	1.3	35
19	.2	.3	9.5	1,100	143	91	214	23	5.4	43	35
20	.2	.4	9.0	740	124	80	154	20	7.5	129	31
21	.2	.4	7.5	400	117	64	148	15	16	1,170	29
22	.1	.4	5.4	235	101	61	156	11	16	2,720	25
23	.1	.4	4.4	165	91	138	880	9.5	78	558	21
24	.2	.4	4.4	124	86	253	775	8.5	78	221	29
25	.2	.3	4.4	97	517	185	484	9.5	45	129	54
26	.2	.4	4.0	76	558	845	2,550	13	29	93	1,920
27	.2	.9	4.4	61	530	1,620	985	9.5	17	110	1,840
28	.2	.8	4.4	47	361	621	413	8.0	12	1,400	593
29	.2	.8	4.4	-------	465	318	228	5.4	9.5	1,020	361
30	.4	.8	4.9	-------	426	204	159	5.9	8.0	504	200
31	-------	1.0	6.4	-------	280	-------	119	-------	4.9	1,320	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	0.4	0	0.12	0.00026	0.0003
December	1.0	.1	.47	.0010	.001
January	115	.8	15.3	.033	.04
February	1,100	4.9	218	.476	.50
March	1,540	86	392	.856	.99
April	8,900	61	1,120	2.45	2.73
May	3,220	89	511	1.12	1.29
June	600	5.4	94.2	.206	.23
July	78	1.7	13.3	.029	.03
August	2,720	1.3	307	.670	.77
September	1,920	13	303	.662	.74
The year	8,900	0	247	.539	7.32

NOTE.—No flow during October.

LITTLE MUSKINGUM RIVER BASIN

LITTLE MUSKINGUM RIVER AT FAY, OHIO

LOCATION.—Staff gage in SE. ¼ sec. 10, T. 3 N., R. 7 W., 300 feet above Buckeye Pipe Line Co.'s pumping station and 1 mile northwest of Fay. Zero of gage is 612.71 feet above mean sea level.

DRAINAGE AREA.—259 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1922; October, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, about 12,200 second-feet Apr. 4 (gage height, 22.0 feet); minimum, 0.1 second-foot Oct. 20–22 (gage height, 0.32 foot).

1915–1922, 1925–1931: Maximum discharge, about 12,700 second-feet Nov. 27, 1919 (gage height, 22.5 feet); minimum discharge, 0.02 second-foot Aug. 11–14, 1930.

Highest flood known reached a stage of about 23 feet (discharge, about 13,100 second-feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	0.2	1.0	14	10	98	1,380	135	50	24	5.4	247
2	1.3	.2	1.0	12	12	276	3,260	122	46	18	4.1	298
3	1.2	.2	1.0	12	12	132	3,070	116	40	18	3.3	1,580
4	.6	.4	1.0	10	14	118	10,800	109	30	86	75	237
5	.5	.4	1.2	7.1	14	104	1,710	97	80	38	46	1,580
6	.4	.5	8.2	5.0	12	66	1,070	97	65	24	11	567
7	.4	.4	19	10	12	57	567	103	164	18	5.4	277
8	.4	.3	16	8.2	12	460	277	109	361	16	5.4	156
9	.4	.3	16	6.4	39	640	227	97	180	11	2.8	116
10	.4	.3	12	6.4	49	430	164	97	97	9.6	4.9	86
11	.4	.3	10	6.4	49	276	237	116	75	8.0	86	70
12	.3	.4	8.2	13	57	154	227	135	44	6.1	50	42
13	.2	.4	6.1	14	154	146	217	319	36	4.9	32	32
14	.2	.4	5.8	12	1,100	357	208	1,840	32	4.1	24	30
15	.2	.4	5.0	11	238	343	172	486	36	4.1	23	30
16	.2	.5	5.0	8.2	177	177	122	277	34	4.1	18	30
17	.2	.6	5.0	8.2	132	125	109	237	30	5.4	11	30
18	.2	.6	4.4	6.4	288	111	103	180	30	25	8.7	86
19	.2	.6	4.2	10	640	91	97	361	30	13	65	80
20	.1	.6	3.6	10	430	85	92	434	30	11	277	65
21	.1	.6	3.2	10	580	74	86	257	18	14	319	63
22	.1	.6	2.7	10	186	74	198	103	18	109	135	55
23	.2	.6	2.7	10	132	75	198	122	30	65	97	48
24	.2	.5	2.7	10	125	98	198	109	36	38	86	38
25	.2	.5	2.7	10	79	154	208	257	30	18	75	50
26	.2	.4	4.4	9.3	57	329	486	247	34	13	80	540
27	.2	.4	5.0	9.3	47	288	753	149	30	8.7	97	340
28	.4	.4	6.4	10	47	302	540	116	30	8.7	257	164
29	.3	.4	12	12	-------	371	180	97	30	8.7	753	122
30	.2	.9	12	12	-------	315	149	97	24	7.1	889	70
31	.2	-------	14	10	-------	238	-------	75	-------	7.1	1,110	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1.8	0.1	0.384	0.001	0.001
November	.9	.2	.443	.002	.002
December	19	1.0	6.50	.025	.03
January	14	5.0	9.77	.038	.04
February	1,100	10	168	.649	.68
March	640	57	212	.819	.94
April	10,800	86	904	3.49	3.89
May	1,840	75	229	.884	1.02
June	361	18	59.0	.228	.25
July	109	4.1	20.8	.080	.09
August	1,110	2.8	150	.579	.67
September	1,580	30	238	.919	1.03
The year	10,800	.1	165	.637	8.64

MUSKINGUM RIVER BASIN

TUSCARAWAS RIVER AT CLINTON, OHIO

LOCATION.—Water-stage recorder in NW. ¼ sec. 32, T. 14 N., R. 10 W., 100 feet below highway bridge at Clinton and 1 mile above mouth of Chippewa Creek.

DRAINAGE AREA.—165 square miles.

RECORDS AVAILABLE.—May, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 328 second-feet Apr. 27 (gage height, 6.06 feet); minimum, 22 second-feet Oct. 23, 25.

1926–1931: Maximum discharge, 2,020 second-feet Feb. 27, 1929 (gage height, 12.4 feet); minimum, 10 second-feet Nov. 6, 1928.

REMARKS.—Records poor. Ohio Canal diverts small amount of water from Tuscarawas River at Portage Lakes, 3 miles south of Akron. Part of diverted water flows into Cuyahoga River Basin and part flows past this gaging station. Flow slightly regulated at headwaters of this stream. Discharge estimated Oct. 30 to Nov. 7, Dec. 9.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	27	45	31	34	38	65	70	77	61	33	40
2	34	25	35	31	35	40	141	65	66	57	30	60
3	33	28	34	29	33	40	215	63	57	51	32	60
4	32	27	32	28	35	37	231	57	58	56	33	47
5	31	27	32	47	33	37	148	59	74	48	32	46
6	31	25	38	79	31	38	90	58	70	59	30	40
7	31	26	36	46	38	38	74	62	125	50	30	42
8	35	27	36	40	43	44	62	83	223	48	31	41
9	33	28	35	36	40	48	59	76	168	48	29	40
10	31	29	34	34	37	48	60	67	108	48	37	39
11	31	29	35	33	36	46	62	63	80	48	34	38
12	30	30	34	35	36	45	58	76	66	46	33	38
13	31	34	33	35	56	47	53	171	63	46	36	35
14	31	33	31	34	84	48	53	144	57	45	31	36
15	31	32	32	33	51	46	50	94	57	44	30	38
16	31	32	31	34	46	51	50	72	56	46	27	42
17	31	32	31	33	59	50	46	77	55	43	28	44
18	30	32	31	32	72	48	46	74	53	42	35	40
19	30	31	31	42	56	50	46	68	53	39	37	38
20	30	31	31	38	54	52	44	67	53	39	32	36
21	27	31	31	34	49	50	44	66	50	41	31	33
22	27	31	31	34	46	48	146	67	56	42	29	35
23	27	29	32	33	46	47	295	77	56	40	28	35
24	26	30	31	31	46	49	235	71	54	38	30	32
25	24	31	33	35	42	59	125	90	52	37	34	36
26	26	31	34	40	42	86	205	84	56	35	58	55
27	28	27	32	39	42	74	317	67	60	35	72	37
28	30	48	32	39	41	76	257	63	51	35	48	35
29	27	35	32	37	------	97	141	60	51	35	53	33
30	28	39	32	35	------	74	89	60	50	34	51	32
31	32	------	32	36	------	59	------	77	------	36	43	------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	35	24	30.1	May	171	57	75.7
November	48	25	30.6	June	223	50	71.8
December	45	31	33.2	July	61	34	44.3
January	79	28	36.9	August	72	27	36.0
February	84	31	45.1	September	60	32	40.1
March	97	37	51.9				
April	317	44	117	The year	317	24	49.7

TUSCARAWAS RIVER NEAR DOVER, OHIO

LOCATION.—Water-stage recorder in T. 9 N., R. 2 W., at highway bridge 2½ miles northeast of Dover and 3 miles above mouth of Sugar Creek. Zero of gage is 861.51 feet above mean sea level.

DRAINAGE AREA.—1,400 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,160 second-feet Apr. 23; maximum gage height, 4.84 feet June 9; minimum discharge, 120 second-feet Aug. 4; minimum gage height, −0.57 foot Oct. 27.

1923–1931: Maximum discharge, 20,700 second-feet Feb. 27, 1929 (gage height, 13.3 feet); minimum mean daily discharge, 68 second-feet Aug. 5, 1930; minimum gage height, that of Oct. 27, 1930.

REMARKS.—Records good except those for extremely low water, which are fair. Discharge Oct. 1 to Nov. 30, Dec. 13–31, Jan. 1–4, 15, 16, 18, Feb. 3–7 determined from power-plant records. Small amount of water diverted into Cuyahoga River Basin by Ohio Canal at Portage Lakes. There is no appreciable flow in Ohio Canal at this gaging station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	210	205	208	198	250	355	890	1,260	817	380	264	502
2	209	205	236	194	231	344	1,520	1,030	681	349	237	852
3	209	204	319	193	210	329	2,780	890	558	330	220	2,380
4	210	204	314	199	210	319	3,680	796	488	330	204	2,380
5	207	204	245	219	210	309	3,800	704	666	324	208	1,750
6	204	203	221	794	210	284	3,200	619	801	855	213	1,200
7	201	202	264	983	210	250	2,300	591	1,190	768	213	801
8	201	200	294	510	331	294	1,520	935	3,620	433	224	586
9	202	198	274	355	487	350	1,170	1,230	4,000	349	219	481
10	204	196	221	314	393	365	971	908	2,500	318	292	433
11	208	195	255	268	344	324	1,030	770	1,530	282	440	374
12	210	197	231	226	314	314	1,040	728	1,060	288	406	343
13	208	203	211	245	352	299	804	1,470	833	282	791	349
14	208	206	211	212	1,230	309	696	2,300	697	288	894	282
15	206	205	210	210	1,140	381	605	1,640	1,120	276	600	264
16	205	205	209	209	873	461	542	1,200	868	259	426	253
17	197	206	201	217	704	468	500	1,120	705	264	312	380
18	196	206	194	210	1,030	454	474	1,100	600	259	288	504
19	192	205	204	217	1,240	461	448	1,470	523	288	426	615
20	188	205	208	429	1,060	563	405	1,910	460	282	622	447
21	188	205	208	435	971	664	387	1,420	440	362	530	318
22	189	205	208	250	787	598	1,110	1,080	413	530	440	270
23	188	204	207	309	633	542	3,800	1,110	530	474	343	230
24	188	201	206	299	577	500	3,440	1,220	544	393	306	236
25	188	197	204	231	514	556	2,300	1,310	440	318	276	236
26	188	198	204	245	454	890	2,250	1,520	380	282	330	361
27	184	198	207	339	429	1,120	3,680	1,140	447	270	583	467
28	188	188	209	344	381	1,010	3,020	856	530	247	1,060	413
29	195	181	208	319	-------	1,310	2,250	688	467	242	769	324
30	198	192	207	309	-------	1,230	1,580	530	400	230	579	270
31	203	-------	204	274	-------	935	-------	681	-------	259	516	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	210	184	199	0.142	0.16
November	206	181	201	.144	.16
December	319	194	226	.161	.19
January	983	193	315	.225	.26
February	1,240	210	563	.402	.42
March	1,310	250	535	.382	.44
April	3,800	387	1,740	1.24	1.38
May	2,300	530	1,100	.786	.91
June	4,000	380	944	.674	.75
July	855	230	349	.249	.29
August	1,060	204	427	.305	.35
September	2,380	230	610	.436	.49
The year	4,000	181	598	.427	5.80

TUSCARAWAS RIVER AT NEWCOMERSTOWN, OHIO

LOCATION.—Water-stage recorder in T. 5 N., R. 3 W., at highway bridge three-quarters of a mile east of Newcomerstown. Zero of gage is 785.03 feet above mean sea level.

DRAINAGE AREA.—2,430 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 10,200 second-feet Apr. 6 (gage height, 6.43 feet); minimum, 162 second-feet Dec. 31.

1921–1931: Maximum discharge, 29,400 second-feet Feb. 28, 1929 (gage height, 13.5 feet); minimum, 120 second-feet Aug. 7, 1930.

Flood of March, 1913, reached a stage of about 21.5 feet, present gage datum (discharge estimated, 130,000 second-feet).

REMARKS.—Records good except those for periods of ice effect, which are fair. Small amount of water is diverted into Cuyahoga River Basin by Ohio Canal at Portage Lakes.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	245	a 280	a 203	363	672	1,580	2,120	1,140	547	339	554
2	236	257	a 269	a 203	337	638	2,190	1,760	1,120	524	466	835
3	231	274	a 269	a 203	311	638	5,180	1,620	940	487	380	2,740
4	217	257	a 274	207	298	621	9,050	1,450	844	459	291	3,660
5	217	251	a 304	226	292	579	9,730	1,280	853	473	265	2,600
6	217	245	350	340	274	554	9,960	1,150	1,350	495	274	2,120
7	222	245	350	a 958	292	524	7,730	1,100	1,[illegible]90	950	274	1,290
8	222	245	407	a 708	337	539	4,890	1,140	4,390	630	253	902
9	222	240	444	a 482	561	554	2,860	1,730	6,860	495	260	698
10	217	240	370	a 363	646	630	2,120	1,610	5,840	439	287	613
11	217	240	304	a 317	520	630	1,980	1,330	4,040	405	377	547
12	212	245	257	a 304	467	571	2,200	1,230	2,520	374	579	487
13	240	245	269	a 298	505	562	1,830	1,450	1,580	368	571	452
14	231	245	251	a 292	1,200	554	1,480	3,390	1,240	350	855	439
15	222	269	251	a 269	2,420	630	1,290	3,030	1,340	356	744	393
16	222	280	231	a 240	1,730	862	1,150	2,280	1,510	335	508	380
17	245	286	a 203	a 231	1,330	980	1,040	1,760	1,120	315	393	399
18	240	274	a 198	a 240	1,360	900	990	1,650	990	340	325	539
19	231	280	198	a 257	2,120	882	920	1,980	862	330	300	713
20	226	280	198	324	2,050	940	853	2,360	770	340	476	806
21	217	274	a 193	561	1,900	1,220	806	2,120	707	374	547	655
22	217	263	a 198	a 392	1,610	1,210	1,340	1,590	664	571	480	510
23	222	251	a 198	a 317	1,330	1,020	5,460	1,350	664	698	405	446
24	231	245	a 194	a 344	1,130	940	6,650	1,480	733	621	340	418
25	226	245	a 198	a 337	1,000	950	4,700	1,550	681	466	305	459
26	226	245	a 207	298	872	1,360	3,480	1,760	604	362	305	547
27	231	240	207	350	797	2,050	5,460	1,760	571	320	358	596
28	245	a 222	207	459	715	1,900	5,460	1,360	672	300	792	815
29	231	a 222	212	444	------	1,900	3,940	1,120	690	287	1,020	618
30	236	240	a 212	429	------	2,200	2,780	960	613	287	724	502
31	240	------	a 207	385	------	1,830	------	940	------	291	630	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	245	212	227	0.093	0.11
November	286	222	253	.104	.12
December	444	194	255	.105	.12
January	958	203	354	.146	.17
February	2,420	274	956	.393	.41
March	2,200	524	969	.399	.46
April	9,960	806	3,640	1.50	1.67
May	3,390	940	1,660	.683	.79
June	6,860	571	1,580	.650	.73
July	950	287	438	.180	.21
August	1,020	253	456	.188	.22
September	3,660	418	891	.367	.41
The year	9,960	194	967	.398	5.42

a Estimated because of ice effect.

MUSKINGUM RIVER AT DRESDEN, OHIO

LOCATION.—Water-stage recorder at highway bridge half a mile east of Dresden, Muskingum County, half a mile below Wakatomika Creek. Zero of gage is 693.15 feet above mean sea level.

DRAINAGE AREA.—5,980 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 19,200 second-feet Apr. 5 (gage height, 14.07 feet); minimum, 402 second-feet Oct. 7 (gage height, 3.64 feet).

1921–1931: Maximum discharge, 55,500 second-feet Mar. 23, 1927 (gage height, 26.0 feet); minimum, 335 second-feet June 25, 1925 (gage height, 2.73 feet).

Maximum known stage, 46.0 feet on present gage occurred in March, 1913 (discharge estimated at 160,000 second-feet).

REMARKS.—Records good except those estimated because of ice effect, which are fair. Occasional slight regulation at Dam 11, 7 miles below gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	557	548	638	[a] 530	1,060	1,750	4,120	6,230	2,200	1,210	665	2,070
2	514	557	[a] 860	[a] 540	1,000	1,570	4,260	5,280	2,720	1,130	1,070	3,320
3	498	566	1,190	[a] 590	930	1,510	7,340	4,540	2,330	990	1,140	6,400
4	482	584	970	[a] 640	850	1,450	16,800	4,120	2,140	880	860	8,170
5	474	557	970	710	800	1,400	18,600	3,700	2,260	820	683	8,540
6	466	[redacted]48	920	920	750	1,330	17,900	3,350	2,200	810	620	7,990
7	442	548	880	[a]1,550	750	1,250	17,200	3,210	2,930	1,010	629	6,230
8	498	539	910		830	1,240	14,700	3,210	4,680	1,510	584	5,130
9	466	522	970		1,140	1,300	11,700	3,560	9,110	1,050	522	4,400
10	498	514	960		1,570	1,400	7,810	3,840	9,300	840	701	3,350
11	665	506	910		1,630	1,570	5,280	3,420	7,090	710	1,120	2,330
12	584	539	830		1,400	1,570	4,830	3,210	5,280	692	2,330	1,810
13	539	548	790	[a] 930	1,400	1,450	4,680	3,560	3,700	692	2,590	1,510
14	522	557	780		2,640	1,430	3,980	5,280	2,860	620	2,930	1,340
15	522	566	730		4,680	1,450	3,490	6,070	2,400	602	3,140	1,230
16	506	602	701		4,400	1,750	3,070	5,130	2,660	566	2,330	1,120
17	506	602	[a] 680	[a] 650	3,700	2,200	2,720	4,400	2,460	732	1,630	1,120
18	548	620	656		3,210	2,260	2,520	4,260	2,070	850	1,240	1,350
19	530	611	656	780	3,490	2,200	2,330	4,260	1,810	1,440	1,010	1,630
20	522	593	611	800	4,120	2,200	2,200	4,260	1,570	1,750	1,160	2,520
21	506	611	575		4,120	2,400	2,070	4,260	1,400	1,510	1,880	2,260
22	498	602	[a] 550		3,840	2,720	4,440	3,700	1,260	2,400	2,000	1,630
23	490	584	[a] 550	[a] 930	3,420	2,790	13,900	3,210	1,210	2,140	1,630	1,300
24	506	566	[a] 560		2,930	2,520	16,000	3,140	1,210	1,940	1,240	1,210
25	506	557	[a] 550		2,590	2,400	12,400	3,210	1,260	1,570	970	1,510
26	522	548	620	870	2,330	2,660	9,870	3,280	1,140	1,180	860	1,750
27	522	557	620	940	2,070	3,840	14,000	3,560	1,080	910	1,530	1,810
28	557	[a] 515	611	1,190	1,880	4,260	13,500	3,140	1,090	790	4,260	2,720
29	548	[a] 520	593	1,280	-------	4,260	10,200	2,590	1,320	701	3,980	2,460
30	557	584	[a] 540	1,250	-------	5,130	7,990	2,260	1,220	638	3,140	1,810
31	566	-------	[a] 530	1,140	-------	4,680	-------	2,070	-------	674	2,400	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	665	442	520	0.087	0.10
November	620	506	562	.094	.10
December	1,190	530	739	.124	.14
January	-------	530	956	.160	.18
February	4,680	750	2,270	.380	.40
March	5,130	1,240	2,260	.378	.44
April	18,600	2,070	8,660	1.45	1.62
May	6,230	2,070	3,850	.644	.74
June	9,300	1,080	2,800	.468	.52
July	2,400	566	1,080	.181	.21
August	4,260	522	1,640	.274	.32
September	8,540	1,120	3,000	.502	.56
The year	18,600	442	2,350	.393	5.33

[a] Estimated because of ice effect.

MUSKINGUM RIVER AT McCONNELSVILLE, OHIO

LOCATION.—Water-stage recorder in SE. ¼ sec. 11, T. 10 N., R. 12 W., above Dam 7, at McConnelsville. Zero of gage is at elevation of crest of dam, 650.31 feet above mean sea level.

DRAINAGE AREA.—7,410 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 24,800 second-feet Apr. 4 (gage height, 6.06 feet); minimum, about 275 second-feet Oct. 12 (gage height, −0.40 foot).

1921–1931. Maximum discharge, about 76,600 second-feet Apr. 16, 1922 (gage height, 11.9 feet); minimum, about 218 second-feet Aug. 25, 1930 (gage height, −0.65 foot).

The flood of Mar. 27, 1913, reached a stage of 33.5 feet, present gage datum (discharge, estimated, 200,000 second-feet).

REMARKS.—Records excellent except those for extremely low water and for estimated period Oct. 18–29, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	854	790	724	806	1,280	1,950	4,440	7,520	2,320	1,380.	934	2,290
2	777	698	822	724	1,260	1,770	5,050	6,100	2,520	1,440	950	3,100
3	684	777	902	684	1,140	1,730	8,780	5,220	2,590	1,340	1,420	6,490
4	533	870	1,140	838	1,100	1,620	21,800	4,590	2,320	1,280	1,530	8,380
5	428	822	1,280	790	1,010	1,550	22,400	4,140	2,440	1,180	1,140	9,500
6	532	790	1,400	950	950	1,530	19,400	3,850	2,440	1,120	918	8,170
7	684	737	1,320	1,420	918	1,440	17,700	3,710	3,240	969	838	6,490
8	618	777	1,300	1,950	950	1,440	16,200	3,710	4,900	1,360	790	5,050
9	648	658	1,240	1,770	1,200	1,510	13,200	3,710	7,310	1,490	764	4,290
10	648	724	1,300	1,470	1,550	1,550	9,720	4,000	9,280	1,180	1,380	3,570
11	489	764	1,320	1,400	1,730	1,660	6,300	4,000	7,520	1,010	1,510	2,720
12	325	806	1,260	1,340	1,620	1,770	5,050	3,570	5,560	902	2,020	2,050
13	648	806	1,120	1,240	1,680	1,750	4,900	4,290	4,140	886	4,340	1,770
14	658	822	1,120	1,080	2,490	1,660	4,440	5,220	3,260	854	4,000	1,570
15	711	806	1,100	918	4,440	1,640	3,850	6,300	2,800	806	3,570	1,400
16	658	806	1,060	806	4,590	1,770	3,460	5,730	2,650	790	2,800	1,360
17	618	950	950	737	4,000	2,140	3,130	5,050	2,750	790	2,140	1,340
18		969	854	806	3,370	2,360	2,880	4,290	2,340	1,250	1,590	2,680
19	670	838	918	918	3,370	2,320	2,700	4,440	2,050	1,340	1,340	2,190
20		854	822	918	4,000	2,240	2,540	4,290	1,820	1,770	1,260	2,260
21		870	698	934	4,140	2,290	2,570	4,290	1,730	2,620	1,730	2,540
22		870	870	988	3,850	2,590	8,080	4,000	1,770	3,260	2,260	2,020
23	640	711	918	1,080	3,490	2,750	14,700	3,570	1,470	2,650	2,000	1,930
24		822	822	1,160	3,050	2,650	17,200	3,260	1,380	2,140	1,590	2,240
25		838	671	1,120	2,700	2,490	15,200	3,370	1,490	2,000	1,300	1,790
26		777	671	1,100	2,440	2,570	11,300	3,710	1,510	1,550	1,440	3,070
27		764	724	1,100	2,220	3,290	13,700	3,570	1,550	1,280	1,590	2,440
28	680	790	870	1,220	2,050	4,140	15,200	3,430	1,400	1,030	3,370	2,780
29		750	870	1,400	------	4,140	12,200	3,020	1,400	918	4,140	2,970
30	724	806	902	1,420	------	4,740	9,500	2,650	1,470	854	3,490	2,420
31	764	------	886	1,340	------	4,740	--------	2,420	-------	988	2,910	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	854	325	643	0.087	0.10
November	969	658	802	.108	.12
December	1,400	671	995	.134	.15
January	1,950	684	1,110	.150	.17
February	4,590	918	2,380	.321	.33
March	4,740	1,440	2,320	.313	.36
April	22,400	2,540	9,920	1.34	1.50
May	7,520	2,420	4,230	.571	.66
June	9,280	1,380	2,980	.402	.45
July	3,260	790	1,370	.185	.21
August	4,340	764	1,970	.266	.31
September	9,500	1,340	3,360	.453	.51
The year	22,400	325	2,660	.359	4.87

SANDY CREEK AT SANDYVILLE, OHIO

LOCATION.—Water-stage recorder in sec. 8, T. 10 N., R. 1 W., 100 feet below highway bridge half a mile south of Sandyville.

DRAINAGE AREA.—481 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,100 second-feet June 8 (gage height, 5.95 feet); minimum, 32 second-feet Nov. 9 (gage height, 1.03 feet).

1923–1930: Maximum discharge, 15,300 second-feet Feb. 26, 1929; minimum, that of Nov. 9, 1930.

REMARKS.—Records good except those for extremely high water, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	88	133	84	102	151	417	407	341	137	85	136
2	85	78	109	87	111	151	822	349	253	123	74	415
3	86	99	112	82	98	144	1,220	337	207	118	80	1,110
4	81	89	92	72	100	141	1,580	291	207	111	82	786
5	69	87	89	176	92	132	1,230	257	514	96	87	583
6	88	94	115	362	89	121	878	231	394	729	85	354
7	80	84	108	205	131	124	615	230	970	287	81	244
8	86	94	120	159	156	128	471	562	2,880	160	79	192
9	88	67	108	126	180	148	377	459	2,230	126	79	172
10	80	92	99	113	149	132	346	342	1,040	107	143	158
11	95	86	108	96	121	124	384	317	596	113	119	120
12	78	102	101	112	134	125	346	295	437	101	133	128
13	86	92	96	98	214	113	276	701	349	104	436	112
14	86	90	84	92	591	142	242	800	301	98	283	106
15	82	79	100	87	375	219	222	514	540	95	153	113
16	85	88	86	90	322	239	200	386	369	104	113	154
17	82	112	102	85	326	217	188	397	332	92	100	200
18	85	94	91	78	610	199	184	343	263	99	169	281
19	76	91	86	135	501	217	170	408	206	92	254	291
20	91	90	82	155	437	262	160	368	186	97	235	176
21	88	87	72	108	393	273	149	431	178	142	153	139
22	82	88	88	109	324	238	735	341	203	151	121	123
23	82	75	82	98	282	220	1,950	459	256	145	102	111
24	86	93	82	90	254	214	1,180	465	193	109	93	107
25	84	92	69	85	212	277	691	534	165	97	132	119
26	74	93	89	122	203	472	982	521	160	89	226	235
27	93	75	84	133	180	435	1,460	373	206	88	330	177
28	97	85	72	126	156	450	911	291	162	90	341	139
29	94	94	90	125	-------	660	553	240	140	92	229	121
30	95	110	79	117	-------	476	598	220	134	82	174	109
31	94	-------	81	111	-------	390	-------	295	-------	103	144	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	97	69	85.2	0.177	0.20
November	112	67	89.6	.186	.21
December	133	69	93.8	.195	.22
January	362	72	120	.249	.29
February	610	89	244	.507	.53
March	660	113	237	.493	.57
April	1,950	149	651	1.35	1.51
May	800	220	392	.815	.94
June	2,880	134	480	.998	1.11
July	729	82	135	.281	.32
August	436	74	159	.331	.38
September	1,110	106	240	.499	.56
The year	2,880	67	243	.505	6.84

NIMISHILLEN CREEK AT NORTH INDUSTRY, OHIO

LOCATION.—Water-stage recorder in SW. ¼ sec. 35, T. 10 N., R. 8 W., just below railroad bridge and 1 mile southeast of North Industry. Zero of gage is 970.77 feet above mean sea level.

DRAINAGE AREA.—175 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, about 1,290 second-feet July 5 (gage height, 4.30 feet); minimum, 6.6 second-feet Oct. 11.

1921–1931: Maximum discharge, about 4,000 second-feet Feb. 26, 1929 (gage height, 9.9 feet); minimum, 4.2 second-feet June 30, 1930.

REMARKS.—Records good. Slight regulation by steel mills at Canton, about 4 miles above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	27	50	34	39	48	146	68	61	51	25	70
2	28	25	35	33	40	50	298	64	56	53	24	179
3	26	28	34	33	37	47	469	61	54	48	27	279
4	24	27	31	39	39	43	433	57	120	40	23	131
5	24	27	34	154	35	42	206	54	168	182	25	87
6	26	25	51	260	35	39	129	52	107	502	26	64
7	26	26	45	99	83	42	100	88	507	120	25	49
8	34	25	41	70	93	53	83	156	595	62	24	48
9	31	24	40	54	76	50	71	100	236	49	22	41
10	28	28	36	49	61	42	79	77	136	44	72	40
11	27	27	43	45	49	42	77	69	100	42	38	38
12	25	39	40	51	54	43	71	71	80	39	57	36
13	26	32	37	47	183	42	61	208	74	38	258	33
14	26	30	33	44	284	53	55	145	87	38	65	33
15	26	28	33	42	112	73	53	89	175	36	39	34
16	27	27	32	40	93	70	51	68	92	36	31	35
17	27	38	31	41	143	65	50	81	82	33	29	48
18	25	33	30	41	268	61	46	60	68	33	125	50
19	23	31	31	104	166	79	42	55	65	30	68	37
20	25	30	31	98	134	87	41	63	75	37	49	32
21	27	29	30	54	107	89	43	58	58	72	37	30
22	27	28	32	38	84	76	408	88	115	42	32	30
23	27	27	33	34	77	67	431	107	81	40	29	30
24	24	29	32	34	72	70	175	108	64	32	29	30
25	25	32	29	37	61	103	114	128	59	27	69	96
26	25	32	35	54	61	152	341	103	79	24	162	90
27	32	29	35	53	52	119	363	76	103	26	233	49
28	34	29	33	50	49	168	191	62	62	27	139	37
29	36	29	35	48	-------	204	118	55	58	26	73	32
30	28	62	34	46	-------	123	82	51	55	33	60	30
31	32	-------	34	44	-------	97	-------	72	-------	31	46	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	36	23	27.4	0.157	0.18
November	62	24	30.1	.172	.19
December	51	29	35.5	.203	.23
January	260	33	60.3	.345	.40
February	284	35	92.4	.528	.55
March	204	39	75.5	.431	.50
April	469	41	161	.920	1.03
May	208	51	83.7	.478	.55
June	595	54	122	.697	.78
July	502	24	61.1	.349	.40
August	258	22	63.3	.362	.42
September	279	30	60.6	.346	.39
The year	595	22	72.4	.414	5.62

SUGAR CREEK AT STRASBURG, OHIO

LOCATION.—Chain gage at highway bridge in NW. ¼ sec. 1, T. 9 N., R. 3 W., three-quarters of a mile southeast of Strasburg. Zero of gage is 898.245 feet above mean sea level.
DRAINAGE AREA.—310 square miles.
RECORDS AVAILABLE.—July to September, 1931.
EXTREMES.—Maximum discharge during period, 650 second-feet Sept. 3 (gage height, 3.60 feet); minimum, 12 second-feet Aug. 7–9, 19, 23 (gage height, 1.08 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1931

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-------	20	34	11	-------	96	29	21	-------	20	20
2	-------	16	300	12	-------	57	26	22	-------	19	17
3	-------	14	530	13	-------	121	23	23	-------	12	17
4	-------	13	144	14	-------	109	21	24	-------	13	15
5	-------	13	442	15	-------	42	20	25	-------	13	16
6	-------	13	144	16	-------	27	24	26	-------	14	29
7	-------	12	77	17	-------	21	27	27	-------	66	62
8	-------	12	54	18	-------	18	39	28	-------	60	36
9	-------	12	42	19	-------	22	36	29	15	31	20
10	-------	20	34	20	-------	27	24	30	15	27	20
								31	17	105	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
August	121	12	34.4	0.111	0.13
September	530	15	77.4	.250	.28

STILLWATER CREEK AT UHRICHSVILLE, OHIO

LOCATION.—Staff gage at waterworks pumping station 1 mile south of Uhrichsville and Dennison, Tuscarawas County.

DRAINAGE AREA—367 square miles.

RECORDS AVAILABLE.—July, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,270 second-feet Apr. 6 (gage height, 9.10 feet); no flow Oct. 1 to Nov. 17.

1922–1931: Maximum discharge, 7,430 second-feet Dec. 16, 1927 (gage height, 11.8 feet); no flow July 31 to Nov. 17, 1930; minimum gage height, −0.55 foot Aug. 21, 1930.

REMARKS.—Records fair. Discharge estimated Dec. 30 to Jan. 3, because of ice effect. Municipal water supply for Dennison and Uhrichsville diverted at gage. Diversion included in monthly table of discharge. Gage-height record furnished by the Dennison Water Supply Co.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	15		44	83	313	313	83	30	272	92
2	0	17	7.0	37	92	697	252	100	30	231	157
3	0	21		28	96	1,520	252	88	24	83	742
4	0	19	5.8	26	79	2,500	231	64	28	34	654
5	0	15	10	21	67	4,360	206	124	79	83	525
6	0	21	19	21	57	5,040	178	525	37	54	397
7	0	28	44	26	47	3,710	170	397	28	30	252
8	0	60	67	32	54	1,880	178	1,460	15	21	170
9	0	57	64	88	79	742	252	2,000	13	13	100
10	0	32	41	124	141	439	231	2,120	10	28	79
11	0	28	28	96	128	525	198	1,760	9.2	215	64
12	0	19	24	120	104	611	178	697	10	198	57
13	0	19	17	128	100	460	292	355	8.0	92	41
14	0	19	17	397	100	355	654	231	8.0	92	34
15	0	21	21	611	190	292	611	186	8.0	71	30
16	0	15	21	355	355	252	504	165	5.8	37	30
17	0	13	17	227	292	223	334	145	5.8	28	37
18	0.2	10	15	252	252	202	272	128	10	26	88
19	2.5	9.2	15	418	206	186	252	112	10	17	252
20	6.8	5.8	21	418	292	165	252	88	9.2	34	292
21	8.0	5.8	34	418	376	137	252	64	24	47	202
22	10	5.8	41	334	313	252	190	57	57	34	92
23	10	5.8	37	252	252	1,220	161	50	292	28	67
24	4.9	5.8	24	210	210	1,220	165	44	190	24	141
25	5.8	5.8	26	165	272	742	165	41	54	15	252
26	5.8	8.0	30	137	568	525	170	37	32	15	182
27	8.0	8.0	47	112	525	742	231	30	26	28	355
28	5.8	8.0	64	96	439	654	157	83	17	334	292
29	4.0	8.0	67	-------	460	504	116	75	12	227	165
30	8.0	8.0	60	-------	460	397	96	41	10	145	112
31	-------	8.0	50	-------	355	-------	83	-------	12	100	-------

Month	Observed				Corrected for diversion		Run-off, in inches
	Maximum	Minimum	Mean	Mean diversion	Mean	Per square mile	
October	0	0	0	2.59	2.59	0.007	0.01
November	10	0	2.66	2.38	5.04	.014	.02
December	60	5.8	16.81	2.23	19.0	.052	.06
January	67	5.8	30.57	2.31	32.9	.090	.10
February	611	21	185.46	2.23	188	.512	.53
March	568	47	227.22	2.32	230	.627	.72
April	5,040	137	1,028.83	2.30	1,030	2.81	3.14
May	654	83	245.03	2.16	247	.673	.78
June	2,120	30	378.33	2.29	381	1.04	1.16
July	292	5.8	35.61	2.36	38.0	.104	.12
August	334	13	85.68	2.28	88.0	.240	.28
September	742	30	198.43	2.31	201	.548	.61
The year	5,040	0	200.85	2.31	203	.553	7.53

BLACK FORK AT LOUDONVILLE, OHIO

LOCATION.—Chain gage in NW. ¼ sec. 1, T. 19 N., R. 16 W., at highway bridge at Loudonville, Ashland County, 1½ miles below mouth of Big Run. Zero of gage is 928.46 feet above mean sea level.

DRAINAGE AREA.—342 square miles.

RECORDS AVAILABLE.—May to September, 1931.

EXTREMES.—Maximum discharge during period, 1,030 second-feet Aug. 10 (gage height, 6.08 feet); minimum, 38 second-feet Aug. 8, 9 (gage height, 2.42 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1931

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	211	104	44	88	16	-------	82	46	143	236
2	-------	188	82	44	261	17	-------	72	46	106	104
3	-------	134	65	44	498	18	-------	69	557	88	130
4	-------	118	55	44	383	19	-------	65	327	77	93
5	-------	112	49	42	498	20	-------	61	341	73	73
6	-------	101	132	40	314	21	-------	56	274	67	62
7	-------	145	73	39	211	22	-------	54	176	62	62
8	-------	411	56	38	141	23	-------	56	112	55	58
9	-------	327	51	38	108	24	-------	54	89	52	55
10	-------	223	54	469	95	25	-------	54	70	51	55
11	-------	150	95	469	80	26	143	56	61	65	188
12	-------	120	54	274	70	27	132	89	55	383	152
13	-------	102	46	498	67	28	112	89	51	248	152
14	-------	88	44	440	58	29	102	112	49	154	112
15	-------	97	46	248	72	30	97	139	49	122	91
						31	124	-------	46	114	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
May 26-31	143	97	118	0.345	0.08
June	411	54	121	.354	.39
July	557	44	108	.316	.36
August	498	38	149	.436	.50
September	498	55	152	.444	.50

MOHICAN RIVER AT GREER, OHIO

LOCATION.—Chain gage at highway bridge at Greer, Knox County, prior to July 21, 1931, and water-stage recorder thereafter at site 3,000 feet below chain gage. Zero of both gages is 872.91 feet above mean sea level.

DRAINAGE AREA.—942 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,740 second-feet Apr. 26 (gage height, 5.50 feet); minimum, 76 second-feet Dec. 31 (gage height, 1.22 feet).

1921–1931: Maximum discharge, 15,400 second-feet Mar. 21, 1927 (gage height, 12.7 feet); minimum, that of Dec. 31, 1930.

Maximum stage known, 27.0 feet during flood of March, 1913 (discharge, estimated, 55,000 second-feet).

REMARKS.—Records good. Stage-discharge relation affected by ice at times, November to January.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	144	755	e 100	276	258	800	942	630	199	e 160	255
2	122	144	224	e 150	249	249	990	702	430	162	e 150	703
3	122	157	e 216	164	215	241	2,350	560	323	136	e 120	1,790
4	116	151	e 208	170	207	232	2,700	492	274	136	e 110	1,040
5	116	151	e 200	207	192	224	1,430	430	354	130	100	1,430
6	116	151	e 215	1,190	185	207	1,160	430	274	460	e 94	1,020
7	111	144	232	665	215	215	1,070	399	525	191	e 90	575
8	133	144	224	404	241	241	780	525	1,340	136	e 84	348
9	303	144	207	341	458	267	595	492	740	119	e 80	278
10	200	144	200	303	393	285	492	460	492	107	e 84	225
11	144	151	200	382	276	267	492	399	377	169	e 1,600	197
12	151	157	192	303	294	249	460	388	274	130	872	181
13	133	170	185	e 250	361	249	377	460	239	113	941	168
14	133	177	177	e 200	1,590	285	333	525	231	104	1,310	154
15	133	170	164	e 190	1,690	350	312	430	239	107	676	146
16	138	157	e 140	e 180	755	418	283	365	184	104	349	246
17	157	157	e 120	e 180	508	404	274	399	184	102	230	200
18	133	157	e 140	e 200	620	372	265	985	176	1,250	181	225
19	133	151	e 140	e 260	582	372	256	595	156	922	157	189
20	133	151	e 140	e 470	545	393	239	492	143	595	143	154
21	133	151	e 120	331	545	431	231	460	143	460	136	136
22	133	151	e 120	e 280	458	665	2,440	399	136	414	129	132
23	127	151	e 130	e 270	404	545	3,360	399	136	245	123	129
24	138	144	e 130	e 260	382	445	1,620	399	143	176	111	123
25	144	144	e 140	e 260	361	545	1,340	399	143	146	108	126
26	138	138	e 160	e 310	331	895	3,740	430	143	126	348	321
27	138	127	e 160	508	303	800	3,610	354	222	e 108	1,700	348
28	170	e 122	e 140	445	276	710	1,820	302	206	e 102	710	302
29	164	e 120	e 120	361	-------	1,490	1,620	274	191	e 100	435	225
30	164	e 130	102	322	-------	1,040	1,250	256	265	97	296	176
31	151	-------	76	294	-------	895	-------	274	-------	e 97	320	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	303	111	144	0.153	0.18
November	177	e 120	148	.157	.18
December	755	76	183	.194	.22
January	1,190	e 100	321	.341	.39
February	1,690	185	461	.489	.51
March	1,490	207	459	.487	.56
April	3,740	231	1,220	1.30	1.45
May	985	256	465	.494	.57
June	1,340	136	310	.329	.37
July	1,250	97	240	.255	.29
August	1,700	e 80	385	.409	.47
September	1,790	123	385	.409	.46
The year	3,740	76	392	.416	5.65

e Estimated.

WALHONDING RIVER AT POMERENE, OHIO

LOCATION.—Water-stage recorder at highway bridge at Pomerene, Coshocton County, one-third of a mile above Honey Run. Zero of gage is 805.53 feet above mean sea level.

DRAINAGE AREA.—1,490 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1931. Records from December, 1910, to March, 1913, published under name of Mohican River at Pomerene.

EXTREMES.—Maximum discharge during year, 7,260 second-feet Apr. 23 (gage height, 6.71 feet); minimum, 111 second-feet probably Nov. 29 (gage height, 1.13 feet).

1921–1931: Maximum discharge, 27,400 second-feet on Feb. 27, 1929 (gage height, 15.5 feet); minimum, 101 second-feet Aug. 30, 1925 (gage height, 1.04 feet).

The flood of March, 1913, reached a stage of 21.6 feet (discharge, estimated, 80,000 second-feet).

REMARKS.—Records excellent except those for estimated periods, Oct. 28 to Dec. 8, Dec. 16 to Jan. 25, Feb. 5, June 4–7, which are good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	230	1,000	180	368	380	1,010	1,540	560	316	229	550
2	191	230	330	240	344	374	1,180	1,180	680	275	214	966
3	191	250	320	300	320	350	2,340	960	510	237	187	2,740
4	187	240	310	320	302	344	4,140	780	430	206	171	1,960
5	187	240	300	330	288	338	2,740	671	470	198	171	2,660
6	178	240	320	590	284	320	1,900	626	440	284	171	2,060
7	187	230	340	1,300	293	316	1,540	626	480	428	168	1,180
8	191	230	330	1,100	383	326	1,240	680	1,410	280	155	800
9	227	230	288	770	542	363	960	780	980	237	149	608
10	344	230	280	610	534	386	790	680	662	210	171	503
11	275	240	271	570	454	374	720	617	489	214	1,750	434
12	233	250	267	500	392	356	662	582	410	254	1,220	386
13	217	270	271	370	426	344	574	626	368	206	915	350
14	206	280	262	300	1,990	362	510	780	332	194	2,040	316
15	202	270	246	290	1,380	440	454	730	338	181	1,110	302
16	198	250	220	280	980	526	428	582	332	184	598	320
17	202	250	200	280	760	510	410	526	338	178	416	447
18	198	250	230	300	710	496	404	1,190	267	340	320	521
19	194	240	230	390	820	468	380	960	250	1,420	298	454
20	191	240	220	700	780	482	374	680	237	830	490	356
21	194	240	210	620	740	541	380	590	233	944	534	302
22	191	240	210	410	662	740	2,250	526	225	1,200	386	280
23	194	240	210	400	574	653	5,980	510	229	641	298	280
24	198	230	220	400	550	550	3,190	534	237	410	262	284
25	202	230	220	400	510	590	2,080	534	225	302	229	262
26	198	220	260	422	461	980	3,280	590	221	254	254	345
27	202	210	250	599	428	1,020	5,970	526	275	225	2,980	599
28	260	200	230	510	398	920	3,460	454	326	202	2,030	496
29	250	200	210	461	-------	1,910	2,480	428	288	194	1,100	422
30	250	210	180	410	-------	1,420	1,960	398	338	187	740	356
31	240	-------	160	392	-------	1,110	-------	410	-------	181	599	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	344	178	212	0.142	0.16
November	280	200	237	.159	.18
December	1,000	160	277	.186	.21
January	1,300	180	476	.319	.37
February	1,990	284	595	.399	.42
March	1,910	316	590	.396	.46
April	5,980	374	1,790	1.20	1.34
May	1,540	398	687	.461	.53
June	1,410	221	419	.281	.31
July	1,420	178	368	.247	.28
August	2,980	149	657	.441	.51
September	2,740	262	718	.482	.54
The year	5,980	149	583	.391	5.31

ROCKY FORK NEAR MANSFIELD, OHIO

LOCATION.—Chain gage in NE. ¼ sec. 26, T. 21 N., R. 18 W., at highway bridge on lower Lucas Road, 2 miles southeast of Mansfield. Zero of gage is 1,120.88 feet above mean sea level.

DRAINAGE AREA.—38.3 square miles.

RECORDS AVAILABLE.—August, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,150 second-feet Aug. 10 (gage height, 7.70 feet); minimum, 6.7 second-feet Nov. 21, Jan. 8 (gage height, 1.08 feet).

1925–1931: Maximum discharge, 2,470 second-feet Feb. 26, 1929 (gage height, 12.9 feet); minimum, 6.3 second-feet Nov. 7, 1927 (gage height, 1.04 feet).

REMARKS.—Records good. Slight diurnal fluctuation at low water due to operation of Mansfield sewage treatment works.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	14	22	14	18	14	54	27	23	18	14	90
2	12	11	14	14	21	16	170	26	17	14	12	252
3	12	12	15	14	20	15	222	36	17	13	14	84
4	12	12	14	24	16	15	110	20	36	12	13	78
5	11	13	15	81	14	14	45	21	17	78	14	72
6	11	13	25	36	12	16	34	19	18	14	14	20
7	14	14	14	18	55	15	28	35	117	14	14	18
8	41	12	14	9.9	33	20	23	28	60	13	14	16
9	15	10	16	12	27	17	22	25	22	12	8.3	19
10	12	16	14	11	24	22	25	24	18	56	700	19
11	12	16	18	14	20	20	22	23	18	38	37	17
12	12	23	13	17	20	22	20	25	18	11	26	15
13	14	22	14	17	140	21	18	29	17	17	300	12
14	12	16	12	14	70	30	18	23	19	17	132	16
15	12	14	13	14	31	36	20	20	20	14	30	20
16	13	11	14	14	25	36	20	19	17	14	20	28
17	17	17	12	15	29	29	20	84	14	26	16	21
18	10	14	12	12	29	24	19	29	15	73	14	41
19	9.5	14	12	45	31	33	16	21	14	23	15	30
20	12	14	12	16	25	55	14	34	14	20	20	20
21	14	9.9	11	16	22	45	52	23	12	20	18	23
22	14	14	13	12	21	29	527	26	16	19	14	20
23	14	12	14	13	19	31	110	26	16	16	12	16
24	16	11	15	14	20	44	53	26	14	16	14	18
25	14	16	12	24	20	70	47	39	12	16	16	18
26	9.5	16	14	30	17	51	384	19	66	12	268	13
27	24	13	15	25	17	38	78	18	22	11	59	13
28	14	14	14	21	17	184	48	18	14	14	41	16
29	11	13	17	21	-------	58	37	17	21	14	20	15
30	12	99	14	20	-------	41	35	23	19	12	64	14
31	16	-------	14	17	-------	36	-------	29	-------	12	22	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	41	9.5	14.0	0.366	0.42
November	99	9.9	16.9	.441	.49
December	25	11	14.5	.379	.44
January	81	9.9	20.2	.527	.61
February	140	12	29.0	.757	.79
March	184	14	35.4	.924	1.07
April	527	14	76.4	1.99	2.22
May	84	17	26.8	.700	.81
June	117	12	24.1	.629	.70
July	78	11	21.3	.556	.64
August	700	8.3	63.7	1.66	1.91
September	252	12	35.3	.922	1.03
The year	700	8.3	31.4	.820	11.13

JEROME FORK AT JEROMEVILLE, OHIO

LOCATION.—Chain gage in SW. ¼ sec. 5, T. 21 N., R. 15 W., at highway bridge at Jeromeville, 1 mile above mouth of Oldtown Run.

DRAINAGE AREA.—120 square miles.

RECORDS AVAILABLE.—August, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,110 second-feet Apr. 22 (gage height, 5.30 feet); minimum, 2.6 second-feet Aug. 4–7 (gage-height, 0.82 foot).

1925–1931: Maximum discharge, 3,130 second-feet Feb. 26, 1929 (gage height, 11.3 feet); minimum, 2.4 second-feet several times in August, 1930 (gage height, 0.78 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.1	9.5	39	8.0	26	24	89	63	73	12	3.1	17
2	4.1	8.0	20	7.0	24	23	209	50	45	7.7	3.1	246
3	4.4	7.0	11	7.0	20	21	448	45	32	6.7	3.1	222
4	4.1	6.0	12	8.0	20	23	352	40	26	5.8	2.6	82
5	3.4	6.0	14	24	18	21	222	36	28	6.7	2.6	298
6	3.4	6.0	19	159	15	20	81	34	35	13	2.6	139
7	4.1	5.4	25	50	36	18	62	35	197	8.6	2.6	76
8	22	5.4	20	38	68	20	53	45	222	6.7	3.1	34
9	23	5.4	14	23	55	25	45	37	79	5.8	4.5	24
10	9.5	5.4	12	20	42	33	45	36	49	5.8	147	21
11	5.7	6.0	14	20	34	33	49	37	32	5.8	60	18
12	5.4	8.5	14	18	27	30	38	44	23	4.8	10	15
13	5.4	9.0	12	17	74	34	32	73	19	4.2	39	13
14	5.4	8.0	11	14	209	47	28	57	16	3.7	68	12
15	5.4	8.0	10	11	73	44	26	40	16	3.7	18	15
16	4.7	7.0	10	10	47	47	24	29	14	4.0	10	13
17	4.7	6.5	9.0	10	77	44	21	259	12	4.2	7.2	12
18	4.7	8.5	9.0	10	126	41	21	66	9.6	222	5.8	11
19	4.7	10	9.0	77	88	43	21	46	9.6	94	4.8	9.6
20	4.1	8.0	9.0	38	73	47	20	41	8.6	22	4.8	9.6
21	4.1	8.0	9.0	33	66	71	27	36	7.7	25	4.2	8.6
22	4.1	6.0	9.0	24	59	[a] 58	650	34	9.1	19	4.2	8.6
23	4.1	6.0	9.0	19	55	44	504	49	12	9.6	3.7	7.7
24	4.7	7.5	9.0	15	[a] 48	45	272	55	9.6	6.7	3.1	7.7
25	5.4	9.0	9.0	108	42	86	129	48	8.6	5.3	4.0	9.6
26	4.7	9.0	12	222	33	93	[a] 272	39	9.6	4.2	352	94
27	5.4	8.0	12	62	29	68	420	30	68	3.7	197	40
28	8.0	7.0	10	53	25	185	185	23	46	3.7	62	25
29	7.0	6.0	10	44	-------	173	116	20	37	3.1	35	17
30	7.0	[a] 22	9.0	42	-------	79	81	21	20	3.1	28	13
31	17	-------	9.0	37	-------	63	-------	[a] 44	-------	3.1	22	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	23	3.4	6.57	0.055	0.06
November	[a] 22	5.4	7.74	.064	.07
December	39	9.0	12.9	.108	.12
January	222	7.0	39.6	.330	.38
February	209	15	53.9	.449	.47
March	185	18	51.7	.431	.50
April	650	20	151	1.26	1.41
May	259	20	48.8	.407	.47
June	222	7.7	39.1	.326	.36
July	222	3.1	17.2	.143	.16
August	352	2.6	36.0	.300	.35
September	298	7.7	50.6	.422	.47
The year	650	2.6	42.7	.356	4.82

[a] Estimated.

KOKOSING RIVER NEAR MILLWOOD, OHIO

LOCATION.—Chain gage on east line of sec. 3, T. 6 N., R. 10 W., at highway bridge 3 miles southeast of Millwood prior to July 9, and water-stage recorder thereafter at highway bridge a quarter of a mile above chain gage.

DRAINAGE AREA.—472 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,540 second-feet Apr. 26 (gage height 4.90 feet); minimum, 42 second-feet Oct. 6, 20.

1921–1931: Maximum discharge, 16,500 second-feet Mar. 20, 1927 (gage height, 12.0 feet); minimum, 36 second-feet Sept. 4, 1925.

The flood of March, 1913, reached a stage of 19.0 feet (discharge, estimated, 28,000 second-feet).

REMARKS.—Records good except those for Dec. 2–3, 25, Jan. 1, 21–22, which were estimated because of ice, and those estimated Aug. 28 to Sept. 7 because recorder was not operating.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	56	105	58	85	110	216	259	107	129	149	220
2	52	59	80	59	81	105	338	252	92	138	100	430
3	45	63	75	59	67	105	625	202	92	129	80	900
4	56	63	72	63	72	100	1,550	189	83	118	71	590
5	45	59	72	67	67	95	820	170	92	102	73	1,000
6	42	56	76	163	63	90	565	170	92	110	73	720
7	59	52	81	144	72	85	360	189	177	259	63	480
8	49	52	76	138	110	110	275	237	229	164	58	377
9	63	52	72	110	138	121	237	244	189	129	54	278
10	67	56	67	100	121	116	202	202	129	61	70	227
11	63	56	67	85	100	110	202	189	189	57	205	192
12	59	63	63	72	100	95	182	170	180	53	155	170
13	56	59	63	67	157	95	150	202	158	54	348	152
14	52	56	63	67	960	100	138	215	141	51	560	130
15	49	56	63	67	338	100	132	209	149	50	262	103
16	45	56	56	63	275	150	121	170	183	50	152	110
17	49	59	59	63	110	138	113	158	144	50	115	110
18	45	56	59	59	209	138	116	152	129	194	96	229
19	56	56	59	76	230	138	105	146	124	316	88	155
20	42	52	56	110	223	132	100	129	121	189	393	110
21	45	52	56	90	216	132	110	141	113	544	385	98
22	56	52	56	87	182	144	685	129	118	706	199	92
23	49	52	56	85	169	132	1,750	146	118	312	138	92
24	56	52	56	85	169	121	750	135	113	173	110	108
25	49	52	56	85	157	144	510	141	107	122	92	98
26	52	52	56	95	138	315	1,550	141	110	98	124	127
27	56	45	59	95	121	237	1,360	129	124	86	1,720	161
28	59	45	56	95	116	216	775	107	129	78	1,000	144
29	59	45	56	95	-------	538	541	97	129	71	400	122
30	56	67	56	95	-------	315	363	92	146	70	280	108
31	56	-------	56	95	-------	256	-------	97	-------	71	240	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	67	42	52.9	0.112	0.13
November	67	45	55.0	.117	.13
December	105	56	64.6	.137	.16
January	163	58	86.8	.184	.21
February	960	63	173	.367	.38
March	538	90	154	.326	.38
April	1,750	100	498	1.06	1.18
May	259	92	168	.356	.41
June	229	83	134	.284	.32
July	706	50	153	.324	.37
August	1,720	54	253	.536	.62
September	1,000	92	261	.553	.62
The year	1,750	42	170	.360	4.91

WILLS CREEK AT BIRDS RUN, OHIO

LOCATION.—Water-stage recorder in SW. ¼ sec. 19, T. 4 N., R. 4 W., 200 feet below mouth of Birds Run at Birds Run, Guernsey County. Zero of gage is 740.98 feet above mean sea level.

DRAINAGE AREA.—730 square miles.

RECORDS AVAILABLE.—August, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,280 second-feet Apr. 6 (gage height, 20.43 feet); minimum, 5.0 second-feet Oct. 5–7.

1928–1931: Maximum discharge, 5,730 second-feet May 5, 1929 (gage height, 21.4 feet); minimum, 2.5 second-feet Aug. 12, 1930.

Maximum stage known, 27.0 feet, present gage datum, March, 1913 (discharge, estimated, 15,000 second-feet).

REMARKS.—Records good except those for estimated periods, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	15	27	15	33	91	365	400	63	26	e 420	693
2	5.6	14	24	14	34	e 82	837	318	66	28	e 280	1,020
3	6.2	15	24	12	30	e 74	2,380	285	71	30	e 130	1,040
4	6.2	15	22	12	27	e 68	4,090	254	66	41	e 110	1,520
5	5.0	16	20	22	25	e 74	4,880	224	87	50	74	1,520
6	5.0	16	24	58	23	70	5,280	196	140	44	78	1,700
7	5.0	15	34	51	26	65	5,240	184	228	42	52	1,750
8	6.2	14	36	49	36	76	4,780	203	832	37	37	1,780
9	6.9	13	33	44	e 50	105	3,420	238	1,430	31	30	1,410
10	6.2	14	28	41	e 34	173	1,100	246	695	27	44	586
11	6.2	16	28	35	e 38	236	665	203	310	26	134	214
12	6.9	20	28	33	e 62	200	730	190	190	26	165	136
13	6.9	21	27	31	94	168	581	210	138	24	171	102
14	6.2	20	24	26	244	165	428	539	112	24	165	83
15	6.9	18	22	20	512	236	345	602	100	22	196	72
16	10	18	18	17	607	356	285	602	110	21	123	64
17	12	18	16	17	432	328	238	400	115	e 21	71	64
18	13	19	13	16	276	260	210	269	85	e 21	49	109
19	10	20	11	17	337	222	190	224	68	e 22	40	831
20	8.3	19	12	19	452	293	177	210	58	e 23	72	770
21	7.6	18	12	21	e 390	374	165	238	52	e 25	439	278
22	6.2	20	12	20	e 310	e 280	554	190	47	e 48	428	143
23	6.2	20	12	20	e 270	e 210	1,930	151	42	e 220	212	110
24	6.2	18	13	e 18	e 200	e 190	2,570	131	36	e 250	105	414
25	6.2	17	12	e 15	e 170	e 190	1,640	131	31	e 110	63	714
26	7.6	18	12	e 13	e 140	e 270	994	126	28	e 54	52	405
27	9.0	18	14	e 13	117	e 520	906	121	29	e 34	98	959
28	13	19	16	e 16	97	e 460	972	115	31	e 28	586	846
29	15	19	17	e 20	-------	e 450	774	95	29	e 25	581	408
30	16	20	18	e 26	-------	e 490	560	80	28	e 28	345	228
31	15	-------	16	31	-------	412	-------	70	-------	e 120	217	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	16	5.0	8.14	0.011	0.01
November	21	13	17.4	.024	.03
December	36	11	20.2	.028	.03
January	58	12	24.6	.034	.04
February	607	23	181	.248	.26
March	520	65	232	.318	.37
April	5,280	165	1,580	2.16	2.41
May	602	70	240	.329	.38
June	1,430	28	177	.242	.27
July	250	21	49.3	.068	.08
August	586	30	180	.247	.28
September	1,780	64	666	.912	1.02
The year	5,280	5.0	278	.381	5.18

e Estimated.

LICKING RIVER AT TOBOSO, OHIO

LOCATION.—Water-stage recorder at covered highway bridge at Toboso, Licking County, 3 miles below mouth of Rock Fork. Zero of gage is 744.84 feet above mean sea level.

DRAINAGE AREA.—672 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,460 second-feet Apr. 4 (gage height, 7.76 feet); minimum, 34 second-feet Jan. 1 (gage height, 1.53 feet).

1921–1931: Maximum discharge, 17,000 second-feet Feb. 26, 1929 (gage height, 17.9 feet); minimum, that of Jan. 1, 1931.

The flood of March, 1913, reached a stage of 20.0 feet (discharge, estimated, 20,000 second-feet).

REMARKS.—Records excellent. Flow slightly regulated at Buckeye Lake on South Fork of Licking River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	63	88	54	67	85	180	339	168	78	85	145
2	50	67	70	54	59	83	328	293	149	76	132	361
3	52	67	70	54	61	78	808	274	138	161	70	1,240
4	50	67	65	54	59	78	3,600	238	138	225	86	686
5	50	65	65	76	59	78	1,430	217	251	123	84	485
6	50	63	78	130	59	72	818	238	229	92	120	416
7	50	63	74	108	67	70	566	238	261	81	89	306
8	54	61	70	81	70	81	430	288	396	67	89	234
9	55	61	67	70	78	81	348	306	304	65	144	188
10	55	61	63	67	81	83	302	279	213	65	310	156
11	52	63	65	59	78	83	288	251	168	73	276	142
12	50	72	65	63	78	81	256	247	149	62	437	127
13	50	74	63	61	106	78	225	801	127	62	2,000	116
14	48	67	63	54	412	78	208	818	123	60	840	99
15	50	67	63	59	294	93	192	530	152	58	401	103
16	50	67	59	54	194	106	176	372	149	56	247	123
17	48	67	59	54	154	103	168	339	127	118	180	127
18	52	67	59	48	147	93	164	325	116	208	145	576
19	50	67	57	65	184	98	156	270	103	142	120	297
20	50	65	55	67	194	103	152	234	92	106	173	180
21	54	65	55	61	184	106	164	225	89	149	525	134
22	54	65	57	72	165	103	1,080	204	116	208	339	120
23	54	61	59	63	140	95	1,920	204	134	213	221	120
24	57	61	57	57	127	98	872	196	123	149	164	295
25	55	63	59	59	114	117	577	248	103	120	130	260
26	57	65	59	63	98	154	979	316	89	89	130	296
27	63	65	63	63	93	169	1,490	238	89	81	208	445
28	70	61	61	63	85	173	764	192	86	67	437	334
29	65	61	61	63	-------	243	566	168	86	65	392	265
30	61	74	59	63	-------	234	416	156	84	62	234	221
31	65	-------	61	65	-------	180	-------	168	-------	67	192	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	70	48	53.9	May	818	156	297
November	74	61	65.2	June	396	84	152
December	88	55	63.5	July	225	56	105
January	130	48	65.3	August	2,000	70	290
February	412	59	125	September	1,240	99	286
March	243	70	109				
April	3,600	152	654	The year	3,600	48	188

LITTLE KANAWHA RIVER BASIN

LITTLE KANAWHA RIVER AT GLENVILLE, W. VA.

LOCATION.—Chain gage at highway bridge at Glenville, Gilmer County, three-tenths of a mile below Sycamore Creek. Zero of gage is 697.79 feet above mean sea level.

DRAINAGE AREA.—385 square miles.

RECORDS AVAILABLE.—June, 1915, to September, 1922 (gage heights only); December, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,180 second-feet Aug. 22 (gage height, 18.00 feet); no flow Oct. 1–4, 18–23.

1915–1922, 1929–1931: Maximum gage height recorded, 31.7 feet Mar. 13, 1918 (discharge not determined); no flow during part of September and October, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.02	0.1	58	57	495	2,810	243	155	39	139	330
2	0	.02	.1	50	51	1,140	2,650	200	132	32	615	210
3	0	.02	.1	46	44	775	1,300	317	97	53	147	181
4	0	.07	.1	39	42	495	1,640	254	81	44	147	155
5	.02	.10	.1	67	38	345	1,260	210	210	42	615	139
6	.02	.04	.1	1,470	35	266	935	164	775	46	345	110
7	.02	.04	21	1,060	34	232	2,230	181	425	43	164	86
8	.04	.02	18	425	35	1,890	1,390	1,140	495	72	86	62
9	.07	.01	16	266	181	1,340	855	735	735	72	62	54
10	.07	.01	42	210	1,600	855	615	535	425	291	52	40
11	.07	.02	46	147	615	615	1,180	408	291	2,390	44	35
12	.07	.04	36	124	375	535	855	442	190	535	34	33
13	.07	.10	30	124	460	615	655	460	132	254	30	30
14	.07	.10	25	172	1,430	1,470	460	1,060	97	139	67	25
15	.04	.07	22	139	1,060	1,720	360	1,100	86	92	46	26
16	.04	.04	21	124	575	1,390	291	735	104	72	35	32
17	.04	.07	18	97	535	895	232	1,550	81	1,340	26	31
18	0	.10	16	92	1,470	655	200	855	62	390	20	28
19	0	.07	14	86	1,390	575	172	495	50	243	20	26
20	0	.07	13	81	1,020	615	139	375	42	147	72	27
21	0	.07	12	190	655	575	117	2,810	35	124	3,070	40
22	0	.07	11	181	460	535	210	975	32	190	5,830	42
23	0	.04	11	97	345	575	535	1,930	46	139	1,890	41
24	.02	.04	10	110	291	535	408	1,430	76	390	1,020	37
25	.02	.04	7.9	92	232	975	360	935	164	266	495	32
26	.02	.10	12	76	190	975	390	735	92	155	330	1,020
27	.02	.04	37	72	164	815	775	425	81	97	775	442
28	.10	.10	442	67	132	735	575	317	72	72	655	243
29	.07	.10	210	76	-------	695	408	221	72	54	1,640	164
30	.02	.10	139	76	-------	535	317	164	53	44	1,430	132
31	.02	-------	97	62	-------	460	-------	147	-------	35	575	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.10	0	0.030	0.000078	0.00009
November	.10	.01	.058	.00015	.0002
December	442	0.1	42.8	.111	.13
January	1,470	39	193	.501	.58
February	1,600	34	483	1.25	1.30
March	1,890	232	785	2.04	2.35
April	2,810	117	811	2.11	2.35
May	2,810	147	695	1.81	2.09
June	775	32	180	.468	.52
July	2,390	32	255	.662	.76
August	5,830	20	661	1.72	1.98
September	1,020	25	128	.332	.37
The year	5,830	0	352	.914	12.43

LITTLE KANAWHA RIVER AT GRANTSVILLE, W. VA.

LOCATION.—Chain gage at highway bridge at Grantsville, Calhoun County.
DRAINAGE AREA.—913 square miles.
RECORDS AVAILABLE.—December, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 11,600 second-feet Aug. 22 (gage height, 22.84 feet); no flow Oct. 1 to Nov. 16.
1928–1931: Maximum discharge, 17,100 second-feet Feb. 26, 1929 (gage height, 28.41 feet); no flow Sept. 10 to Nov. 16, 1930.
REMARKS.—Records good except those for Nov. 17 to Dec. 9, which are poor. Discharge interpolated June 21, July 19, Sept. 6.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	9.9	215	90	362	6,820	522	230	69	1,640	835
2	0	9.9	150	84	2,770	9,730	440	230	52	1,400	480
3	0	9.4	98	79	1,880	4,260	568	192	62	890	568
4	0	8.8	79	75	1,220	4,340	635	145	61	545	310
5	0	8.8	58	75	785	4,030	440	148	212	1,580	260
6	0	11	1,460	70	590	2,490	345	685	125	1,110	210
7	0	11	2,420	64	460	2,910	292	735	90	500	160
8	0	9.9	2,980	58	2,350	4,180	1,400	590	75	275	128
9	0	7.8	735	53	4,180	2,560	2,000	890	245	172	100
10	0	.9	400	3,120	2,770	1,520	1,400	735	215	130	83
11	0	8.3	345	1,940	1,820	1,880	1,060	460	2,070	109	67
12	0	23	292	835	1,340	1,760	890	292	1,400	84	59
13	0	23	215	685	1,460	1,640	1,400	210	522	73	52
14	0	27	230	1,880	3,260	1,160	2,980	160	292	84	45
15	0	23	275	2,350	3,540	1,110	2,560	130	210	86	41
16	0	22	260	1,340	3,120	590	1,580	120	135	70	40
17	52	21	182	1,000	2,070	480	1,640	115	635	62	40
18	48	21	113	2,560	1,400	400	1,940	98	735	51	45
19	33	20	111	2,770	1,110	362	1,220	77	514	39	46
20	28	18	120	2,140	1,000	310	945	64	292	48	49
21	23	18	120	1,340	945	230	3,540	55	260	4,100	109
22	21	17	160	1,000	945	198	2,280	46	260	11,500	96
23	19	.15	182	685	945	260	1,760	61	292	4,740	86
24	16	14	142	522	945	785	2,210	58	230	2,140	135
25	15	13	135	460	2,140	785	1,760	118	420	1,160	102
26	13	14	135	362	2,560	685	2,000	175	310	735	2,140
27	12	18	130	310	2,210	785	1,280	118	198	1,280	2,420
28	11	115	98	245	1,880	1,160	685	104	128	2,980	835
29	10	345	92	------	1,640	945	460	90	90	2,630	440
30	9.9	380	88	------	1,520	685	345	77	75	2,490	310
31	------	345	88	------	1,160	------	260	------	*53	1,580	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	52	0	10.4	0.011	0.01
December	380	.9	51.2	.056	.06
January	2,980	58	391	.428	.49
February	3,120	53	935	1.02	1.06
March	4,180	362	1,750	1.92	2.21
April	9,730	198	1,970	2.16	2.41
May	2,980	260	1,320	1.45	1.67
June	890	46	240	.263	.29
July	2,070	52	333	.365	.42
August	11,500	39	1,430	1.57	1.81
September	2,420	40	343	.376	.42
The year	11,500	0	730	.800	10.85

NOTE.—No flow during October.

WEST FORK OF LITTLE KANAWHA RIVER AT ROCKSDALE, W. VA.

LOCATION.—Chain gage at highway bridge at Rocksdale, Calhoun County. Henry Fork enters from left 25 feet above bridge.
RECORDS AVAILABLE.—December, 1928, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 5,240 second-feet Apr. 1 (gage height, 19.30 feet); no flow Oct. 1 to Nov. 16.
1928–1931: Maximum discharge, 5,840 second-feet Nov. 18, 1929 (gage height, 20.57 feet); no flow July 26, 30, 31, Aug. 1–6, Sept. 13 to Nov. 16, 1930.
REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1928–1931

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1				87	60	411	176	81	58	273	19	11
2				273	51	465	120	214	39	315	12	8.7
3				138	35	438	83	1,660	25	112	18	7.2
4				84	32	610	84	885	22	44	315	6.0
5				60	29	3,220	176	780	21	26	103	5.2
6				195	243	2,840	157	1,540	18	22	38	4.8
7				166	1,860	2,750	120	2,880	16	25	25	5.5
8				96	465	885	88	640	16	35	18	990
9				48	520	338	80	361	14	35	14	243
10				1,140	386	214	157	224	14	37	10	112
11				610	195	157	253	157	13	32	13	103
12				315	176	138	204	112	13	23	315	44
13				195	129	120	129	96	15	47	74	25
14				120	112	166	103	88	14	37	33	34
15			1,060	120	80	263	103	69	14	23	14	52
16			361	120	69	214	338	54	14	17	14	32
17			243	103	58	224	1,380	42	12	14	12	195
18			465	411	46	186	465	37	11	11	9.6	176
19			273	1,020	44	166	253	2,310	10	9.6	8.1	77
20			186	438	58	138	186	1,500	9.0	8.4	6.9	42
21			80	263	65	112	157	1,300	7.8	7.2	6.0	31
22			47	233	70	96	465	492	11	6.0	5.2	20
23			58	411	58	780	294	294	96	6.0	7.5	16
24			52	338	120	850	214	195	28	4.8	68	14
25			44	550	520	243	166	138	19	3.8	29	12
26			34	465	4,700	273	195	83	32	4.8	18	11
27			33	273	1,500	273	129	61	20	6.9	25	10
28			38	224	640	224	157	62	56	166	88	9.0
29			42	129	-------	157	204	96	72	253	44	8.1
30			48	87	-------	214	112	157	28	96	22	7.8
31			43	74	-------	186	-------	157	-------	26	14	-------
1929–30												
1	7.5	294	96	294	214	253	120	32	4.5	2.6	0	0.7
2	955	214	80	243	224	361	465	29	4.5	1.8	0	.6
3	2,490	2,660	88	386	294	386	411	25	4.0	1.4	0	.5
4	520	1,980	81	315	990	361	361	22	3.5	1.2	0	.4
5	338	411	66	243	2,750	315	273	20	3.2	.9	0	.3
6	176	214	129	204	675	338	233	22	2.8	.8	0	.2
7	88	148	253	176	411	1,300	243	30	2.5	.7	3.5	.2
8	54	120	411	148	294	2,450	233	34	2.3	.7	1.4	.2
9	31	103	253	166	233	1,220	176	27	2.1	.6	1.0	.2
10	23	81	214	148	411	580	157	20	2.6	.5	1.0	.2
11	20	62	166	138	294	850	129	15	2.8	.4	.8	.1
12	20	51	465	138	253	780	112	13	2.5	.3	.7	.1
13	24	58	361	166	411	411	96	11	2.3	.5	.5	0
14	25	338	315	166	520	338	86	11	2.1	.5	1.3	0
15	23	550	263	148	411	263	81	23	1.8	.4	1.3	0
16	21	438	214	120	315	438	76	75	1.8	.4	1.3	0
17	22	1,340	176	103	273	386	69	166	9.0	.3	1.1	0
18	23	4,830	294	82	315	386	64	74	10	.3	1.1	0
19	20	780	411	58	263	1,540	96	36	24	.2	.9	0
20	18	361	338	57	233	520	81	37	13	.2	.8	0
21	18	214	186	55	195	361	69	34	9.0	.1	1.1	0
22	1,180	166	138	129	166	253	76	30	6.0	.1	1.4	0
23	1,140	138	157	88	186	204	69	22	4.2	.2	1.4	0
24	233	120	138	63	315	166	56	18	4.0	.2	1.1	0
25	157	103	103	52	610	176	46	16	4.5	.1	1.6	0
26	96	88	120	52	520	263	43	15	6.9	0	2.0	0
27	74	103	550	57	411	224	38	14	6.6	.1	1.6	0
28	59	166	2,660	1,100	294	224	35	11	5.0	.2	1.3	0
29	55	176	1,060	815	-------	204	37	8.4	3.8	.1	.9	0
30	224	138	610	438	-------	186	34	7.2	3.2	0	.8	0
31	438	-------	411	273	-------	148	-------	5.8	-------	0	.7	-------

Daily and monthly discharge, in second-feet, of West Fork of Little Kanawha River at Rocksdale W. Va., 1928–1931—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	0	0	1.0	9.6	6.3	224	3,980	74	9.3	0.8	204	59
2	0	0	1.2	7.5	5.5	386	1,660	69	8.7	.9	57	43
3	0	0	1.2	6.3	5.5	243	710	84	8.1	15	195	38
4	0	0	.8	5.8	5.0	166	610	76	7.5	7.8	195	32
5	0	0	.8	34	4.8	103	411	61	12	3.5	129	25
6	0	0	3.0	411	4.5	64	580	50	16	2.5	96	20
7	0	0	5.2	263	4.5	76	520	50	19	1.6	44	16
8	0	0	4.5	204	6.0	955	411	138	20	1.4	26	12
9	0	0	3.5	157	224	780	315	129	31	1.4	17	9.9
10	0	0	2.6	96	520	411	253	224	21	675	675	8.1
11	0	0	2.3	57	263	315	386	120	14	315	214	6.9
12	0	0	2.8	40	103	186	315	148	10	62	64	6.3
13	0	0	2.5	29	64	465	233	580	7.8	32	38	5.2
14	0	0	2.0	23	610	1,060	195	1,260	6.0	28	25	4.5
15	0	0	1.7	18	263	1,420	157	465	5.2	120	18	4.0
16	0	0	1.5	14	138	610	120	263	4.2	55	14	4.2
17	0	.5	1.5	12	214	386	76	186	3.5	38	12	3.8
18	0	8.4	1.6	11	610	273	55	157	3.0	26	9.0	3.3
19	0	2.1	1.4	11	386	224	47	88	2.5	18	7.5	3.0
20	0	1.5	1.5	12	294	186	41	61	2.1	14	49	16
21	0	1.4	1.3	11	186	129	37	68	1.8	28	361	26
22	0	.7	1.0	10	112	112	70	68	1.4	54	1,340	20
23	0	.3	.8	9.6	88	138	253	52	22	51	361	40
24	0	.2	.7	7.5	66	157	148	44	8.4	990	233	18
25	0	.2	.6	6.3	49	465	129	38	3.5	263	166	11
26	0	.5	5.2	5.5	39	550	224	35	2.5	81	166	1,220
27	0	.6	31	6.6	29	438	294	26	1.8	46	273	195
28	0	.5	23	7.2	25	675	204	20	1.4	33	315	82
29	0	.4	18	6.6	-------	550	148	17	1.1	22	361	57
30	0	.8	13	6.0	-------	361	103	12	.9	16	214	36
31	0	-------	11	6.0	-------	253	-------	10	-------	13	112	-------

Month	Maximum	Minimum	Mean
1928–29			
December 15–31	1,060	33	183
January	1,140	48	283
February	4,700	29	440
March	3,220	96	560
April	1,380	80	225
May	2,880	37	541
June	96	7.8	24.6
July	315	3.8	55.7
August	315	5.2	45.1
September	990	4.8	77.1
1929–30			
October	2,490	7.5	277
November	4,830	51	548
December	2,660	66	349
January	1,100	52	214
February	2,750	166	446
March	2,450	148	512
April	465	34	136
May	166	5.8	29.1
June	24	1.8	5.15
July	2.6	0	.51
August	3.5	0	.99
September	.7	0	.12
The year	4,830	0	208
1930–31			
November	8.4	0	.60
December	31	.6	4.78
January	41	5.5	48.5
February	61	4.5	154
March	1,420	64	399
April	3,980	37	423
May	1,260	10	151
June	31	.9	8.52
July	990	.8	97.3
August	1,340	7.5	193
September	1,220	3.0	67.5
The year	3,980	0	129

NOTE.—No flow during October, 1930.

HUGHES RIVER AT CISKO, W. VA.

LOCATION.—Staff gage at Cisko, Petroleum County, 1 mile below junction of North and South Forks.

DRAINAGE AREA.—453 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1922; February, 1929, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 10,500 second-feet Apr. 1 (gage height, 17.6 feet); no flow Oct. 1 to Dec. 5.

1915–1922, 1929–1931: Maximum gage height, 30.25 feet Jan. 22, 1917 (discharge not determined); no flow July 26, Aug. 2–6, Sept. 4 to Dec. 5, 1930.

REMARKS.—Records good. Discharge estimated because of ice Dec. 15–24.

Daily and monthly discharge, in second-feet, 1930–31

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	5.9	10	620	5,280	176	120	34	60	163
2	0	5.9	10	1,140	6,800	120	101	29	37	122
3	0	6.2	12	550	1,830	120	79	25	31	108
4	0	5.9	11	260	8,800	189	66	20	64	101
5	0	6.2	12	125	1,650	163	1,950	16	120	115
6	.7	12	11	189	860	125	740	14	64	110
7	.5	22	10	120	660	125	324	13	41	105
8	.5	66	14	940	700	176	445	12	36	91
9	.4	59	25	1,450	480	515	410	10	31	60
10	.2	46	260	860	358	585	230	26	64	49
11	.2	34	410	550	375	550	163	42	42	43
12	.1	31	307	445	660	324	115	40	36	40
13	.1	28	122	550	428	515	83	34	25	39
14	.2	27	620	1,140	307	1,770	69	23	15	34
15	.2	24	620	1,020	230	980	71	23	12	29
16	.2	22	245	585	176	480	69	23	11	22
17	.2	20	215	375	151	428	64	20	10	20
18	.1	19	550	245	132	340	49	17	9.2	20
19	.1	19	820	189	115	230	43	15	21	19
20	.1	17	515	176	98	176	38	14	480	20
21	.1	16	340	163	85	245	50	34	7,800	19
22	.1	15	215	139	98	215	39	31	2,490	17
23	.1	14	163	139	189	358	71	31	700	20
24	.1	13	139	151	189	340	39	56	358	20
25	.1	12	117	202	176	375	38	52	230	19
26	.3	12	87	550	1,180	1,180	38	40	176	3,040
27	1.7	12	66	660	1,220	700	39	41	445	780
28	4.8	12	58	480	515	375	31	37	860	410
29	8.3	11	------	480	340	245	28	28	515	245
30	8.3	11	------	445	230	176	33	22	375	189
31	7.4	10	------	324	------	151	------	14	307	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
December	8.3	0	1.13	0.0025	0.003
January	66	5.9	19.8	.044	.05
February	820	10	214	.472	.49
March	1,450	120	492	1.09	1.26
April	8,800	85	1,140	2.52	2.81
May	1,770	120	402	.887	1.02
June	1,950	28	188	.415	.46
July	56	10	27.0	.060	.07
August	7,800	9.2	499	1.10	1.27
September	3,040	17	202	.446	.50
The period	8,800	0	265	.585	7.93

NOTE.—No flow during October and November.

HOCKING RIVER BASIN

HOCKING RIVER NEAR LANCASTER, OHIO

LOCATION.—Chain gage in SW. ¼ sec. 28, T. 14 N., R. 18 W., at highway bridge 5 miles southeast of Lancaster.

DRAINAGE AREA.—92.8 square miles.

RECORDS AVAILABLE.—September, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,030 second-feet Aug. 13 (gage height, 6.40 feet); minimum, 9 second-feet Oct. 2–3, Dec. 31 (gage height, 1.32 feet).

1923–1931: Maximum discharge, 2,270 second-feet Mar. 29, 1924; minimum discharge, 5 second-feet Aug. 11, 1925.

REMARKS.—Records good. Discharge estimated Nov. 25–28.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	21	30	10	19	23	87	43	30	20	21	35
2	10	16	24	19	18	21	109	42	27	119	26	246
3	10	15	17	16	18	23	193	32	25	99	28	201
4	11	17	16	14	19	23	370	28	30	57	35	100
5	12	15	15	33	17	22	157	33	43	29	36	56
6	12	14	18	53	17	21	148	37	34	29	20	41
7	12	13	21	33	25	23	140	43	165	27	17	34
8	13	14	19	18	22	26	64	54	50	25	16	28
9	12	14	19	18	41	28	38	55	31	17	29	26
10	13	14	18	14	36	32	31	55	29	30	28	24
11	13	18	19	16	24	33	35	51	28	24	21	23
12	12	18	20	25	22	30	34	89	28	16	89	22
13	12	18	21	55	102	35	32	362	26	16	764	20
14	13	19	18	21	59	33	30	156	30	15	119	20
15	15	18	18	21	41	31	28	67	30	15	35	20
16	15	19	16	18	36	29	27	66	29	45	37	20
17	18	28	16	16	46	28	25	97	26	23	34	18
18	18	20	16	16	46	28	23	64	29	91	32	148
19	15	17	14	27	37	31	23	48	32	27	71	55
20	14	16	14	25	40	27	25	45	27	139	77	18
21	15	16	14	25	26	25	40	39	27	446	39	22
22	16	16	14	24	27	24	390	37	33	91	35	30
23	18	16	14	21	25	21	265	36	30	50	29	60
24	18	14	14	21	25	26	78	34	27	42	27	31
25	17	12	15	19	25	33	67	36	27	30	25	27
26	15	12	22	20	25	30	165	34	26	24	97	228
27	19	12	22	24	25	26	78	29	23	18	174	64
28	23	12	18	22	24	26	64	23	23	15	77	52
29	20	16	17	21	------	25	50	25	26	15	42	45
30	19	37	11	21	------	23	46	27	19	16	39	37
31	19	------	9	23	------	21	------	34	------	15	36	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	23	10	14.8	0.159	0.18
November	37	12	16.9	.182	.20
December	30	9	17.4	.188	.22
January	55	10	22.9	.247	.28
February	102	17	31.7	.342	.36
March	35	21	26.7	.288	.33
April	390	23	95.4	1.03	1.15
May	362	23	58.7	.633	.73
June	165	19	33.7	.363	.40
July	446	15	52.4	.565	.65
August	764	16	69.5	.749	.86
September	246	18	58.4	.629	.70
The year	764	9	41.5	.447	6.06

HOCKING RIVER AT ENTERPRISE, OHIO

LOCATION.—Chain gage in NW. ¼ sec. 5, T. 14 N., R. 17 W., at highway bridge at Enterprise, Hocking County. Buck Run enters on right, 4 miles above gage. Zero of gage is 723.60 feet above mean sea level.
DRAINAGE AREA.—460 square miles.
RECORDS AVAILABLE.—May to September, 1931.
EXTREMES.—Maximum discharge during period, 5,040 second-feet Aug. 13 (gage height, 11.68 feet); minimum, 40 second-feet July 15 (gage height, 0.80 foot).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	259	98	47	126	176	16	247	113	44	396	82
2	247	82	124	113	448	17	308	88	448	296	82
3	223	77	1,280	64	1,080	18	284	79	1,080	223	1,280
4	188	69	371	296	448	19	235	68	396	448	284
5	176	1,400	165	100	500	20	188	53	474	554	188
6	223	396	92	73	371	21	165	51	2,510	554	117
7	211	581	73	64	235	22	139	86	3,570	371	98
8	296	1,400	54	59	188	23	141	107	1,840	223	90
9	247	422	53	61	154	24	126	69	448	211	259
10	271	247	88	1,050	126	25	296	53	284	176	113
11	223	188	94	321	107	26	346	47	199	815	1,560
12	211	154	64	665	109	27	176	47	154	1,200	448
13	527	124	50	4,230	96	28	124	53	119	527	247
14	527	115	47	3,200	86	29	100	53	111	448	176
15	321	296	43	695	84	30	103	54	84	259	126
						31	113	-------	75	211	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
May	527	100	234	0.509	0.59
June	1,400	47	222	.483	.54
July	3,570	43	467	1.02	1.18
August	4,230	59	582	1.27	1.46
September	1,560	82	312	.678	.76

HOCKING RIVER AT ATHENS, OHIO

LOCATION.—Chain gage prior to Aug. 16, 1931, and water-stage recorder thereafter at Mill Street Bridge, three-quarters of a mile east of business section of Athens, Athens County. Zero of gage is 615.59 feet above mean sea level.

DRAINAGE AREA.—944 square miles.

RECORDS AVAILABLE.—May, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,200 second-feet Apr. 5 (gage height, 17.20 feet); minimum, 9 second-feet Oct. 11 (gage height, 2.18 feet).

1915–1931: Maximum discharge, 20,500 second-feet Apr. 16, 1922 (gage height, 21.8 feet); minimum, that of Oct. 11, 1930.

Maximum known stage, 26.7 feet January, 1907.

REMARKS.—Records good. Discharge estimated because of ice effect Nov. 28–29.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	55	49	63	81	150	1,210	638	251	96	207	372
2	26	47	52	55	76	189	3,160	554	215	88	226	853
3	22	49	70	57	74	174	4,400	511	189	377	211	2,490
4	27	50	57	55	70	144	10,000	424	164	1,120	259	1,260
5	31	39	61	61	63	140	9,740	382	1,060	481	362	748
6	31	49	86	91	64	127	2,420	372	1,260	223	204	832
7	32	44	76	150	61	121	1,450	414	702	157	153	567
8	34	41	93	134	61	189	1,060	865	3,860	107	134	408
9	110	41	74	98	84	330	865	702	1,480	98	147	333
10	39	41	72	72	107	305	768	787	787	101	800	285
11	10	50	70	68	121	258	865	638	541	96	1,120	247
12	15	53	72	81	134	244	748	573	398	96	452	219
13	22	55	64	84	157	280	592	1,520	333	79	2,160	196
14	27	53	64	81	690	330	529	1,410	333	72	4,440	178
15	44	50	64	72	530	330	470	930	470	64	2,230	160
16	18	44	70	64	280	271	414	735	435	70	832	150
17	29	57	63	61	244	258	362	592	255	215	592	150
18	27	55	57	64	356	244	314	683	211	930	447	396
19	29	64	57	70	383	235	300	511	189	930	471	962
20	29	107	50	63	330	216	268	435	167	330	1,030	348
21	34	66	57	61	280	216	414	372	137	1,610	1,190	238
22	32	53	50	64	244	189	3,720	333	153	5,800	865	192
23	41	47	57	64	200	160	8,000	285	300	5,090	618	167
24	39	41	53	64	164	178	3,920	281	178	1,450	458	160
25	44	44	57	61	153	262	1,480	272	140	735	362	270
26	44	50	63	64	134	356	1,380	1,120	130	541	373	1,580
27	44	45	68	79	127	383	1,640	768	124	398	2,750	1,440
28	50	42	79	84	130	412	1,120	481	110	314	1,350	579
29	47	39	76	88	-------	560	898	323	107	272	865	398
30	57	45	63	86	-------	500	800	295	112	226	618	304
31	53	-------	57	81	-------	383	-------	268	-------	196	447	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	110	10	36.1	0.038	0.04
November	107	39	50.5	.053	.06
December	93	49	64.5	.068	.08
January	150	55	75.5	.080	.09
February	690	61	193	.204	.21
March	560	121	262	.278	.32
April	10,000	268	2,110	2.24	2.50
May	1,520	268	596	.631	.73
June	3,860	107	493	.522	.58
July	5,800	64	721	.764	.88
August	4,440	134	851	.901	1.04
September	2,490	150	549	.582	.65
The year	10,000	10	499	.529	7.18

KANAWHA RIVER BASIN

SOUTH FORK OF NEW RIVER NEAR JEFFERSON, N. C.

LOCATION.—Chain gage at highway bridge a quarter of a mile below mouth of Bear Creek and 4 miles southeast of Jefferson, Ashe County.

DRAINAGE AREA.—207 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1926; July, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,230 second-feet Aug. 22 (gage height, 3.70 feet); minimum, 72 second-feet Nov. 27 (gage height, 0.83 foot). 1924–1926, 1928–1931: Maximum discharge (estimated), 6,660 second-feet Aug. 16, 1928 (gage height, 7.55 feet); minimum, 65 second-feet Sept. 9, 1925 (gage height, 0.80 foot).

REMARKS.—Records good below 2,500 second-feet and fair above. Small regulation caused by operation of old gristmills upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	122	249	283	225	294	935	320	498	169	380	230
2	119	116	254	299	225	304	850	336	369	176	498	364
3	122	116	187	289	225	235	770	309	315	204	254	380
4	125	154	200	268	212	221	892	273	294	196	221	529
5	119	239	191	1,160	217	217	1,020	263	278	204	409	304
6	116	179	1,300	1,400	204	212	770	259	315	309	364	254
7	113	176	1,110	810	204	217	660	468	289	225	409	230
8	125	144	560	592	212	369	592	810	304	179	263	212
9	138	138	409	498	221	336	560	529	273	235	249	200
10	147	135	352	409	239	259	498	438	249	498	200	191
11	138	135	315	364	254	263	409	380	235	254	179	208
12	128	147	278	352	239	309	409	409	221	179	200	187
13	125	235	254	358	212	244	364	380	230	172	380	179
14	132	249	235	342	263	235	342	352	468	179	254	176
15	151	235	225	196	273	225	320	320	498	217	200	169
16	187	364	151	278	196	254	304	299	438	172	225	169
17	144	468	128	380	239	221	283	330	273	161	179	169
18	125	374	204	369	289	200	278	347	225	263	161	169
19	116	309	304	342	259	200	304	498	208	225	183	165
20	111	230	347	438	230	191	299	409	200	208	294	221
21	113	208	325	273	230	191	299	1,700	187	283	1,160	176
22	113	196	304	225	221	244	935	935	309	263	1,920	165
23	116	179	309	263	221	221	1,250	810	268	239	810	147
24	119	172	259	299	212	304	592	592	263	204	498	158
25	132	165	289	244	212	369	529	468	358	196	380	154
26	119	161	320	254	204	352	468	498	239	330	325	161
27	111	100	409	263	196	336	468	468	217	273	592	191
28	111	212	438	263	200	560	380	380	183	204	336	172
29	132	200	342	254	------	1,200	352	380	176	225	289	154
30	158	204	304	249	------	1,060	330	380	176	309	294	147
31	147	------	347	239	------	1,020	------	438	------	336	263	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	187	111	129	0.623	0.72
November	468	100	202	.976	1.09
December	1,300	128	352	1.70	1.96
January	1,400	196	395	1.91	2.20
February	289	196	226	1.09	1.14
March	1,200	191	350	1.69	1.95
April	1,250	278	549	2.65	2.96
May	1,700	259	477	2.30	2.65
June	498	176	285	1.38	1.54
July	498	161	235	1.14	1.31
August	1,920	161	399	1.93	2.22
September	529	147	211	1.02	1.14
The year	1,920	100	318	1.54	20.88

NEW RIVER NEAR GALAX, VA.

LOCATION.—Water-stage recorder at highway bridge at Old Town and 3½ miles southwest of Galax, Carroll County.
DRAINAGE AREA.—1,130 square miles.
RECORDS AVAILABLE.—November, 1929, to September, 1931.
EXTREMES.—Maximum discharge during year, 12,000 second-feet Aug. 22 (gage height, 4.35 feet); minimum, 320 second-feet Dec. 17 (gage height, 0.62 foot).
1929–1931: Maximum discharge, that of Aug. 22, 1931; minimum, 247 second-feet July 9, 1930 (gage height, 0.56 foot).
REMARKS.—Records good. Discharge estimated Nov. 28–30, Dec. 20 to Jan. 3, Jan. 16, 17, May 10–17, June 2–6.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	542	800	800	818	755	5,230	1,450	2,040	636	1,270	905
2	390	504	958	700	770	852	5,220	1,380	1,900	680	1,750	852
3	380	469	835	650	770	870	4,060	1,340	1,700	996	1,990	1,940
4	380	492	710	1,150	740	785	4,370	1,300	1,550	1,680	1,130	3,260
5	380	710	650	2,800	740	725	7,230	1,210	1,400	2,550	3,200	1,920
6	380	818	1,660	6,850	710	695	5,050	1,150	1,300	1,720	1,920	1,340
7	390	725	4,380	4,060	710	695	4,220	2,220	1,420	1,560	1,490	1,090
8	390	623	2,390	2,470	695	835	3,810	4,380	1,280	1,150	1,340	975
9	380	582	1,510	1,850	710	958	3,600	2,880	1,170	1,190	1,300	888
10	412	542	1,230	1,510	818	888	3,140	2,360	1,050	1,790	1,170	835
11	469	528	1,070	1,300	852	800	2,740	2,210	922	1,570	888	800
12	469	528	940	1,110	770	755	2,440	2,010	888	1,050	800	770
13	423	610	888	1,150	740	785	2,060	1,740	852	818	1,090	755
14	434	818	770	1,090	800	785	1,880	1,600	870	1,010	1,170	725
15	504	835	710	905	1,070	800	1,690	1,470	1,360	1,330	940	710
16	528	922	680	1,100	888	905	1,560	1,360	1,920	994	800	665
17	528	1,170	525	1,300	888	800	1,490	1,250	1,340	800	725	650
18	556	1,280	582	1,740	1,030	755	1,400	1,230	994	923	650	650
19	469	1,130	725	1,150	1,030	710	1,490	1,360	852	1,050	596	680
20	434	888	1,100	1,110	975	710	1,360	1,650	770	1,390	686	665
21	412	770	850	1,030	922	680	1,250	3,860	725	1,310	3,120	650
22	400	725	800	922	835	755	2,230	3,780	770	1,520	10,000	650
23	380	710	720	870	785	835	4,710	3,690	1,290	1,510	6,240	623
24	400	650	750	818	770	1,030	3,320	2,740	940	1,760	3,170	596
25	446	636	800	870	755	1,420	2,440	2,160	870	1,380	2,060	582
26	528	623	1,000	818	740	1,600	2,140	2,310	994	1,380	1,580	596
27	480	515	1,100	800	710	1,450	2,110	2,360	818	1,420	1,470	770
28	446	450	1,350	852	665	2,570	1,900	1,940	695	1,130	1,560	852
29	469	500	1,650	922	------	5,220	1,720	1,720	650	1,150	1,210	695
30	542	600	1,200	888	------	3,870	1,560	1,510	610	835	1,090	650
31	596	------	900	870	------	2,680	------	1,950	------	937	994	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	596	380	445	0.394	0.45
November	1,280	----------	696	.616	.69
December	4,380	525	1,100	.973	1.12
January	6,850	----------	1,430	1.27	1.46
February	1,070	665	811	.718	.75
March	5,220	680	1,220	1.08	1.24
April	7,230	1,250	2,910	2.58	2.88
May	4,380	1,150	2,050	1.81	2.09
June	2,040	610	1,130	1.00	1.12
July	2,550	636	1,270	1.12	1.29
August	10,000	596	1,850	1.64	1.89
September	3,260	582	925	.819	.91
The year	10,000	380	1,320	1.17	15.89

NEW RIVER AT IVANHOE, VA.

LOCATION.—Water-stage recorder at Ivanhoe, Wythe County, 2½ miles above mouth of Cripple Creek.

DRAINAGE AREA.—1,330 square miles.

RECORDS AVAILABLE.—December, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,200 second-feet Aug. 22 (gage height, 8.25 feet); minimum, 116 second-feet Feb. 13 (gage height, 0.97 foot).

1929–1931: Maximum discharge, 13,700 second-feet Mar. 25, 1930 (gage height, 8.41 feet); minimum, 92 second-feet Feb. 13, 1930 (gage height, 0.89 foot).

REMARKS.—Records good except those for estimated periods, which are fair. Discharge estimated Nov. 27–29, Dec. 23 to Jan. 9, Aug. 23–29, Sept. 27–30. Flow regulated by power plants at Byllesby, 3 miles above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	651	509	880		629	640	5,360	1,800	2,420	593	1,400	1,010
2	336	472	1,000	740	946	957	5,840	1,560	2,040	821	1,840	1,020
3	299	398	965		967	1,340	5,230	958	1,950	767	2,340	1,580
4	704	676	657		852	1,020	3,990	1,730	1,540	1,420	1,560	3,050
5	334	821	710		950	993	6,820	1,470	1,560	2,470	2,440	2,060
6	286	776	1,550	4,400	1,090	823	5,970	1,320	1,060	2,040	2,190	1,400
7	524	937	3,800		901	607	4,890	1,410	1,500	1,670	1,590	1,500
8	494	570	3,430		900	986	6,160	3,820	1,850	1,350	1,510	1,170
9	412	503	1,820	1,850	781	1,270	3,630	4,090	1,280	1,130	1,120	800
10	382	638	1,290	1,600	958	1,190	3,860	1,990	1,160	1,620	1,680	890
11	580	611	734	1,350	964	1,240	2,740	2,280	988	1,850	896	784
12	406	832	979	1,650	974	1,000	2,380	1,690	854	1,640	1,160	994
13	321	742	989	1,270	960	638	2,720	2,060	1,120	746	1,210	488
14	384	672	698	1,330	807	958	2,290	1,550	842	1,250	1,490	732
15	424	692	648	990	980	1,050	1,900	1,660	1,230	1,540	1,240	1,030
16	580	870	808	622	1,280	1,270	1,420	1,730	2,030	1,290	747	628
17	553	1,380	694	884	1,320	924	1,660	1,250	1,930	664	1,080	657
18	744	1,330	443	1,180	1,180	1,000	1,920	1,340	1,270	1,010	910	662
19	381	1,410	386	1,760	897	1,050	1,120	1,850	1,060	1,010	728	452
20	510	1,210	1,050	1,210	1,570	926	1,820	1,610	846	1,400	863	572
21	618	724	538	1,250	902	772	1,510	4,130	495	1,790	2,720	700
22	511	687	624	1,320	792	691	2,330	3,150	890	1,600	9,270	944
23	570	924		622	1,300	1,480	4,190	3,900	1,350	1,550	7,100	662
24	568	708		1,170	720	1,260	4,020	3,110	1,060	1,680	3,400	435
25	639	340	690	588	1,060	1,220	3,170	2,690	1,390	1,430		470
26	485	336		982	772	2,360	2,450	2,060	972	1,520	2,000	830
27	364	400		1,040	1,060	2,000	2,340	2,220	1,510	1,690		
28	366	450		944	1,000	2,470	1,860	1,750	558	1,130	1,500	720
29	378	450	1,390	1,080	-------	5,010	1,940	2,230	442	1,300		
30	711	505		1,240	-------	4,540	1,670	2,240	810	1,040	952	
31	708	-------		1,300	-------	3,260	-------	1,010	-------	1,050	1,200	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	744	286	491	0.369	0.43
November	1,410	336	719	.541	.60
December	3,800	386	1,110	.835	.96
January	-------	588	1,540	1.16	1.34
February	1,570	629	983	.739	.77
March	5,010	607	1,450	1.09	1.26
April	6,820	1,120	3,240	2.44	2.72
May	4,130	958	2,120	1.59	1.83
June	2,420	442	1,270	.955	1.07
July	2,470	593	1,360	1.02	1.18
August	9,270	728	1,990	1.50	1.73
September	3,050	435	947	.712	.79
The year	9,270	286	1,440	1.08	14.68

NEW RIVER AT ALLISONIA, VA.

LOCATION.—Water-stage recorder half a mile above Allisonia, Pulaski County, and a quarter of a mile below Big Reed Island Creek.

DRAINAGE AREA.—2,190 square miles.

RECORDS AVAILABLE.—September, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,500 second-feet Aug. 23 (gage height, 4.78 feet); minimum, 504 second-feet Oct. 7 (gage height, 0.64 foot). 1929–1931: Maximum stage, 11.14 feet Oct. 2, 1929 (discharge not determined); minimum discharge, 412 second-feet Sept. 7, 1930 (gage height, 0.47 foot).

REMARKS.—Records good. Discharge estimated June 20, 21, July 21 to Aug. 4, Aug. 8–18, Sept. 13–23. Flow regulated by operation of power plants at Byllesby.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	856	843	952	1,160	1,330	1,320	7,240	2,240	4,260	1,120	1,720	1,460
2	652	771	1,230	1,180	1,040	1,200	8,860	2,330	3,770	1,040	2,000	1,520
3	564	721	1,340	991	1,190	1,640	7,720	1,920	2,870	1,150	2,510	1,980
4	580	698	1,000	1,160	1,060	1,410	7,090	2,020	2,660	1,880	2,350	3,570
5	909	1,370	1,000	3,580	1,070	1,200	10,500	1,870	2,190	2,690	2,060	2,850
6	534	1,140	1,880	9,070	1,040	1,180	8,660	1,910	1,630	3,040	3,460	2,100
7	650	1,050	5,330	6,720	1,110	960	7,540	1,920	1,900	2,240	2,120	1,690
8	765	1,010	4,460	4,080	1,190	1,190	7,220	6,220	2,620	1,920	1,770	1,540
9	682	820	2,440	3,160	1,100	1,520	5,680	5,440	1,880	1,670	1,460	1,340
10	608	828	1,920	1,930	1,160	1,580	5,660	3,240	1,820	1,790	1,640	1,160
11	717	987	1,400	1,820	1,220	1,530	4,140	3,300	1,440	2,090	1,440	1,140
12	748	1,060	1,080	2,080	1,130	1,400	3,460	2,210	1,290	1,980	1,520	1,060
13	600	982	1,310	1,680	1,330	1,090	3,710	2,920	1,370	1,900	1,480	1,200
14	615	1,010	1,350	1,480	1,250	985	3,060	2,240	1,500	1,360	1,790	916
15	738	923	950	1,680	1,140	1,520	3,020	2,520	1,360	1,600	1,370	1,070
16	804	1,030	1,100	906	1,530	1,620	2,220	2,260	2,500	1,660	1,190	1,140
17	740	1,860	1,100	1,020	1,810	1,360	2,230	1,900	2,500	1,290	1,300	1,010
18	815	1,580	994	1,330	1,620	1,200	2,190	1,660	1,740	1,250	1,080	952
19	825	1,690	803	2,240	1,440	1,380	1,940	2,300	1,340	1,360	900	952
20	642	1,520	1,010	1,540	1,540	1,270	2,650	2,070	1,300	1,560	899	820
21	744	1,250	1,340	1,510	1,470	1,020	2,000	7,250	952	2,120	1,880	830
22	782	979	858	1,460	1,220	1,140	2,960	5,210	1,280	2,090	10,900	964
23	756	986	1,060	1,050	1,620	1,520	6,490	6,040	1,570	2,350	10,200	1,030
24	852	1,450	954	1,020	1,210	2,060	5,610	5,020	1,680	2,350	5,850	812
25	754	710	1,340	1,360	1,160	1,970	4,300	3,910	1,740	2,140	4,020	698
26	843	642	842	1,120	1,040	2,980	3,560	3,880	1,580	2,400	2,880	870
27	714	631	1,390	1,330	1,240	2,630	3,040	3,720	1,430	2,350	2,340	1,070
28	631	716	1,890	1,140	1,160	3,480	2,740	3,140	1,750	1,950	2,250	1,060
29	674	701	2,400	1,080	-------	7,640	2,560	3,100	1,130	1,460	1,800	1,160
30	782	820	1,750	1,440	-------	6,560	2,260	3,100	1,070	1,520	1,680	942
31	930	-------	1,330	1,270	-------	4,800	-------	2,580	-------	1,410	1,380	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	930	534	726	0.332	0.38
November	1,860	631	1,030	.470	.52
December	5,330	803	1,540	.703	.81
January	9,070	906	2,020	.922	1.06
February	1,810	1,040	1,260	.575	.60
March	7,640	960	2,010	.918	1.06
April	10,500	1,940	4,680	2.14	2.39
May	7,250	1,660	3,210	1.47	1.70
June	4,260	----------	1,870	.854	.95
July	3,040	1,040	1,830	.836	.96
August	10,900	899	2,560	1.17	1.35
September	3,570	698	1,300	.594	.66
The year	10,900	534	2,010	.918	12.44

NEW RIVER AT EGGLESTON, VA.

LOCATION.—Water-stage recorder at highway bridge at Eggleston, Giles County.
DRAINAGE AREA.—2,940 square miles.
RECORDS AVAILABLE.—October, 1914, to September, 1931.
EXTREMES.—Maximum discharge during year, 17,600 second-feet Aug. 23 (gage height, 9.15 feet); minimum, 624 second-feet Nov. 29 (gage height, 2.28 feet).
1914–1931: Maximum discharge, about 152,000 second-feet July 16, 1916 (gage height, 39.5 feet); minimum, 580 second-feet July 21, 1926 (gage height, 2.2 feet).
The flood of 1878 reached a stage of about 40 feet.
REMARKS.—Records good. Discharge estimated Dec. 17–22, Dec. 24 to Jan. 5, Jan. 15–17. Flow regulated at all but high stages by operation of power plants at Byllesby, 73 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	935	1,230	1,040	1,900	1,610	1,600	6,890	2,750	4,060	1,290	2,050	1,840
2	1,040	1,140	1,290	1,800	1,660	1,630	12,100	2,890	5,770	1,290	2,700	1,780
3	970	990	1,490	1,600	1,200	1,650	9,890	2,720	4,060	1,370	4,560	2,890
4	781	975	1,600	1,600	1,500	2,000	8,900	2,090	3,530	1,980	3,940	3,410
5	764	1,140	1,230	1,800	1,390	1,770	12,300	2,610	2,910	3,120	3,040	4,300
6	1,080	1,970	1,390	10,900	1,380	1,530	11,900	2,300	2,750	4,540	4,170	2,920
7	783	1,510	4,620	10,000	1,370	1,480	10,100	2,480	2,610	3,460	3,250	2,210
8	753	1,380	5,590	6,070	1,440	1,280	9,500	5,460	3,040	2,620	2,460	2,200
9	955	1,280	4,390	4,300	1,540	1,720	8,060	6,970	2,980	2,130	2,220	1,790
10	913	1,090	2,650	3,340	1,470	2,130	7,090	5,730	2,320	1,930	1,780	1,580
11	877	1,030	2,170	2,430	1,480	1,890	6,150	3,500	2,210	2,460	2,290	1,440
12	896	1,180	1,630	2,180	1,540	1,880	4,820	3,810	1,890	1,870	1,630	1,460
13	957	1,420	1,460	2,680	1,490	1,690	4,060	3,480	1,720	2,420	2,200	1,450
14	863	1,330	1,730	2,050	1,650	1,410	4,170	3,520	1,890	1,880	2,260	1,300
15	824	1,380	1,550	1,800	1,640	1,450	3,680	2,960	2,210	2,000	2,240	1,120
16	934	1,360	1,210	1,900	1,460	1,870	3,260	2,990	2,090	2,500	1,910	1,410
17	1,030	1,680	1,300	1,700	2,070	2,050	2,710	2,820	3,090	2,280	1,590	1,260
18	1,040	2,510	1,100	1,470	2,380	1,690	2,820	2,350	2,810	1,420	1,660	1,240
19	1,020	2,010	1,300	1,910	2,180	1,620	3,040	2,440	2,110	1,790	1,420	1,120
20	1,070	2,190	1,200	2,780	1,900	1,770	2,200	2,830	1,720	3,060	1,290	1,160
21	795	1,780	1,200	2,010	2,220	1,520	3,080	6,670	1,610	2,460	1,920	1,000
22	909	1,570	1,650	1,870	1,770	1,420	2,830	8,190	1,330	2,950	10,100	1,110
23	1,030	1,250	1,290	1,820	1,610	1,510	6,130	6,830	1,550	2,710	15,800	1,310
24	982	1,230	1,150	1,360	2,000	2,260	7,030	7,030	2,320	2,710	9,140	1,450
25	1,100	1,670	1,300	1,310	1,520	2,750	5,750	5,070	1,910	3,100	5,480	1,030
26	1,050	980	1,500	1,750	1,470	2,980	4,960	5,240	2,180	2,560	4,100	1,020
27	1,060	880	1,500	1,390	1,350	3,940	3,870	5,170	1,640	2,970	3,320	1,360
28	947	834	1,800	1,770	1,560	3,840	3,700	4,520	1,920	2,800	2,820	1,410
29	908	870	2,300	1,530	-------	7,690	3,010	3,600	1,730	2,070	2,680	1,360
30	926	996	2,400	1,440	-------	9,290	3,060	3,710	1,020	1,820	2,280	1,420
31	1,020	-------	2,500	1,800	-------	6,520	-------	3,760	-------	2,170	1,920	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,100	753	942	0.320	0.37
November	2,510	834	1,360	.463	.52
December	5,590	1,040	1,890	.643	.74
January	10,900	1,310	2,650	.901	1.04
February	2,380	1,200	1,640	.558	.58
March	9,290	1,280	2,510	.854	.98
April	12,300	2,200	5,900	2.01	2.24
May	8,190	2,090	4,080	1.39	1.60
June	5,770	1,020	2,430	.827	.92
July	4,540	1,290	2,380	.810	.93
August	15,800	1,290	3,490	1.19	1.37
September	4,300	1,000	1,680	.571	.64
The year	15,800	753	2,580	.878	11.93

NEW RIVER AT GLENLYN, VA.

LOCATION.—Water-stage recorder at steam power plant of Appalachian Electric Power Co. a quarter of a mile southeast of Glenlyn, Giles County, and one-third of a mile above East River.

DRAINAGE AREA.—3,770 square miles.

RECORDS AVAILABLE.—August, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 19,600 second-feet Aug. 23 (gage height, 7.66 feet); minimum, 852 second-feet Oct. 9 (gage height, 2.24 feet).

1927–1931: Maximum stage, 16.75 feet Oct. 3, 1929 (discharge not determined); minimum discharge, 770 second-feet Sept. 8, 1930 (gage height, 2.10 feet).

REMARKS.—Records good. Discharge estimated July 23–25, Aug. 6–8. Flow regulated at all but high stages by operation of power plants at Byllesby, 98 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	930	1,380	1,200	2,150	1,960	2,000	8,680	3,720	5,080	1,220	2,820	2,140
2	1,190	1,370	1,340	2,090	2,020	2,110	14,800	3,490	7,220	1,680	3,400	2,270
3	1,160	1,180	1,710	1,830	1,390	1,990	13,200	3,500	5,750	1,520	6,220	2,860
4	990	1,160	1,740	1,880	1,640	2,200	12,800	3,060	4,440	1,740	6,030	3,060
5	900	1,220	1,680	2,240	1,710	2,350	17,900	2,620	4,080	3,080	5,920	4,680
6	1,020	1,980	1,550	9,180	1,620	2,040	16,100	2,760	3,500	4,430	5,260	3,720
7	1,120	1,920	3,620	12,500	1,670	1,910	13,700	2,950	3,230	4,230	5,320	2,820
8	900	1,600	6,680	7,960	1,800	1,830	13,100	7,170	3,410	2,930	3,360	2,400
9	960	1,640	5,350	5,340	1,750	1,760	12,700	9,780	3,680	2,620	2,440	2,280
10	1,120	1,280	3,260	4,070	1,860	2,480	10,300	7,760	2,960	2,280	2,300	2,030
11	1,040	1,180	2,740	2,750	1,840	2,490	9,010	5,100	2,740	2,360	2,150	1,680
12	1,020	1,300	2,300	2,880	2,010	2,230	7,180	5,040	2,400	2,940	2,250	1,790
13	1,080	1,440	1,800	2,670	1,960	2,240	6,060	4,360	2,140	2,640	2,190	1,610
14	1,100	1,660	1,990	2,520	2,040	2,050	5,890	5,160	2,260	2,720	2,420	1,680
15	1,000	1,640	1,860	2,090	2,420	1,920	5,040	4,540	2,480	1,880	2,420	1,300
16	1,020	1,670	1,420	2,200	2,160	2,520	4,740	4,310	1,950	2,660	2,200	1,370
17	1,200	1,780	1,550	1,820	2,540	2,660	3,910	3,860	3,240	2,740	1,900	1,660
18	1,240	2,390	1,320	1,660	3,330	2,710	3,740	3,580	3,310	2,580	1,480	1,320
19	1,110	2,490	1,580	1,980	3,420	2,240	3,450	3,100	2,630	2,030	1,770	1,380
20	1,240	2,420	1,470	2,610	3,250	2,240	3,570	3,600	2,100	2,900	1,550	1,290
21	1,080	2,320	1,420	2,300	2,880	2,240	3,360	6,060	1,930	3,240	1,690	1,220
22	1,000	2,040	2,120	2,070	3,020	2,100	3,480	11,000	1,700	3,540	5,290	1,180
23	1,160	1,540	1,410	1,960	2,420	2,010	7,080	11,400	1,530	3,400	18,100	1,370
24	1,140	1,420	1,350	1,970	2,220	2,300	9,430	10,600	2,280	3,500	12,600	1,650
25	1,210	1,670	1,600	1,480	2,450	3,920	7,880	8,420	2,440	3,800	7,860	1,340
26	1,300	1,460	1,880	2,010	1,850	4,250	6,540	7,530	2,300	3,560	5,920	1,190
27	1,210	1,080	1,850	1,500	2,040	5,100	5,620	7,340	2,090	3,700	4,550	1,420
28	1,200	1,000	2,180	1,810	1,860	5,180	4,720	6,480	1,880	3,680	3,780	1,710
29	1,100	1,010	2,870	1,900	-------	9,940	4,360	5,330	2,420	2,940	3,640	1,390
30	1,070	1,220	3,060	1,740	-------	12,400	3,920	4,890	1,400	2,300	3,100	1,640
31	1,110	-------	3,130	1,800	-------	9,120	--------	4,830	-------	2,840	2,980	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,300	900	1,090	0.289	0.33
November	2,490	1,000	1,580	.419	.47
December	6,680	1,200	2,230	.592	.68
January	2,500	1,480	3,000	.796	.92
February	3,420	1,390	2,180	.578	.60
March	12,400	1,760	3,310	.878	1.01
April	17,900	3,360	8,080	2.14	2.39
May	11,400	2,620	5,590	1.48	1.71
June	7,220	1,400	2,950	.782	.87
July	4,430	1,220	2,830	.751	.87
August	18,100	1,480	4,290	1.14	1.31
September	4,680	1,180	1,920	.509	.57
The year	18,100	900	3,260	.865	11.73

NEW RIVER NEAR HINTON, W. VA.

LOCATION.—Staff gage at site of Packs Ferry, 2 miles above Greenbrier River and 3½ miles south of Hinton, Summers County. Zero of gage is 1,368.045 feet above mean sea level.

DRAINAGE AREA.—4,560 square miles.

RECORDS AVAILABLE.—December, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 22,600 second-feet Apr. 5 (gage height, 8.65 feet); minimum, 700 second-feet Oct. 9 (gage height, 1.90 feet).

1923–1931: Maximum gage height, 17.2 feet Oct. 3, 1929 (discharge not determined); minimum discharge, 610 second-feet (revised) Aug. 27, 1925 (gage height, 1.80 feet).

The floods of Apr. 21 and May 23, 1901, reached a stage of about 24.2 feet on present gage. The flood of 1878 probably reached a higher stage.

REMARKS.—Records good. Some regulation at low stages by power plants above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,030	1,160	1,100	1,750	2,080	2,080	10,700	4,720	5,800	1,310	3,030	2,250
2	910	1,450	1,300	1,750	1,910	2,250	19,000	3,970	7,300	1,750	4,450	2,430
3	1,160	1,380	1,520	1,160	1,750	2,080	18,100	2,810	7,000	1,750	7,300	2,610
4	1,160	1,300	1,680	1,160	1,750	2,000	17,100	3,490	4,990	1,910	7,300	3,490
5	910	1,230	1,910	1,750	1,830	2,610	21,600	3,030	4,720	2,430	8,260	3,970
6	910	1,300	1,680	6,100	1,750	2,250	21,100	3,490	4,210	4,210	6,100	4,720
7	1,030	2,080	2,080	15,700	1,680	2,080	19,000	3,490	5,260	4,990	6,400	3,250
8	910	1,750	7,300	9,620	1,600	2,000	17,600	8,580	3,970	3,490	4,210	2,610
9	800	1,600	6,100	6,100	1,750	1,910	16,600	12,300	3,970	3,250	3,250	2,610
10	1,030	1,450	4,450	4,990	1,830	2,610	13,100	9,260	4,210	3,030	3,030	2,080
11	1,030	1,300	3,490	4,210	1,910	2,810	11,100	7,300	3,250	2,610	2,430	1,910
12	1,030	1,300	2,430	3,490	2,080	2,610	8,900	5,800	2,810	3,250	2,810	1,910
13	910	1,300	2,000	2,810	1,910	2,610	7,940	6,100	2,610	3,250	2,610	1,910
14	1,100	1,450	1,750	3,490	2,080	2,430	6,700	6,100	2,610	2,810	3,030	1,910
15	1,030	1,600	1,750	2,610	2,610	3,030	5,800	6,400	2,610	2,810	2,610	1,600
16	910	1,600	1,750	2,160	2,610	3,970	5,530	5,530	3,250	2,430	2,430	1,380
17	1,030	1,600	1,600	2,250	2,610	3,730	4,990	5,260	3,490	3,030	2,080	1,830
18	1,030	1,910	1,600	1,910	3,970	3,490	4,450	4,720	3,730	3,250	1,830	1,750
19	1,160	3,250	1,450	1,910	4,990	2,810	4,450	3,970	3,030	2,610	2,080	1,450
20	1,030	2,610	1,680	2,610	4,450	2,610	4,450	3,970	2,430	3,030	2,009	1,450
21	1,300	2,810	1,450	3,250	3,490	2,610	3,730	8,580	2,080	4,450	1,750	1,520
22	910	2,000	1,300	2,250	3,490	2,430	4,450	13,900	1,910	3,970	3,030	1,310
23	1,030	1,750	1,750	2,080	2,810	2,610	7,300	17,600	1,750	5,530	19,500	1,750
24	1,300	1,600	1,450	2,080	2,430	3,490	11,100	14,800	1,910	6,400	15,700	1,680
25	1,160	1,450	1,910	1,750	2,810	5,260	9,260	11,100	2,610	5,530	9,260	1,750
26	1,230	1,910	1,910	2,000	2,250	5,800	7,300	9,260	2,250	4,990	6,400	1,600
27	1,160	1,160	1,910	1,910	2,250	5,800	7,000	8,900	2,610	3,970	5,260	1,910
28	1,300	1,030	2,080	1,910	1,910	7,620	5,530	7,300	2,250	3,970	4,210	1,910
29	1,160	910	1,520	2,080	-------	12,300	5,530	6,700	2,430	3,490	3,970	1,750
30	1,030	1,030	1,910	1,910	-------	15,700	4,450	5,260	2,080	2,810	3,730	1,750
31	1,030	-------	1,600	1,750	-------	12,300	-------	5,260	-------	2,810	3,490	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,300	800	1,060	0.232	0.27
November	3,250	910	1,610	.353	.39
December	7,300	1,100	2,170	.476	.55
January	15,700	1,160	3,240	.711	.82
February	4,990	1,600	2,450	.537	.56
March	15,700	1,910	4,130	.906	1.04
April	21,600	3,730	10,100	2.21	2.47
May	17,600	2,810	7,060	1.55	1.79
June	7,300	1,750	3,440	.754	.84
July	6,400	1,310	3,390	.743	.86
August	19,500	1,750	4,950	1.09	1.26
September	4,720	1,310	2,140	.469	.52
The year	21,600	800	3,820	.838	11.37

NEW RIVER AT CAPERTON, W. VA.

LOCATION.—Water-stage recorder at suspension footbridge at Caperton, Fayette County. Zero of gage is 938.00 feet above mean sea level.

DRAINAGE AREA.—6,830 square miles.

RECORDS AVAILABLE.—November, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 42,600 second-feet Apr. 5 (gage height, 11.43 feet); minimum, 818 second-feet Oct. 8, 11 (gage height, 1.62 feet).

1928–1931: Maximum discharge, about 115,000 second-feet Oct. 3, 1929 (gage height, 21.10 feet); minimum, that of 1931.

REMARKS.—Records good. Discharge estimated July 19–24. Power plants on New River in Virginia cause some regulation at low stages.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,220	1,120	1,070	2,640	3,040	2,840	17,200	6,950	7,360	2,140	3,150	3,940
2	1,010	1,220	1,220	2,460	3,040	3,150	25,100	6,280	8,060	1,670	5,080	3,150
3	890	1,480	1,310	2,300	2,840	3,580	29,100	5,870	8,900	2,000	5,600	3,260
4	1,180	1,420	1,610	2,140	2,220	4,690	27,700	5,740	7,080	2,140	9,800	3,820
5	1,130	1,300	1,720	2,460	2,140	4,560	35,800	5,080	6,140	2,220	11,200	4,180
6	930	1,270	1,860	4,580	2,220	4,310	37,100	4,440	5,340	3,360	9,500	5,600
7	836	1,560	1,860	16,500	2,070	3,700	31,800	4,560	5,340	5,340	8,060	4,310
8	1,020	2,000	4,120	12,800	2,070	3,580	27,700	8,340	5,600	5,080	6,540	3,470
9	1,010	1,740	6,820	8,620	2,300	3,700	26,400	18,300	6,140	3,700	4,560	2,740
10	845	1,700	5,740	6,540	2,940	3,820	21,800	15,600	6,140	4,060	3,700	2,640
11	960	1,520	3,700	5,080	3,940	4,690	20,000	12,000	5,080	3,700	3,470	2,380
12	1,090	1,380	3,260	3,820	5,470	4,440	17,200	8,900	4,440	2,940	2,940	2,070
13	1,010	1,330	2,640	3,820	4,310	3,940	13,700	9,200	3,820	3,700	3,470	2,000
14	950	1,500	2,000	3,470	4,060	4,310	11,200	10,500	3,360	3,940	3,040	1,930
15	1,100	1,710	2,070	3,040	4,060	7,500	10,200	11,200	4,060	4,690	3,360	1,930
16	1,050	1,690	2,070	2,380	4,950	9,200	8,620	9,800	6,000	2,940	3,150	1,790
17	990	1,740	1,750	2,140	4,820	10,200	7,780	8,900	5,340	3,470	2,740	1,710
18	1,010	1,860	1,620	2,460	6,000	8,340	6,680	7,780	7,220	4,060	2,550	1,930
19	1,170	2,300	1,560	2,140	8,900	6,820	6,140	7,500	5,870	3,800	2,070	1,750
20	1,200	2,840	1,430	2,740	8,900	5,740	5,740	9,200	4,440	2,900	2,300	1,930
21	1,120	2,550	1,620	3,360	7,500	5,210	5,470	10,500	3,470	3,900	3,150	1,790
22	1,230	2,460	1,390	3,150	6,280	5,080	5,470	21,800	3,040	4,400	3,260	1,700
23	1,050	2,070	1,670	2,840	5,470	4,950	7,780	35,100	2,640	5,500	14,300	1,930
24	1,050	1,740	1,610	2,550	4,440	5,600	14,200	33,800	2,380	5,700	24,400	2,140
25	1,230	1,600	1,200	2,550	3,820	8,060	14,200	23,100	2,940	7,500	14,200	2,300
26	1,180	1,640	1,460	2,140	3,940	9,500	12,000	17,800	3,360	6,410	9,200	2,940
27	1,300	1,860	1,790	2,460	3,150	9,500	10,200	14,600	2,940	4,950	7,220	3,360
28	1,320	1,320	2,070	2,300	3,040	12,400	9,200	12,000	3,150	4,690	5,740	3,470
29	1,330	1,070	2,000	2,940	-------	20,000	8,620	9,800	2,460	4,560	4,950	3,700
30	1,230	1,060	3,150	4,440	-------	29,100	7,500	8,060	2,840	3,580	4,820	2,940
31	1,140	-------	3,260	3,470	-------	21,800	-------	7,500	-------	2,840	4,180	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,330	836	1,090	0.160	0.18
November	2,840	1,060	1,670	.244	.27
December	6,820	1,070	2,280	.334	.39
January	16,500	2,140	4,010	.587	.68
February	8,900	2,070	4,210	.616	.64
March	29,100	2,840	7,560	1.11	1.28
April	37,100	5,470	16,100	2.36	2.63
May	35,100	4,440	11,900	1.74	2.01
June	8,900	2,380	4,830	.707	.79
July	7,500	1,670	3,930	.575	.66
August	24,400	2,070	6,180	.905	1.04
September	5,600	1,700	2,760	.404	.45
The year	37,100	836	5,550	.813	11.02

KANAWHA RIVER AT KANAWHA FALLS, W. VA.

LOCATION.—Water-stage recorder three-quarters of a mile below Kanawha Falls and 2 miles below Gauley Bridge, Fayette County. Zero of gage is 622.78 feet above mean sea level, United States Geological Survey datum.

DRAINAGE AREA.—8,300 square miles.

RECORDS AVAILABLE.—March, 1877, to September, 1916; October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 53,400 second-feet Apr. 4, 5 (gage height, 10.33 feet); minimum, 814 second-feet Oct. 11 (gage height, −0.74 foot).

1877–1916; 1928–1931: Maximum discharge, about 270,000 second-feet Sept. 14, 1878 (gage height, 37.8 feet); minimum, 640 second-feet Aug. 15, 1930 (gage height, −0.95 foot).

REMARKS.—Records good. Discharge estimated July 5–20, Sept. 3–8.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,160	1,100	1,080	3,180	4,820	4,180	26,900	8,920	8,920	2,890	3,280	5,500
2	1,280	1,180	1,280	2,620	4,430	5,650	31,700	8,050	9,300	2,120	5,950	4,430
3	950	1,510	1,530	2,620	3,940	7,000	34,200	7,180	10,900	1,980	12,700	4,300
4	1,050	1,480	1,840	2,620	3,490	7,520	39,800	7,000	8,580	2,890	16,200	5,350
5	1,180	1,340	2,120	2,890	2,890	7,000	50,300	6,100	7,180	2,940	16,200	5,550
6	1,090	1,340	2,200	7,400	2,980	6,250	46,800	5,080	6,850	3,700	14,200	6,000
7	880	1,360	2,280	20,900	2,800	5,500	40,500	5,500	6,400	5,800	10,700	5,600
8	841	2,200	4,430	18,500	2,890	5,360	34,900	9,900	8,400	6,500	8,580	4,350
9	1,210	1,910	8,220	11,900	4,060	6,400	33,500	23,300	9,500	4,750	5,800	3,380
10	930	1,720	6,550	8,400	10,300	6,400	31,700	20,900	8,920	4,750	4,560	3,280
11	850	1,780	4,690	6,550	8,750	6,700	32,300	15,700	7,350	5,000	4,180	2,890
12	1,130	1,440	3,820	5,220	8,920	6,400	29,900	11,500	6,100	4,300	3,710	2,710
13	1,050	1,400	3,180	4,950	7,000	5,800	23,300	12,300	5,080	4,350	4,690	2,440
14	1,040	1,480	2,800	4,300	6,550	6,850	17,900	17,300	4,560	4,600	5,360	2,530
15	1,030	1,780	2,440	4,060	8,400	17,300	15,200	20,300	7,700	5,000	4,820	2,280
16	1,200	1,780	2,530	3,080	8,220	22,100	12,300	16,200	11,900	3,900	4,180	2,360
17	1,050	1,840	2,440	2,620	7,880	18,500	10,500	13,200	9,700	3,800	3,600	2,120
18	990	1,910	1,910	3,280	11,100	12,700	8,580	11,100	10,100	4,300	3,280	2,530
19	1,170	2,120	1,910	2,980	15,700	11,900	7,700	13,700	7,700	4,300	2,800	2,620
20	1,280	2,890	1,620	3,710	15,700	10,900	6,850	16,200	5,950	3,300	2,620	2,360
21	1,140	2,530	1,910	5,220	2,300	9,700	6,700	17,300	5,360	3,710	24,500	2,530
22	1,240	2,620	1,720	4,950	9,500	9,100	6,250	29,300	4,560	4,950	26,300	2,710
23	1,240	2,120	1,650	3,940	8,220	10,100	9,900	45,800	4,180	5,220	31,100	2,890
24	1,020	2,050	2,200	3,710	6,550	10,900	17,300	44,000	3,820	6,400	35,600	3,600
25	1,220	1,720	1,280	3,490	5,650	13,200	17,900	31,100	3,940	7,000	22,700	3,710
26	1,260	1,650	1,330	2,980	5,650	15,200	15,700	24,500	4,180	8,050	14,700	4,430
27	1,300	1,910	2,050	3,280	4,690	14,700	15,200	19,700	3,490	6,250	10,500	8,220
28	1,410	1,600	2,360	5,800	4,300	17,900	13,700	15,700	3,820	5,500	8,050	7,000
29	1,320	1,240	2,620	6,100	-------	29,300	12,300	12,300	2,980	5,080	7,180	6,700
30	1,380	1,050	3,710	6,850	-------	37,000	10,300	10,100	3,080	4,180	8,050	5,500
31	1,230	-------	3,710	5,500	-------	28,700	--------	8,920	-------	3,380	6,550	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,410	841	1,130	0.136	0.16
November	2,890	1,050	1,740	.210	.23
December	8,220	1,080	2,690	.324	.37
January	20,900	2,620	5,600	.675	.78
February	15,700	2,800	7,060	.851	.89
March	37,000	4,180	12,100	1.46	1.68
April	50,300	6,250	22,000	2.65	2.96
May	46,800	5,080	16,400	1.98	2.28
June	11,900	2,980	6,680	.805	.90
July	8,050	1,980	4,540	.547	.63
August	35,600	2,620	10,700	1.29	1.49
September	8,220	2,120	4,000	.482	.54
The year	50,300	841	7,890	.951	12.91

NORTH FORK OF NEW RIVER AT CRUMPLER, N. C.

LOCATION.—Water-stage recorder a quarter of a mile below State highway bridge at Crumpler, Ashe County, and 6 miles above confluence with South Fork. Chain gage a quarter of a mile upstream used prior to Nov. 6, 1930.

DRAINAGE AREA.—277 square miles.

RECORDS AVAILABLE.—July, 1928, to September, 1931. From August, 1908, to September, 1916, at site half a mile above confluence with South Fork.

EXTREMES.—Maximum discharge during year, 2,980 second-feet Aug. 22 (gage height, 4.20 feet); minimum, 59 second-feet Oct. 3.

1908–1916; 1928–1931: Maximum discharge, about 24,000 second-feet July 15, 1916; minimum, 52 second-feet Aug. 5, 1930.

REMARKS.—Records good except those above 1,500 second-feet and those for Oct. 1 to Nov. 5, Feb. 15, which are fair, and those estimated for periods of ice effect, Dec. 19, 20, 22, 23, Dec. 26 to Jan. 4, which are poor. Probably slight regulation, owing to operation of old gristmills.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	99	298	350	264	218	1,080	421	682	238	548	238
2	72	94	270	340	238	218	1,080	400	484	185	340	275
3	68	104	194	330	218	180	1,040	364	414	400	270	872
4	74	189	270	320	214	172	2,020	304	364	638	498	765
5	106	157	825	1,240	199	164	2,040	286	334	615	810	442
6	138	214	1,200	1,520	172	172	1,420	286	428	615	477	352
7	135	172	742	848	172	172	1,160	512	346	470	622	298
8	129	148	470	585	172	238	1,080	652	346	358	540	275
9	124	133	352	456	214	180	1,040	456	328	298	555	254
10	119	133	298	376	292	190	864	414	280	358	376	233
11	106	133	259	334	214	218	802	358	254	270	322	223
12	104	130	249	352	214	209	638	394	238	238	352	209
13	99	254	218	346	214	190	540	407	228	340	519	199
14	111	238	214	259	352	238	505	388	328	526	304	190
15	109	280	199	209	320	334	470	352	364	456	280	180
16	119	376	176	322	280	280	421	328	264	340	270	176
17	114	400	228	370	328	249	358	310	233	400	228	176
18	99	316	280	322	340	218	376	435	204	400	204	172
19	94	249	350	340	322	218	352	463	194	456	204	180
20	84	204	380	340	298	199	316	394	176	428	578	185
21	80	180	328	259	280	190	292	728	176	334	1,230	168
22	82	172	320	270	254	233	959	600	209	578	2,040	156
23	104	164	320	270	238	249	856	840	280	780	960	152
24	114	148	304	292	228	322	675	630	244	600	.652	160
25	101	156	304	280	218	456	615	526	204	463	505	152
26	87	214	370	286	204	370	555	795	185	533	414	194
27	94	180	470	310	180	376	526	570	172	364	370	340
28	129	238	450	340	172	1,080	526	505	172	346	340	190
29	160	244	400	328	-------	1,160	470	435	164	292	334	180
30	189	254	370	310	-------	802	463	498	172	249	298	168
31	129	-------	360	280	-------	652	-------	512	-------	570	259	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	189	68	108	0.390	0.45
November	400	94	199	.718	.80
December	1,200	176	370	1.34	1.54
January	1,520	209	412	1.49	1.72
February	352	172	243	.877	.91
March	1,160	164	327	1.18	1.36
April	2,040	292	785	2.83	3.16
May	840	286	470	1.70	1.96
June	682	164	282	1.02	1.14
July	780	185	424	1.53	1.76
August	2,040	204	506	1.83	2.11
September	872	152	258	.931	1.04
The year	2,040	68	366	1.32	17.95

CRIPPLE CREEK NEAR IVANHOE, VA.

LOCATION.—Chain gage at highway bridge about 2 miles from Ivanhoe, Wythe County, and 3½ miles above mouth.
DRAINAGE AREA.—148 square miles.
RECORDS AVAILABLE.—January, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year, 1,460 second-feet Apr. 4 (gage height, 3.56 feet); minimum, 27 second-feet Dec. 21 (gage height, 0.22 foot).
1930–31: Maximum discharge, that of Apr. 4, 1931; minimum, that of Dec. 21, 1930.
REMARKS.—Records good. Discharge estimated Nov. 26–29, Dec. 22–25, Jan. 15, 16.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	41	50	71	55	55	321	93	234	68	56	78
2	32	40	38	70	55	52	382	88	205	67	59	82
3	40	39	34	48	57	49	474	86	154	166	59	109
4	37	44	35	46	54	54	980	84	137	128	63	96
5	33	54	36	122	56	57	850	89	114	137	143	89
6	49	46	74	132	54	50	551	74	114	111	89	68
7	45	41	61	59	66	50	267	98	105	93	83	63
8	32	39	55	93	46	54	499	302	109	76	74	64
9	34	40	52	82	48	56	450	205	103	77	59	63
10	34	39	54	77	50	52	341	166	83	80	63	61
11	37	39	42	61	55	52	267	124	58	72	61	59
12	35	45	35	68	54	55	219	137	72	71	63	66
13	37	46	40	66	55	55	178	139	67	71	61	57
14	35	61	40	58	56	54	178	130	74	67	59	63
15	36	42	41	50	52	56	143	122	82	70	55	55
16	37	39	41	45	55	63	128	114	77	74	52	61
17	36	42	37	58	62	51	126	105	77	78	54	61
18	37	49	46	59	56	56	111	107	68	68	44	62
19	30	40	40	58	52	61	107	98	55	82	49	58
20	33	37	52	55	54	62	100	93	62	74	118	48
21	34	40	30	59	55	50	93	178	62	83	284	58
22	33	45	30	45	58	59	205	234	63	70	1,110	47
23	45	37	30	52	58	70	382	219	77	128	551	45
24	45	52	30	55	58	178	267	191	71	126	321	42
25	40	38	30	49	57	191	234	166	71	118	191	47
26	39	30	50	51	63	143	178	250	76	111	154	50
27	43	30	83	49	54	126	154	219	68	143	130	48
28	39	30	62	49	54	284	137	178	66	107	109	50
29	43	30	61	54	------	499	130	154	63	80	93	54
30	42	41	59	50	------	267	122	130	62	68	78	42
31	38	------	57	52	------	178	------	124	------	70	77	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	49	30	37.4	0.253	0.29
November	61	----------	40.9	.276	.31
December	83	----------	46.0	.311	.36
January	132	45	62.7	.424	.49
February	66	46	55.3	.374	.39
March	499	49	101	.682	.79
April	980	93	286	1.93	2.15
May	302	74	145	.980	1.13
June	234	55	91.0	.615	.69
July	166	67	91.4	.618	.71
August	1,110	44	144	.973	1.12
September	109	42	61.5	.416	.46
The year	1,110	----------	96.9	.655	8.89

REED CREEK AT GRAHAMS FORGE, VA.

LOCATION.—Chain gage at highway bridge at Grahams Forge, Wythe County, 2½ miles below Glade Creek.

DRAINAGE AREA.—247 square miles.

RECORDS AVAILABLE.—July, 1908, to September, 1916; February, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,240 second-feet Apr. 5 (gage height, 3.90 feet); minimum, 32 second-feet Oct. 20 (gage height, 1.18 feet). 1908–1916, 1927–1931: Maximum gage height, 12.1 feet July 16, 1916 (discharge not determined); minimum discharge, about 5 second-feet Dec. 22, 1909 (gage height, 1.17 feet). This extremely low discharge was probably caused by freezing weather or by regulation of flow by power plants above station or by both.

REMARKS.—Records good. Discharge estimated Nov. 26–29, Dec. 23–26, Jan. 16. Low-water flow may be slightly affected by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	61	70	101	66	96	632	165	348	70	142	93
2	57	61	68	68	61	91	439	162	258	64	244	86
3	46	59	53	86	61	91	995	152	206	72	183	129
4	46	61	64	74	64	84	1,280	145	172	91	136	118
5	51	74	64	235	68	81	1,660	132	155	98	145	104
6	53	81	104	795	61	79	890	123	145	76	316	86
7	51	66	253	377	64	81	795	139	136	84	152	81
8	48	59	123	219	64	88	940	995	129	79	118	84
9	48	61	115	165	66	86	670	439	126	76	104	76
10	61	59	76	145	74	86	487	300	112	136	93	74
11	55	57	72	118	104	84	401	244	104	106	88	74
12	48	66	72	106	96	84	316	223	101	84	91	76
13	53	74	66	112	76	84	271	235	98	72	136	68
14	55	72	64	98	98	76	240	231	88	76	112	61
15	55	81	66	74	190	91	219	227	96	81	79	66
16	53	74	59	60	165	129	198	198	145	81	86	70
17	49	70	55	88	145	132	176	180	106	76	74	59
18	46	76	74	93	190	104	176	176	88	123	61	66
19	46	68	76	84	190	109	165	165	86	158	70	61
20	48	72	74	86	172	106	162	145	76	202	129	64
21	51	70	61	68	155	93	155	522	79	139	187	59
22	59	68	51	64	132	104	214	316	112	158	595	61
23	48	68	45	74	120	112	670	795	98	152	487	66
24	57	61	40	76	118	231	371	522	96	522	300	64
25	51	55	40	76	109	290	295	337	84	219	210	70
26	61	50	50	74	98	271	253	522	81	148	172	64
27	55	40	88	72	91	227	231	446	79	123	142	136
28	57	40	115	76	88	522	206	321	74	106	123	79
29	74	50	123	68	-------	940	183	248	70	93	112	74
30	68	68	101	72	-------	522	172	219	72	115	104	66
31	66	-------	64	66	-------	337	-------	231	-------	276	93	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	74	46	53.9	0.218	0.25
November	81	40	64.1	.260	.29
December	253	40	78.9	.319	.37
January	795	60	128	.518	.60
February	190	61	107	.433	.45
March	940	76	178	.721	.83
April	1,660	155	462	1.87	2.09
May	995	123	299	1.21	1.40
June	348	70	121	.490	.55
July	522	64	128	.518	.60
August	595	61	164	.664	.77
September	136	59	77.8	.315	.35
The year	1,660	40	155	.628	8.55

PEAK CREEK AT PULASKI, VA.

LOCATION.—Chain gage at Washington Avenue Bridge in Pulaski, Pulaski County, three-eighths of a mile below Track Fork.

DRAINAGE AREA.—68 square miles.

RECORDS AVAILABLE.—February, 1927, to September, 1931, fragmentary.

EXTREMES.—Maximum discharge during year, 1,300 second-feet Apr. 4 (gage height, 6.40 feet); minimum, 0.5 second-foot several times in October (gage height, 1.40 feet).

1927–1931: Maximum discharge, 3,820 second-feet Oct. 2, 1929 (gage height, 10.68 feet); minimum, 0.3 second-foot Sept. 4, 5, 1930 (gage height, 1.36 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.9	2	6	5	16	630	22	62	5	7	6
2	.6	.8	1	3	6	17	332	23	37	3	49	41
3	.5	.8	1	5	5	19	113	20	25	5	39	87
4	.5	2	3	6	6	17	818	18	19	9	12	38
5	.5	3	2	163	5	16	318	15	16	9	10	18
6	.6	2	26	191	5	14	191	14	21	7	80	12
7	.5	2	28	75	6	12	191	146	39	7	17	8
8	.6	1	12	39	5	15	318	347	27	6	11	7
9	.6	1	6	28	7	18	191	146	17	5	8	6
10	.7	1	5	18	9	18	121	84	14	5	6	5
11	.6	1	5	12	9	17	83	61	11	8	6	4
12	.6	1	4	14	7	15	59	58	10	4	5	4
13	.8	2	3	11	7	12	46	52	9	6	17	4
14	.6	4	3	9	14	11	38	52	8	6	8	4
15	6	6	3	8	24	13	32	43	8	4	6	3
16	2	6	2	5	19	11	26	34	8	3	5	3
17	1	5	3	7	27	10	24	33	7	3	4	3
18	1	4	3	8	46	9	21	29	6	3	4	4
19	1	3	5	9	39	11	20	24	5	3	4	3
20	1	2	4	10	29	10	19	21	4	28	8	3
21	.8	2	4	9	24	9	16	304	4	7	23	4
22	.6	2	3	9	18	12	42	129	4	9	121	3
23	1	2	3	7	15	14	182	191	21	12	163	3
24	1	2	3	7	16	92	93	105	10	100	70	3
25	1	2	2	8	12	90	67	90	7	35	33	3
26	.8	2	3	7	11	61	55	232	6	12	18	14
27	.8	1	9	7	10	43	41	129	6	10	14	9
28	.8	1	10	7	9	222	28	80	5	7	11	6
29	2	.8	11	7	-------	362	23	52	5	6	9	4
30	1	2	8	6	-------	137	24	39	4	4	7	4
31	1	-------	7	6	-------	84	-------	29	-------	14	6	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6	0.5	1.00	0.015	0.02
November	6	.8	2.18	.032	.04
December	28	1	5.9	.087	.10
January	191	3	22.8	.335	.39
February	46	5	14.1	.207	.22
March	362	9	45.4	.668	.77
April	818	16	139	2.04	2.28
May	347	14	84.6	1.24	1.43
June	62	4	14.2	.209	.23
July	100	3	11.1	.163	.19
August	163	4	24.9	.366	.42
September	87	3	10.5	.154	.17
The year	818	.5	31.3	.460	6.26

LITTLE RIVER AT GRAYSONTON, VA.

LOCATION.—Chain gage at highway bridge at Graysonton, Montgomery County, 7 miles south of Radford and 7 miles above mouth.

DRAINAGE AREA.—302 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,420 second-feet Aug. 22 (gage height, 4.90 feet); minimum, 73 second-feet Jan. 23 (gage height, 2.58 feet).

1928–1931: Maximum gage height, 12.84 feet Oct. 2, 1929 (discharge not determined); minimum discharge, 68 second-feet Aug. 2, 1930 (gage height, 2.74 feet).

REMARKS.—Records good. Discharge estimated Dec. 21–28, Dec. 31 to Jan. 3, Jan. 15, 16, 19, 20. Flow partly regulated by mill and dam 500 feet above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	138	143	160	134	178	1,060	183	452	122	552	128
2	100	147	138	140	127	209	1,170	204	398	115	340	132
3	98	117	110	160	131	169	598	199	226	112	1,340	252
4	114	127	127	183	127	152	690	188	160	204	265	386
5	98	395	124	529	127	143	840	165	156	518	365	200
6	110	225	331	1,290	131	134	644	165	151	320	235	149
7	103	225	739	547	131	131	690	199	220	214	164	132
8	127	178	317	305	143	160	892	538	184	147	120	112
9	100	165	209	298	152	297	644	290	143	143	116	124
10	103	134	183	312	156	183	472	230	143	119	108	101
11	114	127	174	292	138	169	373	225	130	156	108	108
12	110	143	178	285	134	143	317	254	119	143	140	154
13	131	156	160	186	138	183	278	344	119	126	159	93
14	124	156	160	177	147	143	254	284	122	147	169	90
15	143	156	156	160	134	188	242	236	179	143	154	124
16	143	230	160	150	124	199	225	209	151	199	124	120
17	165	236	143	206	169	156	214	199	184	98	120	112
18	156	220	117	255	220	147	214	209	130	147	116	116
19	134	138	120	300	183	147	204	188	108	126	104	124
20	124	152	152	220	160	143	204	178	115	105	132	132
21	127	156	140	143	160	143	188	892	95	130	200	101
22	107	147	130	147	152	156	317	460	112	151	1,520	128
23	127	131	130	124	147	188	840	526	268	139	876	132
24	114	124	120	147	131	297	373	333	274	126	495	124
25	120	134	140	143	138	488	304	238	147	194	271	124
26	134	138	160	143	138	480	272	624	139	214	303	184
27	138	93	240	143	114	410	254	383	135	174	223	159
28	131	134	300	143	120	488	204	262	122	126	217	149
29	156	117	225	131	------	1,060	183	209	115	119	169	124
30	183	138	204	134	------	572	165	179	112	112	159	98
31	165	------	180	127	------	358	------	164	------	232	149	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	183	98	126	0.417	0.48
November	395	93	163	.540	.60
December	739	110	191	.632	.73
January	1,290	124	248	.821	.95
February	220	114	143	.474	.49
March	1,060	131	259	.858	.99
April	1,170	165	444	1.47	1.64
May	892	164	289	.957	1.10
June	452	95	170	.563	.63
July	518	98	165	.546	.63
August	1,520	104	307	1.02	1.18
September	386	90	140	.464	.52
The year	1,520	90	221	.732	9.94

WEST FORK OF COVE CREEK NEAR BLUEFIELD, VA.

LOCATION.—Staff gage at old tramway railroad bridge 10 miles southwest of Bluefield, Tazewell County.
DRAINAGE AREA.—5.5 square miles.
RECORDS AVAILABLE.—June, 1929, to September, 1931.
EXTREMES.—Maximum discharge during year, 58 second-feet Apr. 4 (gage height, 2.34 feet); minimum, 0.3 second-foot Oct. 5, 6, 13 (gage height, 0.02 foot).
1929–1931: Maximum discharge, 93 second-feet Nov. 3, 1929 (gage height, 2.88 feet); minimum, that of October, 1930.
REMARKS.—Records fair. Discharge estimated Dec. 14–17, 22–25, Jan. 9–17.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	1.2	1.9	2.5	2.5	6.2	16.0	7.8	10.6	1.0	2.0	3.2
2	.5	1.3	1.7	2.5	2.5	5.6	15.7	7.8	8.6	.9	2.7	2.6
3	.4	1.5	1.5	3.6	2.5	5.6	21.0	6.6	8.0	.9	7.0	18.5
4	.4	1.3	1.5	6.2	3.6	5.5	58.0	6.0	7.3	1.5	13.1	9.2
5	.3	2.5	1.5	9.5	3.2	5.1	46.0	5.6	7.0	2.4	14.4	7.0
6	.3	3.2	3.2	9.5	2.5	4.8	30.0	6.0	6.4	1.8	12.0	5.4
7	.4	2.9	6.2	9.5	2.5	4.8	26.0	12.2	6.5	2.0	10.1	4.7
8	.4	2.5	4.8	8.8	3.6	4.3	32.0	21.0	6.2	1.6	7.6	3.5
9	.4	1.5	3.6	8.0	3.6	4.3	36.0	16.6	5.5	1.3	4.8	2.9
10	.5	1.5	3.6	7.0	4.3	4.3	26.0	14.2	4.9	1.1	4.1	2.4
11	.5	1.3	3.6	6.0	4.3	4.6	25.0	11.2	4.3	.9	2.9	4.2
12	.4	1.5	3.2	6.0	4.3	4.6	21.0	9.7	4.1	.9	2.9	3.0
13	.4	3.6	2.5	6.0	3.6	5.4	21.0	11.6	3.7	.6	2.8	2.6
14	.9	3.6	2.0	5.0	3.6	5.4	13.3	14.4	3.7	1.0	2.4	2.1
15	.9	2.5	1.5	4.0	4.3	19.3	10.8	14.2	4.2	.9	1.8	2.0
16	1.0	2.5	1.5	4.0	4.8	14.4	11.6	12.4	4.3	.6	1.4	2.1
17	1.1	2.5	1.5	5.0	6.2	13.5	8.2	10.8	3.6	.5	1.3	1.8
18	1.1	2.5	2.3	7.0	6.8	12.7	7.6	9.5	2.9	.4	1.7	1.6
19	1.3	2.5	1.5	6.2	6.8	9.0	6.6	8.2	2.5	7.3	1.3	1.7
20	1.3	2.1	1.5	6.2	7.8	8.0	6.2	9.5	2.2	4.9	1.2	1.8
21	1.3	2.1	1.5	5.5	7.8	7.2	5.8	13.3	2.2	4.4	12.7	1.6
22	1.3	1.5	1.5	4.8	8.8	7.0	21.0	22.0	3.4	4.9	32.0	1.3
23	1.7	1.3	1.5	4.8	8.6	6.8	40.0	34.0	4.4	13.7	32.0	1.0
24	2.5	1.3	1.5	4.2	7.8	8.1	15.4	27.0	4.0	12.7	30.0	.9
25	1.5	1.3	2.0	3.6	7.3	12.0	12.2	21.0	3.5	8.3	22.0	1.3
26	1.1	1.5	3.6	3.6	6.2	11.8	16.1	20.4	1.8	5.2	14.8	6.4
27	.9	1.5	3.6	3.6	5.6	13.7	12.2	17.0	1.4	4.2	9.3	6.7
28	.9	1.5	6.2	3.6	5.4	27.0	11.6	13.5	1.4	3.2	6.7	6.1
29	1.5	1.7	6.2	3.2	-------	32.0	10.4	11.6	1.1	2.6	7.2	3.8
30	1.3	1.7	4.3	3.2	-------	22.0	7.9	10.3	1.0	2.2	4.9	2.4
31	1.2	-------	3.6	3.2	-------	18.5	-------	9.7	-------	1.7	4.1	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.5	0.3	0.91	0.165	0.19
November	3.6	1.2	1.98	.360	.40
December	6.2	1.5	2.78	.505	.58
January	9.5	2.5	5.35	.973	1.12
February	8.8	2.5	5.03	.915	.95
March	32	4.3	10.1	1.84	2.12
April	58	5.8	19.7	3.58	3.99
May	34	5.6	13.4	2.44	2.81
June	10.6	1.0	4.36	.793	.88
July	13.7	.4	3.08	.560	.65
August	32	1.2	8.81	1.60	1.84
September	18.5	.9	3.79	.689	.77
The year	58	.3	6.61	1.20	16.30

BLUESTONE RIVER AT LILLY, W. VA.

LOCATION.—Staff gage 1,200 feet below Little Bluestone River at Lilly, Summers County.

DRAINAGE AREA.—454 square miles.

RECORDS AVAILABLE.—August, 1908, to September, 1916; October, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 3,820 second-feet Apr. 4, May 23 (gage heights, 5.60 and 5.62 feet); minimum, 3.2 second-feet Oct. 7 (gage height, 0.66 foot).

1908–1916, 1929–1931: Maximum discharge, about 10,400 second-feet Nov. 18, 1929 (gage height, about 9 feet); probably no flow Aug. 10, 1915 (gage height, 0.0 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1929–1931

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1929–30												
1	-------	940	490	800	345	341	226	204	58	19	33	12
2	-------	540	490	660	376	345	215	149	56	16	24	9.0
3	-------	2,720	465	730	[a] 400	316	242	128	50	14	20	11
4	-------	4,160	940	940	2,440	296	490	121	44	12	16	7.2
5	-------	2,300	695	835	4,520	259	540	102	41	11	12	6.8
6	-------	1,020	515	695	2,870	304	600	104	46	11	12	7.6
7	-------	660	570	600	1,480	540	1,380	111	52	12	18	6.8
8	-------	515	765	540	980	2,440	1,020	94	60	7.2	9.5	6.4
9	-------	430	695	465	695	1,690	870	88	57	10	19	6.4
10	-------	341	630	415	630	1,020	630	82	47	7.6	35	6.4
11	-------	308	540	358	515	905	515	77	43	6.0	31	6.4
12	-------	316	465	316	435	905	440	79	37	8.0	26	6.4
13	-------	304	400	304	465	1,060	381	94	35	9.0	28	12
14	-------	333	368	304	515	1,100	345	94	32	18	32	11
15	-------	515	341	300	490	905	333	75	29	16	27	9.5
16	77	1,020	363	279	490	800	296	94	28	23	29	7.6
17	77	1,280	386	234	490	660	263	179	26	33	33	7.2
18	77	7,400	415	222	515	540	247	149	26	22	26	12
19	64	4,160	490	166	515	800	275	490	27	17	21	7.6
20	62	1,800	695	[a] 180	490	1,020	242	600	31	14	20	6.8
21	64	1,020	540	[a] 195	490	835	204	400	27	10	17	8.0
22	835	730	465	207	440	695	204	242	23	9.5	18	6.0
23	1,280	630	465	222	440	570	189	185	22	9.0	50	5.2
24	600	540	425	[a] 225	515	490	163	149	21	9.5	71	5.2
25	386	515	490	[a] 230	570	465	151	126	16	9.5	44	6.0
26	288	465	465	238	515	430	138	102	16	8.0	32	5.2
27	222	600	490	215	440	381	133	90	25	7.2	28	4.0
28	179	765	940	259	381	324	126	82	50	179	23	4.0
29	263	695	2,300	[a] 280	-------	284	123	77	42	185	26	3.6
30	730	630	1,380	[a] 305	-------	279	123	66	26	82	19	4.4
31	1,580	-------	980	[a] 325	-------	251	-------	63	-------	48	13	-------

[a] Estimated because of ice effect.

Daily and monthly discharge, in second feet, of Bluestone River at Lilly, W. Va., 1929–1931—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	5.6	14	22	60	57	126	1,190	300	354	26	98	141
2	6.4	14	26	52	52	114	2,580	292	345	29	1,100	133
3	5.6	16	31	63	44	118	2,040	263	255	43	905	151
4	4.4	13	46	56	42	104	3,650	230	218	56	540	381
5	3.8	15	33	96	38	102	2,720	185	170	48	1,380	292
6	3.6	19	114	1,380	36	94	2,170	166	151	36	695	170
7	3.2	19	200	905	42	100	2,580	292	136	46	333	118
8	3.4	32	242	440	42	126	2,580	1,190	166	47	204	90
9	3.6	25	170	284	54	149	1,690	835	179	37	151	70
10	3.8	16	71	211	141	179	1,100	600	192	540	109	63
11	4.0	19	43	166	149	170	1,020	465	149	275	98	54
12	4.4	21	66	146	128	196	980	410	111	192	82	51
13	4.8	23	54	133	109	176	800	490	92	71	121	63
14	4.0	20	47	118	196	324	600	695	84	50	238	46
15	4.4	26	52	96	420	1,190	515	870	84	255	104	39
16	4.8	36	26	[a] 95	400	1,920	400	730	341	114	98	48
17	8.0	38	18	94	354	870	300	570	271	63	58	62
18	5.2	71	26	98	660	515	284	490	114	905	48	54
19	4.0	215	23	94	765	430	267	400	79	284	47	46
20	4.8	255	30	[a] 95	630	345	255	515	58	218	46	46
21	7.2	62	23	[a] 95	465	279	259	1,190	52	415	75	43
22	8.0	46	25	[a] 95	350	284	358	1,800	47	376	425	37
23	7.6	35	24	[a] 95	275	386	980	3,650	43	870	1,190	37
24	8.0	29	26	[a] 95	218	870	660	2,300	46	1,190	835	42
25	5.6	26	22	96	179	1,060	540	1,380	56	800	430	73
26	11	24	25	96	151	940	490	1,100	42	358	308	70
27	22	14	26	73	128	630	540	835	35	234	267	255
28	20	14	36	73	111	1,920	440	600	33	154	196	166
29	18	14	255	71	------	3,020	400	490	31	144	215	102
30	16	24	121	64	------	2,440	354	395	28	136	300	70
31	14	------	73	60	------	940	------	345	------	121	182	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1929–30					
October 16–31	1,580	62	424	0.934	0.56
November	7,400	304	1,260	2.78	3.10
December	2,300	341	634	1.40	1.61
January	940	166	389	.857	.99
February	4,520	345	837	1.84	1.92
March	2,440	251	685	1.51	1.74
April	1,380	123	370	.815	.91
May	600	63	151	.333	.38
June	60	16	36.4	.080	.09
July	185	6.0	27.2	.060	.07
August	71	9.5	26.2	.058	.07
September	12	3.6	7.26	.016	.02
1930–31					
October	22	3.2	7.39	0.016	0.02
November	255	13	39.8	.088	.10
December	255	18	64.4	.142	.16
January	1,380	52	180	.396	.46
February	765	36	223	.491	.51
March	3,020	94	649	1.43	1.65
April	3,650	255	1,090	2.40	2.68
May	3,650	166	777	1.71	1.97
June	354	28	132	.291	.32
July	1,190	26	262	.577	.67
August	1,380	46	351	.773	.89
September	381	37	100	.220	.25
The year	3,650	3.2	324	.714	9.68

[a] Estimated because of ice effect.

GREENBRIER RIVER AT BUCKEYE, W. VA.

LOCATION.—Chain gage at county highway bridge at Buckeye, Pocahontas County, 300 feet above Swago Creek.

RECORDS AVAILABLE.—September, 1929, to September, 1931.

EXTREMES.—Maximum gage height during year ending Sept. 30, 1931, 9.00 feet Apr. 4 (discharge not determined); minimum discharge, 6.4 second-feet Oct. 2, 4, 5, 6 (gage height, 1.24 feet).

1929–1931: Maximum gage height, 11.70 feet Nov. 18, 1929 (discharge not determined); minimum discharge, 3.8 second-feet Aug. 13, 1930 (gage height, 1.19 feet).

REMARKS.—Records good; discharge estimated because of ice Jan. 9–18, 21–23, 1931.

Daily and monthly discharge, in second-feet, 1929-1931

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	A r.	May	June	July	Aug.	Sept.
1929-30													
1	------	28	860	678	1,100	370	900	370	289	78	44	7.6	15
2	------	3,250	745	678	1,100	348	745	325	325	74	47	7.0	21
3	------	3,800	4,350	678	1,260	325	612	465	277	53	33	8.8	15
4	------	1,740	3,250	678	1,180	1,420	520	645	253	47	35	6.4	16
5	------	1,180	1,950	678	900	2,650	465	645	242	44	25	8.2	12
6	------	745	1,420	678	860	1,770	492	820	269	49	28	20	19
7	------	520	1,020	678	780	1,260	1,100	2,150	465	51	24	20	17
8	------	392	745	678	678	1,180	3,360	2,450	415	61	23	13	16
9	------	301	612	678	678	820	2,150	2,050	348	83	19	14	15
10	------	245	465	710	612	745	1,500	1,680	301	820	17	8.2	13
11	------	203	440	1,020	550	612	1,340	1,420	269	1,260	17	10	14
12	------	140	465	1,180	520	520	1,340	1,180	234	645	19	6.4	14
13	------	115	465	1,420	520	580	1,260	940	242	415	24	5.2	18
14	------	124	550	1,340	465	710	1,420	820	214	321	28	21	21
15	------	113	645	1,260	520	678	1,340	710	249	238	33	44	10
16	------	115	645	1,100	465	550	1,180	580	245	197	57	35	16
17	------	105	710	860	392	550	1,020	492	220	165	69	39	17
18	------	97	9,180	860	370	612	1,100	492	194	171	49	46	18
19	------	102	4,350	1,500	317	612	1,770	465	257	143	38	51	16
20	------	110	2,450	1,500	317	612	1,770	415	249	113	30	35	13
21	------	108	1,770	1,340	492	550	1,420	392	207	92	23	28	15
22	------	1,860	1,260	1,100	520	645	1,180	392	174	74	17	23	8.8
23	------	2,550	940	940	520	745	940	348	143	61	23	32	8.2
24	------	1,340	820	780	465	1,180	745	325	132	69	19	25	8.2
25	------	900	710	550	348	1,500	645	313	129	53	15	18	12
26	25	612	710	550	261	1,590	612	301	110	53	12	24	8.8
27	23	465	580	550	261	1,340	492	253	102	85	25	20	7.6
28	25	348	678	745	325	1,020	440	220	97	78	28	28	6.4
29	25	321	860	1,860	370	------	415	214	102	78	19	28	6.4
30	29	370	745	1,420	370	------	415	269	95	57	13	18	7.6
31	------	710	------	1,260	370	------	392	------	90	------	9.4	16	------

Daily and monthly discharge, in second-feet, of Greenbrier River at Buckeye, W. Va., 1929–1931—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	8.8	17	49	217	465	348	1,590	710	550	149	118	465
2	7.0	18	44	187	370	1,420	2,050	612	492	135	297	301
3	8.2	16	39	174	325	1,180	1,500	550	370	155	2,350	313
4	7.0	17	71	180	234	860	5,500	492	309	325	745	297
5	8.2	20	71	220	301	710	4,350	370	297	325	1,770	281
6	7.0	19	113	1,500	210	550	2,750	370	301	249	645	231
7	9.4	17	242	1,260	220	465	2,050	370	392	309	370	152
8	9.4	13	415	710	180	415	1,770	1,950	678	277	289	149
9	8.8	13	220	492	465	520	2,750	1,500	678	217	220	129
10	10	16	132	415	3,150	440	2,650	1,180	520	325	190	113
11	9.4	19	124	325	1,590	392	2,650	940	370	780	180	76
12	8.8	25	108	289	900	348	2,250	900	392	612	207	80
13	9.4	28	74	253	710	370	1,680	820	370	415	214	149
14	9.4	26	87	194	820	820	1,340	940	440	301	203	165
15	18	26	65	180	820	2,450	1,100	1,020	900	234	177	152
16	13	29	59	155	745	2,350	940	1,020	2,850	187	138	108
17	15	29	47	124	820	1,500	745	900	1,500	162	115	76
18	15	32	46	124	1,580	1,100	612	860	860	132	118	87
19	18	29	46	100	1,500	1,020	520	1,180	612	285	87	100
20	11	26	53	234	1,260	1,020	465	780	440	197	80	90
21	14	25	61	223	1,340	860	392	3,690	370	168	190	155
22	10	24	49	211	745	860	465	2,550	492	293	1,420	220
23	12	19	46	199	580	820	1,340	4,680	392	257	2,650	152
24	18	17	47	187	492	1,180	1,420	2,950	465	465	1,500	135
25	18	19	49	200	415	1,500	1,340	2,150	440	465	820	210
26	13	21	57	348	348	1,860	1,420	1,680	370	301	580	234
27	13	15	207	940	309	1,500	1,680	1,340	305	231	550	1,100
28	12	20	165	1,680	253	1,590	1,500	1,020	261	200	465	580
29	14	12	257	1,100	-------	4,460	1,260	780	220	184	550	492
30	13	13	277	710	-------	2,650	940	612	177	152	745	305
31	17	-------	238	645	-------	1,770	-------	550	-------	143	550	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
1929–30				1930–31			
October	3,800	28	742	October	18	7.0	11.8
November	9,180	440	1,480	November	32	12	20.7
December	1,860	550	966	December	415	39	115
January	1,260	261	577	January	1,680	100	444
February	2,650	325	910	February	3,150	180	755
March	3,360	392	1,070	March	4,460	348	1,200
April	2,450	214	738	April	5,500	392	1,700
May	465	90	224	May	4,680	370	1,270
June	1,260	44	191	June	2,850	177	560
July	69	9.4	27.8	July	780	132	278
August	51	5.2	21.5	August	2,650	80	598
September	21	6.4	13.5	September	1,100	76	237
The year	9,180	5.2	577	The year	5,500	7.0	598

GREENBRIER RIVER AT ALDERSON, W. VA.

LOCATION.—Water-stage recorder 400 feet above highway bridge at Alderson, Monroe County, and half a mile above mouth of Muddy Creek. Zero of gage is 1,528.97 feet above mean sea level.

DRAINAGE AREA.—1,340 square miles.

RECORDS AVAILABLE.—July, 1895, to June, 1906; May, 1907, to September, 1931.

EXTREMES.—Maximum discharge during year, 16,100 second-feet Apr. 5 (gage height, 8.40 feet); minimum, 26 second-feet Oct. 1, 2 (gage height, 1.65 feet).

1895–1931: Maximum discharge, about 60,000 second-feet Mar. 13, 14, 1918 (gage height, 22.0 feet); minimum, 26 second-feet Aug. 12, Oct. 1, 2, 1930 (gage height, 1.65 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	48	53	275	876	610	4,350	1,720	1,430	354	289	778
2	28	43	67	317	730	1,020	6,300	1,410	1,360	303	244	610
3	30	40	67	244	580	2,220	5,250	1,240	1,150	269	2,710	511
4	30	43	103	231	511	1,940	5,400	1,110	928	310	3,900	439
5	31	51	87	244	448	1,560	13,800	995	814	388	2,380	422
6	31	58	120	1,160	370	1,230	8,700	850	754	502	2,080	396
7	31	58	163	2,870	331	995	6,600	838	1,020	540	1,340	331
8	31	56	466	1,680	310	902	5,550	4,050	1,490	475	850	269
9	31	51	493	1,060	354	1,260	5,400	5,100	1,540	457	590	225
10	31	51	493	754	1,460	1,390	6,300	3,410	1,390	413	475	197
11	33	53	354	600	3,280	1,160	5,550	2,460	1,130	370	430	207
12	35	56	269	590	1,970	941	5,400	2,180	915	766	370	168
13	33	70	225	511	1,460	838	4,200	2,340	778	889	345	151
14	31	70	197	396	1,210	876	3,150	2,280	814	631	388	147
15	30	73	173	282	1,540	2,140	2,530	2,340	838	511	338	151
16	30	76	151	275	1,540	6,000	2,080	2,180	1,860	826	303	183
17	31	93	120	202	1,360	4,500	1,760	1,990	4,140	502	262	202
18	30	97	76	282	2,380	2,770	1,480	1,770	2,240	430	218	188
19	31	100	93	317	3,990	2,120	1,270	5,880	1,480	331	188	168
20	30	97	100	310	3,150	1,880	1,110	3,250	1,060	310	173	151
21	31	93	87	310	2,340	1,760	954	5,700	814	282	173	275
22	33	90	73	303	1,790	1,540	928	9,000	653	362	317	362
23	35	87	84	303	1,380	1,490	2,730	12,900	778	310	4,340	282
24	51	84	76	324	1,120	2,280	3,730	10,200	742	580	4,650	331
25	58	78	76	448	954	3,070	3,230	6,600	686	928	2,420	396
26	53	76	76	448	826	3,700	2,730	5,100	697	902	1,540	396
27	51	70	110	493	719	3,730	2,680	3,640	610	590	1,080	1,150
28	48	56	135	1,210	642	3,580	2,900	2,680	530	430	863	1,360
29	51	48	197	2,260	------	9,300	2,550	2,100	457	354	802	1,060
30	56	43	237	1,580	------	9,300	2,120	1,720	413	324	754	742
31	51	------	275	1,020	------	5,400	------	1,440	------	282	928	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	58	28	36.6	0.027	0.03
November	100	40	67.0	.050	.06
December	493	53	171	.128	.15
January	2,870	202	687	.513	.59
February	3,990	310	1,340	1.00	1.04
March	9,300	610	2,630	1.96	2.26
April	13,800	928	4,020	3.00	3.35
May	12,900	838	3,500	2.61	3.01
June	4,140	413	1,120	.836	.93
July	928	269	481	.359	.41
August	4,650	173	1,150	.858	.99
September	1,360	147	408	.304	.34
The year	13,800	28	1,300	.970	13.16

GAULEY RIVER AT ALLINGDALE, W. VA.

LOCATION.—Chain gage at Baltimore & Ohio Railroad bridge a quarter of a mile south of Allingdale, Nicholas County, and just below mouth of Rockcamp Creek. Zero of gage is 2,003.28 feet above mean sea level.

DRAINAGE AREA.—248 square miles.

RECORDS AVAILABLE.—July, 1908, to September, 1916; October, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,110 second-feet Apr. 4 (gage height, 7.78 feet); minimum, 1.8 second-feet Oct. 15–17 (gage height 0.58 foot).

1908–1916, 1929–1931: Maximum discharge, about 15,000 second-feet Jan. 30, 1911 (gage height, 16.1 feet, old datum); minimum, 1.4 second-feet Sept. 24, 25, 1930 (gage height, 0.54 foot).

REMARKS.—Records good except those for periods affected by backwater from lumber on control, Oct. 1 to Dec. 6, Dec. 11 to Jan. 5, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	6.9	220	105	480	405	905	508	480	90	110	415
2	9.6	7.2	302	79	352	1,040	970	400	508	92	2,210	316
3	4.5	7.2	118	81	311	808	775	375	348	620	3,450	508
4	4.2	7.2	79	103	285	620	5,220	330	294	385	1,180	620
5	4.0	8.1	75	154	222	480	2,970	281	290	303	1,340	400
6	3.5	9.0	79	2,000	193	385	1,580	245	352	245	808	298
7	3.4	28	1,180	1,000	207	362	1,180	253	464	840	508	234
8	3.0	27	535	600	218	508	1,180	872	905	415	334	182
9	2.8	17	356	508	1,580	562	2,010	742	905	303	245	150
10	2.9	17	262	410	1,660	395	2,520	535	710	405	226	118
11	2.6	17	151	350	938	366	3,960	508	508	469	281	107
12	2.3	15	220	321	710	344	2,310	535	400	269	249	118
13	1.9	13	250	303	562	480	1,500	590	308	186	742	112
14	1.9	13	190	250	1,420	480	1,340	1,420	285	153	405	83
15	1.9	13	148	156	1,000	3,330	1,080	1,420	775	110	273	72
16	1.8	20	77	153	742	2,110	905	938	1,180	92	257	65
17	1.9	17	52	218	840	1,340	680	710	775	123	218	80
18	2.8	16	95	226	1,740	905	562	970	508	107	159	90
19	8.7	16	79	281	1,830	1,110	464	2,970	352	85	253	65
20	6.0	16	71	620	1,260	1,180	390	1,340	261	85	562	62
21	8.1	16	49	430	938	938	326	3,330	535	78	3,330	190
22	8.1	18	35	410	620	905	339	1,920	464	100	3,960	162
23	6.6	16	52	294	480	872	680	3,700	458	129	4,380	146
24	7.5	14	41	237	480	840	590	2,110	425	1,420	1,740	179
25	6.3	14	28	237	415	872	742	1,340	303	620	1,000	176
26	6.0	14	52	366	380	840	938	970	234	339	775	385
27	5.8	15	87	1,040	308	775	1,420	710	200	464	562	680
28	6.6	16	285	1,500	298	1,180	1,180	535	176	281	535	650
29	7.8	12	220	938	-------	2,740	775	420	140	211	1,260	620
30	7.5	14	145	650	-------	1,500	590	334	118	153	872	420
31	6.9	-------	89	562	-------	970	-------	535	-------	115	562	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12	1.8	5.13	0.021	0.02
November	28	6.9	14.7	.059	.07
December	1,180	28	181	.730	.84
January	2,000	79	470	1.90	2.19
February	1,830	193	731	2.95	3.07
March	3,330	344	956	3.85	4.44
April	5,220	326	1,340	5.40	6.02
May	3,700	245	1,030	4.15	4.78
June	1,180	118	455	1.83	2.04
July	1,420	78	300	1.21	1.40
August	4,380	110	1,060	4.27	4.92
September	680	62	257	1.04	1.16
The year	5,220	1.8	565	2.28	30.95

GAULEY RIVER NEAR SUMMERSVILLE, W. VA.

LOCATION.—Chain gage at Brocks Bridge, 500 feet below Muddlety Creek and 2½ miles east of Summersville, Nicholas County.

DRAINAGE AREA.—686 square miles.

RECORDS AVAILABLE.—July, 1908, to September, 1916; November, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 16,700 second-feet Apr. 4 (gage height, 12.48 feet); minimum, 2.0 second-feet Oct. 17 (gage height, 0.70 foot).

1908–1916, 1928–1931: Maximum discharge, about 38,000 second-feet Oct. 2, 1929 (gage height, 18.29 feet); minimum, 1.3 second-feet Aug. 10, 1930 (gage height, 0.64 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.6	16	56	344	1,240	950	2,630	1,240	1,090	179	226	950
2	4.7	16	670	344	1,020	2,520	3,070	950	1,160	130	3,670	615
3	17	15	412	297	820	3,190	2,420	950	820	327	8,560	950
4	16	15	282	327	730	1,830	11,200	790	640	590	2,960	1,480
5	15	17	327	360	565	1,400	8,320	730	520	344	2,740	950
6	12	16	199	6,300	520	1,090	5,280	565	670	226	1,920	700
7	9.8	16	2,120	3,190	520	950	3,800	640	1,160	880	1,650	540
8	9.1	18	1,240	1,740	1,160	1,320	3,670	3,190	2,020	700	730	430
9	8.6	19	670	1,240	4,060	1,480	4,640	2,630	1,920	482	500	360
10	7.8	44	520	1,020	4,960	1,160	6,850	2,020	1,560	700	482	282
11	7.7	34	378	700	3,070	1,020	10,100	1,650	1,160	950	730	268
12	7.6	32	378	820	2,420	950	6,120	1,480	880	640	700	268
13	3.8	29	615	700	1,560	820	4,340	1,830	670	430	1,740	297
14	3.4	29	500	520	2,740	1,320	3,430	4,340	820	344	1,160	240
15	4.0	27	395	500	3,070	7,040	2,740	3,430	3,800	297	730	201
16	3.4	24	327	430	2,120	5,780	2,220	2,960	3,550	465	540	240
17	3.6	22	201	430	2,120	3,310	1,650	2,220	2,120	297	500	254
18	4.7	38	201	520	4,490	2,520	1,400	1,240	1,240	312	395	254
19	5.9	41	201	670	4,640	3,070	1,160	9,570	950	240	395	240
20	4.5	37	206	1,650	3,550	3,190	950	3,800	670	130	880	177
21	2.2	35	182	1,320	2,740	2,520	820	6,120	790	226	7,240	226
22	3.2	42	136	670	2,020	2,740	760	6,480	1,090	226	10,100	378
23	3.4	42	130	618	1,400	2,630	1,650	9,570	950	448	10,400	395
24	12	38	134	565	1,240	2,850	1,560	5,780	950	2,520	4,800	640
25	16	37	119	520	1,160	2,850	1,830	3,930	700	1,020	2,850	465
26	16	41	128	670	1,090	2,740	2,220	2,850	500	790	2,020	950
27	15	37	e125	1,830	950	2,420	3,670	1,920	430	565	1,400	2,520
28	15	37	e200	3,670	820	3,190	2,630	1,480	378	500	1,240	1,480
29	15	37	e700	2,420	-------	6,660	2,120	1,090	327	412	2,520	1,560
30	15	37	500	1,740	-------	4,200	1,560	880	254	327	2,020	1,020
31	15	-------	327	1,400	-------	2,850	--------	1,020	-------	254	1,240	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17	2.2	9.19	0.013	0.01
November	44	15	29.6	.043	.05
December	2,120	56	406	.592	.68
January	6,300	297	1,210	1.76	2.03
February	4,960	520	2,030	2.96	3.08
March	7,040	820	2,600	3.79	4.37
April	11,200	760	3,490	5.09	5.68
May	9,570	565	2,820	4.11	4.74
June	3,800	254	1,130	1.65	1.84
July	2,520	130	515	.751	.87
August	10,400	226	2,480	3.62	4.17
September	2,520	177	644	.939	1.05
The year	11,200	2.2	1,440	2.10	28.57

e Estimated.

GAULEY RIVER ABOVE BELVA, W. VA.

LOCATION.—Water-stage recorder half a mile above Belva, Nicholas County, and 1 mile above mouth of Twentymile Creek. Zero of gage is 669.0 feet above mean sea level.

DRAINAGE AREA.—1,340 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 28,000 second-feet Aug. 21 (gage height, 12.55 feet); minimum, 4.2 second-feet Oct. 11 (gage height, 0.11 foot). 1929–1931: Maximum gage height, 20.3 feet Oct. 2, 1929 (discharge not determined); minimum discharge, that of Oct. 11, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	4.8	38	440	1,740	1,300	6,510	2,120	1,690	380	464	1,630
2	9.2	4.6	38	446	1,410	2,630	6,750	1,740	1,790	320	1,550	1,240
3	7.2	4.6	355	356	1,140	3,480	5,570	1,590	1,610	278	8,720	1,160
4	6.4	6.0	350	335	992	2,950	13,000	1,440	1,260	766	6,750	1,890
5	5.6	13	264	392	875	2,330	17,700	1,230	1,180	750	4,560	1,730
6	5.4	13	255	4,700	758	1,830	10,500	1,080	1,410	686	4,050	1,220
7	5.0	12	589	5,800	678	1,560	8,540	1,070	1,450	750	2,710	947
8	4.6	12	1,600	2,950	734	1,660	7,250	3,180	2,560	1,350	1,770	750
9	4.8	13	1,150	2,050	2,430	2,480	8,020	5,570	3,390	902	1,200	614
10	4.8	14	758	1,590	7,500	2,400	9,630	4,150	2,870	790	866	506
11	4.4	14	551	1,230	5,110	1,980	12,200	3,210	2,190	1,030	848	428
12	5.0	15	452	1,020	3,390	1,790	10,800	2,630	1,650	1,180	1,010	404
13	8.8	16	488	1,040	2,560	1,620	7,250	3,300	1,290	814	1,710	464
14	9.2	31	642	893	2,710	2,330	5,460	6,030	1,140	586	2,480	452
15	8.8	35	537	635	4,460	9,500	4,250	7,250	4,140	458	1,550	368
16	8.4	33	410	628	3,390	11,000	3,390	5,460	6,030	422	1,080	335
17	8.8	33	340	452	3,040	7,000	2,710	4,050	4,560	544	848	434
18	9.2	31	242	572	5,800	5,000	2,190	3,040	2,790	482	710	586
19	8.4	30	210	750	7,250	4,670	1,800	7,410	1,920	410	579	518
20	7.6	28	250	1,430	6,030	5,110	1,530	6,510	1,360	335	579	428
21	7.2	26	246	2,190	4,460	4,460	1,310	8,020	1,710	386	16,800	482
22	6.4	27	210	1,430	3,210	4,050	1,280	8,810	1,550	386	20,100	830
23	6.0	33	156	1,180	2,480	4,890	2,330	15,100	1,420	392	19,000	782
24	7.2	32	142	1,070	2,050	5,110	2,950	11,200	1,350	1,290	10,300	1,110
25	6.0	31	149	884	1,830	5,220	3,040	7,500	1,210	3,120	5,800	1,200
26	5.6	35	136	798	1,670	5,110	3,300	5,460	902	1,690	3,960	1,300
27	5.4	38	142	1,170	1,480	4,460	4,560	3,760	702	1,160	2,790	4,560
28	5.4	37	237	3,670	1,300	5,000	4,360	2,790	579	1,010	2,120	3,390
29	5.4	35	884	3,470	-------	9,910	3,390	2,120	512	790	2,330	2,790
30	5.2	36	766	2,560	-------	8,810	2,630	1,670	452	579	3,390	2,050
31	4.8	-------	600	1,980	-------	6,030	-------	1,500	-------	464	2,260	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11	4.4	6.68	0.005	0.006
November	38	4.6	23.1	.017	.02
December	1,600	38	425	.317	.37
January	5,800	335	1,550	1.16	1.34
February	7,500	678	2,870	2.14	2.23
March	11,000	1,300	4,380	3.27	3.77
April	17,700	1,280	5,810	4.34	4.84
May	15,100	1,070	4,520	3.37	3.88
June	6,030	452	1,890	1.41	1.57
July	3,120	278	790	.590	.68
August	20,100	464	4,290	3.20	3.69
September	4,560	335	1,150	.858	.96
The year	20,100	4.4	2,300	1.72	23.36

WILLIAMS RIVER AT DYER, W. VA.

LOCATION.—Water-stage recorder on left bank at Dyer, Webster County, half a mile below Craig Run. Zero of gage is 2,193.46 feet above mean sea level.

DRAINAGE AREA.—128 square miles.

RECORDS AVAILABLE.—September, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,440 second-feet Apr. 4 (gage height, 8.00 feet); minimum, 2.4 second-feet Oct. 14 (gage height, 0.64 foot).

1929–1931: Maximum gage height, about 12.0 feet Oct. 3, 1929 (discharge not determined); minimum discharge, 1.0 second-foot Aug. 5, 1930 (gage height 0.50 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.9	7.4	348	115	273	301	497	249	225	49	268	237
2	4.8	7.4	162	96	217	532	453	214	203	325	1,310	177
3	4.4	7.1	86	96	179	386	397	200	152	360	1,720	314
4	4.0	7.1	63	86	169	310	3,540	169	124	208	610	288
5	3.6	13	48	395	137	249	1,470	146	120	143	830	190
6	3.2	28	391	1,320	120	195	1,000	128	217	190	489	141
7	3.0	23	600	518	118	195	650	128	320	301	285	107
8	2.8	17	338	348	335	240	630	433	555	169	192	84
9	2.8	14	184	258	1,280	195	1,430	324	489	115	137	66
10	2.8	11	135	200	935	148	1,760	279	352	182	130	58
11	2.7	10	124	169	493	182	2,480	246	258	187	164	56
12	2.6	9.2	206	162	372	261	1,280	243	197	122	132	70
13	2.6	10	162	132	307	179	935	240	152	86	273	48
14	2.5	14	124	103	705	214	765	497	195	66	167	40
15	2.8	17	93	103	473	1,400	635	575	380	53	124	36
16	6.2	15	78	111	372	865	505	425	635	49	184	41
17	11	14	70	150	445	510	400	344	366	65	124	52
18	9.2	14	72	107	865	429	330	445	246	47	89	39
19	12	16	60	135	835	575	279	600	174	44	182	34
20	11	16	49	222	600	505	234	445	130	42	288	48
21	8.4	14	58	155	433	404	200	1,550	433	39	1,590	157
22	7.4	14	55	135	324	481	258	1,080	264	46	2,470	75
23	6.5	12	44	137	273	408	383	1,890	228	119	2,050	59
24	6.8	12	32	118	237	422	320	1,000	203	798	830	70
25	6.8	12	34	130	217	453	437	678	148	288	493	56
26	8.4	12	47	330	195	425	650	481	111	195	376	388
27	8.0	12	243	865	167	376	765	358	103	341	320	338
28	7.4	12	190	900	157	960	505	276	87	172	394	390
29	7.1	13	132	532	-------	1,630	390	214	68	124	935	288
30	7.1	14	105	386	-------	765	304	179	54	86	505	200
31	7.1	-------	98	348	-------	514	-------	203	-------	65	334	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12	2.5	5.84	0.046	0.05
November	28	7.1	13.2	.103	.11
December	600	32	143	1.12	1.29
January	1,320	86	286	2.23	2.57
February	1,280	118	401	3.13	3.26
March	1,630	148	474	3.70	4.27
April	3,540	200	796	6.22	6.94
May	1,890	128	459	3.59	4.14
June	635	54	240	1.88	2.10
July	798	39	164	1.28	1.48
August	2,470	89	580	4.53	5.22
September	390	34	138	1.08	1.20
The year	3,540	25	308	2.41	32.63

CHERRY RIVER AT FENWICK, W. VA.

LOCATION.—Chain gage at highway bridge at Fenwick, Nicholas County, 1,000 feet below mouth of Laurel Creek.

DRAINAGE AREA.—150 square miles.

RECORDS AVAILABLE.—September, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,960 second-feet Apr. 4 (gage height, 9.44 feet); minimum, 0.3 second-foot Oct. 10, 14 (gage height, 2.70 feet).

1929–1931: Maximum gage height, 12.04 feet Oct. 2, 1929 (discharge not determined); minimum discharge, 0.1 second-foot Sept. 22, 1930 (gage height, 2.62 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.4	123	90	300	710	680	340	300	34	77	194
2	.7	1.2	84	45	256	1,000	560	280	250	109	1,080	148
3	.5	1.4	40	77	211	530	1,160	246	228	155	2,490	228
4	.8	1.8	27	75	190	430	4,680	236	187	84	1,610	222
5	.8	2.6	20	405	117	320	2,290	184	152	75	745	125
6	.4	2.2	405	1,990	99	260	1,700	166	172	88	430	97
7	.8	2.6	455	780	138	340	960	228	320	115	320	93
8	1.2	2.8	54	480	360	430	920	1,160	505	86	280	74
9	.5	3.6	218	250	1,890	340	1,790	780	430	88	280	55
10	.3	3.2	84	211	1,340	280	2,390	710	340	181	256	45
11	.6	3.4	72	175	680	222	2,600	455	300	184	222	71
12	.6	3.2	190	190	530	166	2,290	430	197	125	242	81
13	.8	4.7	117	160	360	155	1,430	560	225	88	300	63
14	.5	6.7	101	84	480	256	1,000	1,520	620	74	197	36
15	.5	5.8	66	71	815	1,610	815	1,250	1,520	208	129	34
16	.5	6.4	32	23	405	1,000	710	780	1,000	99	95	64
17	1.1	7.6	40	125	530	650	680	710	560	72	74	109
18	1.7	5.5	47	99	1,080	560	360	1,120	360	77	60	82
19	1.1	6.7	41	138	1,120	780	300	1,160	250	46	84	60
20	.7	7.3	33	300	745	710	253	1,250	190	55	320	34
21	.7	5.8	22	155	530	560	232	1,990	239	50	1,340	36
22	.8	7.0	19	81	430	620	260	2,090	218	43	1,430	50
23	.7	7.0	23	91	340	530	430	2,930	178	42	2,190	39
24	1.2	5.5	20	125	320	650	430	1,700	160	320	1,120	66
25	1.8	5.8	17	181	300	850	530	1,120	105	150	680	101
26	1.4	7.0	155	320	246	710	780	680	88	88	505	480
27	1.4	7.6	360	745	228	680	745	530	69	75	360	505
28	1.8	7.9	211	960	320	1,520	710	480	58	66	360	430
29	1.8	7.6	150	680	-------	2,090	560	380	50	54	480	340
30	2.0	11	99	505	-------	1,160	280	246	46	42	380	250
31	1.7	-------	63	405	-------	780	-------	280	-------	26	260	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.0	0.3	0.97	0.0065	0.007
November	11	1.2	5.08	.034	.04
December	455	17	109	.727	.84
January	1,990	23	323	2.15	2.48
February	1,890	99	513	3.42	3.56
March	2,090	155	674	4.49	5.18
April	4,680	232	1,080	7.20	8.03
May	2,930	166	838	5.59	6.44
June	1,520	46	311	2.07	2.31
July	320	26	96.7	.645	.74
August	2,490	60	593	3.95	4.55
September	505	34	140	.933	1.04
The year	4,680	.3	390	2.60	35.22

CRANBERRY RIVER AT WOODBINE, W. VA.

LOCATION.—Staff gage at Woodbine, Nicholas County, 1 mile above junction with Gauley River.
DRAINAGE AREA.—91 square miles.
RECORDS AVAILABLE.—October, 1929, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 2,340 second-feet Apr. 4, 11 (gage height, 6.50 feet); minimum, 0.1 second-foot Oct. 14.
1929–1931: Maximum discharge, 3,720 second-feet Nov. 18, 1929 (gage height, 8.25 feet); no flow Sept. 22–25, 1930.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	2.0	59	66	202	288	380	202	178	22	105	137
2	1.0	2.0	86	45	166	380	380	178	178	23	558	105
3	1.0	2.0	37	53	156	288	288	178	156	40	960	137
4	.8	2.2	19	56	128	240	2,260	156	106	38	340	146
5	.8	2.6	18	58	120	202	1,380	137	95	28	322	98
6	.5	3.1	16	1,800	105	156	820	120	90	28	240	73
7	.5	7.1	380	475	98	156	558	128	92	137	128	56
8	.4	5.0	190	240	128	215	502	558	305	65	83	41
9	.4	5.0	105	156	1,100	190	890	360	240	93	59	34
10	.3	4.8	79	137	730	156	1,380	288	178	120	69	25
11	.3	4.2	71	98	402	137	2,100	255	146	128	137	31
12	.2	3.8	146	120	288	128	1,030	255	120	78	112	62
13	.2	4.4	120	105	240	120	790	288	95	50	288	38
14	.1	4.1	80	88	530	166	670	530	270	34	146	26
15	.3	4.6	59	77	380	1,100	558	475	1,170	66	112	18
16	.3	6.3	31	69	288	670	425	360	640	71	98	18
17	.6	6.0	20	128	360	425	322	288	340	45	71	20
18	.8	5.6	39	95	730	340	255	240	228	29	50	19
19	.5	6.4	38	105	790	450	215	322	156	24	48	14
20	.3	8.2	35	166	502	402	190	255	112	77	50	12
21	.3	7.2	21	120	360	322	156	1,100	112	47	760	17
22	.2	6.8	13	85	255	380	156	730	93	47	1,030	15
23	.8	6.1	22	80	228	340	270	1,380	120	47	1,240	15
24	1.5	5.6	17	71	190	450	240	960	120	960	585	18
25	1.6	5.4	16	72	178	380	305	558	88	2o5	305	22
26	1.6	5.8	23	137	166	340	380	402	66	137	255	42
27	1.6	5.3	37	450	137	305	640	322	52	128	178	190
28	1.8	5.1	146	670	128	585	425	228	45	92	190	137
29	2.0	4.4	120	402	------	1,380	322	178	35	61	585	112
30	2.0	5.4	71	322	------	670	255	137	27	44	340	94
31	2.0	------	38	255	------	402	------	166	------	31	215	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.0	0.1	0.84	0.0092	0.01
November	8.2	2.0	4.88	.054	.06
December	380	13	69.4	.763	.88
January	1,800	45	219	2.41	2.78
February	1,100	98	324	3.56	3.71
March	1,380	120	379	4.16	4.80
April	2,260	156	618	6.79	7.58
May	1,380	120	379	4.16	4.80
June	1,170	27	188	2.07	2.31
July	960	22	98.2	1.08	1.24
August	1,240	48	312	3.43	3.95
September	190	12	59.1	.649	.72
The year	2,260	.1	220	2.42	32.84

MEADOW RIVER AT NALLEN, W. VA.

LOCATION.—Chain gage at highway bridge at Nallen, Fayette County.
DRAINAGE AREA.—297 square miles.
RECORDS AVAILABLE.—July, 1908, to September, 1916; November, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 3,970 second-feet Apr. 4 (gage height, 10.70 feet); no flow Oct. 1–23, Oct. 27 to Nov. 5.
1908–1916, 1928–1931: Maximum discharge, about 7,300 second-feet Feb. 3, 1915 (gage height 13.25 feet); practically no flow at times in 1930.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	4.6	69	308	237	1,350	375	340	35	179	190
2	0	0	4.6	40	237	530	1,460	324	340	29	141	150
3	0	0	6.4	45	179	610	1,200	278	278	50	2,940	190
4	0	0	25	40	150	510	3,610	250	212	88	1,980	200
5	0	0	26	56	108	410	3,520	212	308	70	1,840	159
6	0	.1	23	1,300	100	324	2,700	190	392	83	1,460	116
7	0	.1	54	1,100	124	293	1,910	179	375	132	1,010	94
8	0	.1	141	740	132	392	1,580	1,060	450	124	570	66
9	0	.1	100	530	324	550	1,910	1,350	470	169	375	54
10	0	.2	61	375	1,250	400	1,840	1,100	430	159	200	48
11	0	.2	45	212	965	350	2,140	875	324	179	212	44
12	0	.2	40	190	650	320	1,910	650	237	159	200	73
13	0	.2	35	159	510	300	1,350	740	190	73	530	37
14	0	.2	40	124	510	570	1,010	1,100	179	49	410	33
15	0	.2	37	108	650	1,770	785	1,150	490	34	308	33
16	0	.2	30	88	610	1,910	570	875	1,200	23	212	70
17	0	.3	24	88	650	965	430	695	610	33	132	150
18	0	.4	23	100	920	1,150	358	570	570	37	108	169
19	0	.4	21	141	1,200	1,010	308	610	324	32	88	108
20	0	.3	17	324	1,060	965	250	1,060	224	66	250	132
21	0	.3	15	358	830	830	212	1,640	179	52	1,520	610
22	0	.3	16	308	650	830	212	1,770	141	48	1,400	430
23	0	.3	18	224	490	785	570	3,180	124	78	2,380	278
24	.1	.4	13	141	392	965	740	2,300	179	250	1,640	324
25	.1	.4	12	100	358	1,150	740	1,520	132	430	1,150	308
26	.1	.5	12	150	308	1,100	695	1,150	100	308	785	470
27	0	.6	24	293	250	1,010	740	875	79	190	530	1,520
28	0	.7	94	650	224	1,150	695	650	63	150	375	1,400
29	0	.9	159	610	-------	2,700	570	430	54	88	308	830
30	0	1.4	104	490	-------	2,300	470	358	47	72	278	610
31	0	-------	83	392	-------	1,580	-------	358	-------	66	237	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.1	0	0.01	0.000034	0.0004
November	1.4	0	.30	.0010	.001
December	159	4.6	42.2	.142	.16
January	1,300	40	308	1.04	1.20
February	1,250	100	505	1.70	1.77
March	2,700	237	902	3.04	3.50
April	3,610	212	1,190	4.01	4.47
May	3,180	179	899	3.03	3.49
June	1,200	47	301	1.01	1.13
July	430	23	108	.364	.42
August	2,940	88	766	2.58	2.97
September	1,520	33	297	1.00	1.12
The year	3,610	0	443	1.49	20.23

ELK RIVER AT WEBSTER SPRINGS, W. VA.

LOCATION.—Chain gage at West Virginia Midland Railway bridge half a mile west of Webster Springs, Webster County, and a quarter of a mile below Back Fork.

DRAINAGE AREA.—242 square miles.

RECORDS AVAILABLE.—October, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,890 second-feet Apr. 4 (gage height, 6.47 feet); minimum, 1.6 second-feet Oct. 15 (gage height, 0.08 foot).

1929–1931: Maximum gage height, about 9.0 feet Oct. 2, 1929 (discharge not determined); minimum discharge, 1.4 second-feet Sept. 23–25, 1930 (gage height, 0.06 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.4	4.4	110	147	1,320	570	1,010	510	480	74	114	420
2	3.4	4.4	246	176	1,320	930	1,230	420	450	67	600	292
3	3.5	3.7	169	365	740	775	930	480	350	112	970	302
4	3.2	4.4	82	340	279	670	5,820	420	279	262	810	320
5	3.2	4.8	57	315	246	540	2,620	392	315	190	600	246
6	2.9	5.2	64	2,020	190	420	1,760	340	420	186	420	172
7	2.9	5.6	600	1,140	183	360	1,320	340	570	450	246	144
8	2.4	5.6	570	740	230	480	1,050	930	1,420	274	166	97
9	2.1	6.0	335	600	1,140	450	1,880	930	1,230	166	144	92
10	2.1	5.8	210	365	1,530	392	1,760	740	890	279	350	77
11	2.1	5.2	218	254	1,050	365	3,120	600	635	570	510	67
12	2.0	5.2	230	242	810	320	1,880	600	480	315	325	183
13	1.8	5.8	250	270	600	355	1,320	635	360	198	510	94
14	1.8	6.0	186	222	1,230	480	1,050	1,530	297	144	392	67
15	1.6	7.0	152	202	970	2,460	810	1,420	670	110	274	61
16	1.7	6.0	112	198	775	1,640	670	1,050	1,140	92	190	72
17	2.0	6.0	133	306	705	1,050	540	850	600	112	144	74
18	2.7	8.0	103	176	1,760	890	450	1,230	420	70	121	62
19	3.4	8.0	70	279	2,020	1,010	365	2,160	306	48	155	57
20	5.6	8.5	72	540	1,420	1,050	310	1,320	206	43	600	56
21	4.8	6.0	74	450	930	890	258	3,470	315	62	2,950	119
22	4.2	7.0	61	365	740	930	302	2,020	270	119	3,120	119
23	3.8	8.5	46	350	600	850	740	3,470	279	230	3,470	123
24	3.9	7.0	27	306	540	810	670	2,780	242	1,050	1,640	288
25	3.9	6.0	27	284	510	890	970	1,420	183	540	1,050	254
26	3.8	11	59	510	420	930	1,140	1,050	155	279	850	206
27	3.8	13	392	1,140	365	890	1,760	775	162	176	600	1,010
28	4.2	12	510	1,420	306	1,230	1,050	540	162	128	540	1,140
29	4.4	10	335	1,140	-------	2,780	850	420	119	97	810	810
30	3.8	16	320	705	-------	1,420	600	350	94	72	740	510
31	4.8	-------	152	600	-------	1,140	-------	450	-------	61	540	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5.6	1.6	3.23	0.013	0.01
November	16	3.7	7.07	.029	.03
December	600	27	193	.798	.92
January	2,020	147	522	2.16	2.49
February	2,020	183	819	3.38	3.52
March	2,780	320	902	3.73	4.30
April	5,820	258	1,270	5.25	5.86
May	3,470	340	1,090	4.50	5.19
June	1,420	94	450	1.86	2.08
July	1,050	43	212	.876	1.01
August	3,470	114	773	3.19	3.68
September	1,140	56	251	1.04	1.16
The year	5,820	1.6	539	2.23	30.25

ELK RIVER AT QUEEN SHOALS, W. VA.

LOCATION.—Chain gage at highway bridge at Queen Shoals, Kanawha County Queen Shoals Creek enters on left just below bridge and above the control.

DRAINAGE AREA.—1,140 square miles, including Queen Shoals Creek.

RECORDS AVAILABLE.—November, 1928, to September, 1931. Also June, 1908, to September, 1916, at Clendennin, 5 miles downstream.

EXTREMES—Maximum discharge during year, about 26,100 second-feet Aug. 22 (gage height, 14.86 feet); minimum, 1.0 second-foot Oct. 20–22 (gage height, 2.20 feet).

1908–1916, 1928–1931: Maximum discharge, about 68,000 second-feet Oct. 3, 1929 (gage height, 22.34 feet); minimum, that of Oct. 20–22, 1930.

REMARKS.—Records good except those for Aug. 22. Discharge interpolated Feb. 8, July 12, Aug. 30. Records include flow of Queen Shoals Creek.

Daily and monthly discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	3.5	20	430	975	1,010	8,250	1,870	1,750	490	330	1,640
2	6.2	2.8	21	240	870	1,040	7,070	1,480	1,530	460	310	2,110
3	6.2	2.4	23	226	730	3,180	5,760	1,530	1,330	350	350	1,120
4	7.4	2.4	24	200	590	2,890	6,410	1,480	1,160	270	1,080	1,430
5	8.0	2.0	24	226	460	2,230	12,000	1,480	1,010	255	2,620	1,530
6	7.1	2.2	200	310	375	1,640	7,070	1,330	940	460	1,750	1,160
7	6.5	2.2	200	3,830	330	1,380	7,750	1,280	1,120	730	1,160	1,010
8	4.8	1.9	150	2,620	365	1,990	7,070	2,750	1,280	1,080	870	800
9	2.5	1.9	150	1,430	400	2,890	5,140	4,010	3,660	1,010	835	520
10	1.6	2.0	695	1,240	1,580	2,750	4,550	3,340	3,030	1,040	730	400
11	1.4	2.0	520	940	3,660	2,230	4,940	2,620	2,350	3,500	625	330
12	2.5	2.0	350	800	2,230	1,870	6,410	2,230	1,530	2,500	460	240
13	2.2	2.4	240	625	1,870	1,750	4,940	2,230	1,120	1,530	1,040	255
14	2.0	2.8	200	695	1,990	2,480	3,500	3,830	1,080	1,010	1,750	765
15	2.4	2.5	213	730	3,340	9,900	2,620	7,520	1,040	765	1,330	695
16	2.2	3.0	255	375	3,180	9,600	2,110	5,340	2,110	520	975	590
17	2.4	3.5	226	330	2,230	5,970	1,640	3,340	2,110	430	730	460
18	2.4	6.2	187	310	3,500	4,010	1,430	2,480	1,380	625	520	375
19	1.4	8.3	162	310	5,550	3,030	1,200	2,110	1,080	590	400	330
20	1.0	11	128	375	6,190	3,030	1,040	4,550	905	520	330	270
21	1.0	13	106	660	3,830	3,180	940	5,760	800	375	3,030	226
22	1.0	17	109	1,120	2,480	3,030	870	6,850	800	330	24,900	200
23	1.3	15	109	765	1,990	3,500	1,530	5,970	975	330	10,500	187
24	2.0	15	100	625	1,580	3,340	2,230	7,290	1,200	2,230	8,500	330
25	3.8	14	85	625	1,380	3,030	2,230	5,340	1,200	4,010	4,740	590
26	3.2	15	76	555	1,240	2,890	2,480	3,500	1,010	4,190	3,660	905
27	3.2	17	102	490	1,120	3,030	3,180	2,480	730	1,640	2,480	2,110
28	3.8	17	174	460	1,010	3,660	3,500	1,870	695	1,010	1,750	2,750
29	4.0	18	290	1,870	-------	3,660	3,030	1,430	625	765	1,580	2,230
30	3.5	17	800	1,530	-------	4,740	2,350	1,080	520	520	2,030	2,480
31	3.5	-------	400	1,160	-------	3,340	--------	975	-------	400	2,480	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8.0	1.0	3.46	0.0030	0.003
November	18	1.9	7.50	.0066	.007
December	800	20	204	.179	.21
January	3,830	200	842	.739	.85
February	6,190	330	1,970	1.73	1.80
March	9,900	1,010	3,300	2.89	3.33
April	12,000	870	4,110	3.61	4.03
May	7,520	975	3,200	2.81	3.24
June	3,660	520	1,340	1.18	1.32
July	4,190	255	1,090	.956	1.10
August	24,900	310	2,700	2.37	2.73
September	2,750	187	935	.820	.91
The year	24,900	1.0	1,640	1.44	19.53

COAL RIVER AT ASHFORD, W. VA.[1]

LOCATION.—Chain gage at highway bridge at Ashford, Boone County.
DRAINAGE AREA.—395 square miles.
RECORDS AVAILABLE.—May, 1930, to September, 1931. June, 1908, to September, 1916, at site 1 mile upstream.
EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 6,860 second-feet Apr. 1 (gage height, 8.78 feet); no flow Oct. 6–12, 1930.
1908–1916, 1930–31: Maximum discharge, about 40,700 second-feet Aug. 9, 1916 (gage height 36.3 feet at former site); no flow Sept. 18–21, 24, Oct. 6–12, 1930.
REMARKS.—Records good.

Daily discharge, in second-feet, 1930–31

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1930						1930—Con.					
1	-------	52	6.4	17	4.4	16	e 130	11	1.5	13	.2
2	-------	44	7.0	10	4.0	17	e 120	31	1.5	10	.1
3	-------	41	5.3	8.2	3.5	18	e 200	46	1.5	8.2	0
4	-------	38	4.4	8.2	2.8	19	e 300	36	1.5	7.0	0
5	-------	32	2.8	e 7.6	2.8	20	e 400	24	1.0	5.3	0
6	-------	34	2.8	7.0	2.0	21	e 350	19	1.0	9.6	0
7	139	35	2.8	5.8	1.5	22	e 250	15	1.0	24	.1
8	120	30	5.3	14	1.0	23	e 200	12	2.0	47	.1
9	100	24	4.8	10	.6	24	e 170	9.6	2.0	41	0
10	80	26	4.0	5.8	.6	25	e 150	8.2	2.2	26	.5
11	70	e 24	3.5	3.5	.3	26	e 125	8.2	2.5	20	1.5
12	e 75	24	2.0	12	.3	27	e 100	7.0	4.4	15	2.0
13	e 70	21	2.5	12	.3	28	85	7.0	26	10	2.0
14	e 90	19	2.0	18	.3	29	66	5.3	38	8.2	1.5
15	e 140	14	2.0	17	.5	30	68	4.4	31	7.0	1.0
						31	61	-------	24	7.0	-------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	0.5	3.1	5.8	29	29	145	4,230	432	204	18	30	83
2	.3	3.5	9.6	28	29	206	3,260	379	204	16	114	62
3	.2	4.0	13	24	26	320	2,230	329	161	16	85	90
4	.1	3.5	12	21	24	335	4,780	278	124	12	83	111
5	.1	4.0	13	42	23	300	3,360	235	119	35	68	92
6	0	4.4	17	465	18	222	2,230	211	106	41	72	70
7	0	4.8	20	600	18	199	3,790	230	96	94	60	56
8	0	4.8	20	305	25	498	2,740	292	133	76	44	41
9	0	4.8	26	178	129	705	1,830	310	190	149	37	33
10	0	5.8	22	132	600	670	1,230	310	170	55	44	27
11	0	4.4	22	102	498	600	1,930	301	144	48	37	25
12	0	4.4	21	90	320	465	1,930	320	109	48	44	22
13	.2	4.4	20	83	226	600	1,230	460	96	35	158	21
14	.2	4.4	20	83	234	1,080	915	2,230	92	25	117	15
15	.2	4.8	17	90	530	5,550	715	2,030	99	31	92	15
16	.5	5.8	14	70	435	2,740	555	1,230	251	22	58	33
17	1.2	5.8	10	70	435	1,430	449	880	292	16	46	50
18	1.0	12	12	83	920	845	374	650	190	31	34	48
19	.8	14	9.6	85	1,000	670	310	496	135	31	27	34
20	.6	11	10	85	810	530	264	410	101	50	25	64
21	.6	10	10	85	600	405	230	525	111	43	555	41
22	1.0	9.6	8.9	79	405	498	427	455	92	58	2,030	33
23	1.7	9.6	7.6	56	325	1,630	1,140	400	60	147	1,020	31
24	3.1	6.4	7.6	59	255	1,230	1,060	585	50	305	1,060	55
25	1.2	6.4	7.0	56	210	1,130	845	618	40	339	427	41
26	2.0	5.8	10	50	178	920	780	585	34	190	358	152
27	3.5	4.0	15	46	142	670	780	555	28	122	222	251
28	4.4	4.0	30	44	129	1,830	748	410	27	87	155	170
29	4.0	4.0	38	38	-------	3,160	650	287	24	66	144	124
30	3.1	4.8	46	31	-------	1,830	525	251	20	48	122	80
31	4.0	-------	34	28	-------	1,080	-------	204	-------	37	109	-------

e Estimated.

[1] Formerly published as Coal River at Brushton, W. Va.

Monthly discharge, in second-feet, of Coal River at Ashford, W. Va., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
May 7–31	400	61	146	0.370	0.34
June	52	4.4	23.4	.059	.07
July	38	1.0	6.41	.016	.02
August	47	3.5	13.4	.034	.04
September	4.4	0	1.13	.0029	.003
1930–31					
October	4.4	0	1.11	.0028	.003
November	14	3.1	5.94	.015	.02
December	38	5.8	16.7	.042	.05
January	600	21	104	.263	.30
February	1,000	18	306	.775	.81
March	5,550	145	1,050	2.66	3.07
April	4,780	230	1,520	3.85	4.30
May	2,230	204	545	1.38	1.59
June	292	20	117	.296	.33
July	339	12	73.9	.187	.22
August	2,030	25	241	.610	.70
September	251	15	65.7	.166	.19
The year	5,550	0	336	.851	11.58

COAL RIVER AT TORNADO, W. VA.

LOCATION.—Chain gage at highway bridge at Upper Falls, a quarter of a mile above Tornado, Putnam County. Gage is at same site and datum as used 1908–1912.

DRAINAGE AREA.—857 square miles.

RECORDS AVAILABLE.—June, 1908, to June, 1912; November, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 16,000 second-feet Mar. 15 (gage height, 10.04 feet); minimum (estimated), 2.0 second-feet during part of October.

1908–1912, 1928–1931: Maximum discharge, 33,500 second-feet Nov. 18, 1929 (gage height, 16.30 feet); minimum, that of October, 1930.

REMARKS.—Records fair.

Daily discharge, in second-feet, 1928–1931

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29											
1	-------	13,400	590	885	5,050	1,350	1,460	630	e 630	177	8.6
2	-------	3,680	750	840	3,320	1,240	1,950	590	2,980	131	7.6
3	-------	1,700	1,130	670	2,800	1,130	10,000	550	1,970	131	7.0
4	-------	1,460	1,130	670	2,640	1,030	4,440	630	642	159	6.6
5	-------	1,240	1,030	710	9,320	1,950	2,800	710	440	202	6.6
6	-------	1,080	1,030	930	19,900	2,350	2,640	710	333	189	6.6
7	-------	930	1,030	2,080	11,200	1,820	3,140	670	225	122	6.6
8	-------	840	750	2,210	4,050	1,460	3,860	590	210	90	12
9	-------	750	930	1,950	2,490	1,350	2,800	e 400	159	80	37
10	-------	670	2,490	1,820	1,700	1,240	1,580	e 500	127	53	31
11	-------	630	3,680	1,700	1,350	1,080	1,460	e 400	153	53	27
12	-------	590	2,490	1,350	1,180	980	1,130	e 300	177	114	23
13	-------	590	1,820	1,130	1,080	840	1,080	e 330	575	90	21
14	-------	590	1,180	1,030	980	750	1,460	e 630	755	72	17
15	-------	670	1,240	885	1,080	750	1,820	e 720	1,170	64	15
16	-------	630	1,080	840	1,130	670	1,240	e 620	800	55	15
17	-------	670	980	750	1,180	930	1,030	e 530	430	29	19
18	-------	750	930	670	1,130	1,080	885	e 400	240	24	48
19	-------	1,350	1,460	630	1,080	1,030	3,860	e 370	171	20	43
20	-------	1,030	2,210	670	1,080	930	5,470	e 250	93	18	24
21	2,210	1,350	1,950	670	1,030	930	6,790	e 230	62	13	17
22	1,460	980	1,950	795	980	1,240	3,680	e 220	32	13	13
23	1,180	885	1,950	750	4,440	1,580	2,210	e 220	26	13	9.6
24	885	795	2,210	840	13,700	1,580	1,580	e 250	22	11	8.8
25	750	710	2,970	1,580	4,240	1,460	1,240	e 320	19	15	7.4
26	710	630	3,140	15,700	2,490	1,350	1,180	e 300	21	16	7.2
27	630	590	2,490	17,800	2,490	1,180	1,240	e 400	114	14	6.8
28	630	550	2,080	5,680	2,210	1,180	1,030	e 280	360	14	6.8
29	590	550	1,460	-------	1,700	1,460	750	e 320	288	13	7.8
30	2,490	550	1,180	-------	1,700	1,580	795	e 540	218	10	8.6
31	-------	550	1,030	-------	1,460	-------	670	-------	218	9	-------

e Estimated.

Daily discharge, in second-feet, of Coal River at Tornado, W. Va., 1928–1931—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1929–30												
1	14	1,100	288	1,760	1,070	876	800	232	75	20	17	
2	262	845	460	1,370	988	924	845	195	67	17	17	
3	4,260	3,550	472	1,460	924	845	1,280	195	64	16	16	
4	1,760	6,200	410	2,630	1,280	770	2,300	240	57	15	15	
5	1,120	2,300	400	2,300	6,200	710	2,410	333	57	13	13	
6	602	1,280	410	1,860	5,460	683	1,970	279	60	13	12	[a] 14
7	440	940	483	1,560	3,320	924	2,080	248	57	11	11	
8	333	670	656	1,280	2,190	4,260	2,190	210	57	9.4	12	
9	255	518	956	1,070	1,560	5,460	1,860	183	49	8.6	14	
10	202	450	1,040	830	1,370	4,260	1,460	177	43	8.0	15	
11	177	390	956	800	1,190	3,550	1,190	153	44	7.6	16	
12	153	370	830	683	1,050	3,550	1,050	135	38	7.0	16	
13	135	370	740	642	1,560	2,860	924	135	35	7.4	15	
14	141	430	642	602	3,320	2,080	800	135	29	7.2	16	
15	131	450	575	552	2,980	1,660	725	183	28	7.0	17	
16	114	629	552	540	2,190	1,370	656	225	27	6.6	17	[a] 4.0
17	106	3,200	552	529	1,860	1,160	588	195	28	6.2	18	
18	101	29,300	564	440	1,660	1,160	494	297	48	6.2	19	
19	97	11,100	860	342	1,460	1,760	506	400	110	5.8	19	
20	93	3,200	2,410	333	1,280	2,190	440	529	90	5.8	18	
21	101	1,860	1,760	410	1,120	1,970	430	575	65	5.4	18	
22	177	1,280	1,280	380	1,050	1,760	370	440	44	5.2	20	
23	279	1,020	1,020	440	988	1,370	342	360	45	5.0	58	
24	370	860	1,020	306	1,050	1,280	306	288	39	4.6	101	
25	315	725	845	380	1,120	1,190	324	202	34	4.6	70	
26	262	616	755	390	1,170	1,280	279	183	31	4.6	53	[a] 3.0
27	218	575	876	518	1,090	1,280	270	131	29	5.2	46	
28	177	602	2,860	1,190	956	1,120	270	118	26	5.0	42	
29	183	518	5,220	1,660	-------	1,040	270	106	21	4.4	35	
30	202	410	3,550	1,760	-------	972	248	93	20	12	28	
31	755	-------	2,300	1,460	-------	892	-------	85	-------	15	24	-------
1930–31												
1		6.0	20	82	90	430	8,720	940	410	30	90	183
2		6.0	16	46	83	494	6,950	800	400	19	72	171
3		5.8	15	40	79	696	4,740	740	324	14	159	232
4		5.9	18	57	72	815	8,980	616	255	22	410	297
5		7.1	30	87	72	656	9,500	518	218	11	360	262
6	[a] 2.0	6.4	30	342	72	564	4,260	450	210	90	324	183
7		8.8	62	1,140	64	642	6,700	483	177	108	225	159
8		7.1	71	656	79	972	5,220	683	202	147	195	135
9		8.1	71	460	270	1,760	3,780	683	333	165	165	94
10		7.3	76	279	1,020	1,660	2,520	710	315	225	171	[a] 75
11		7.4	87	248	1,070	1,280	3,200	683	248	141	147	[a] 60
12		7.7	76	232	740	1,170	4,260	656	195	94	130	[a] 50
13		7.9	57	189	529	1,370	2,860	940	165	86	183	[a] 40
14		8.4	52	189	588	1,970	1,970	3,550	159	72	262	[a] 40
15	[a] 2.5	8.7	46	202	940	11,300	1,460	4,260	153	46	225	[a] 40
16		9.3	40	112	956	6,200	1,140	2,520	315	104	159	[a] 60
17		9.9	33	153	972	2,980	924	1,760	400	57	117	[a] 80
18		11	30	195	1,560	1,860	770	1,370	297	104	99	[a] 75
19		11	33	189	1,970	1,460	656	924	232	159	68	68
20		18	30	165	1,560	1,190	575	815	177	126	60	94
21		20	20	153	1,170	988	430	1,120	248	141	240	108
22		20	18	153	860	1,020	1,280	1,070	147	165	2,630	83
23		16	15	153	696	2,300	3,550	1,040	117	450	2,410	112
24		12	15	126	540	2,630	2,740	1,040	94	552	1,760	94
25		12	14	153	494	2,410	1,970	1,170	75	588	1,040	112
26	[a] 4.5	13	16	130	430	1,860	1,760	1,120	68	460	552	529
27		12	[a] 40	130	360	1,460	1,860	988	48	306	656	755
28		14	71	122	324	2,410	1,660	785	42	195	518	450
29		14	108	117	-------	6,450	1,460	642	39	153	324	333
30		13	119	86	-------	4,020	1,140	472	35	126	279	183
31		-------	119	90	-------	2,520	-------	420	-------	108	232	-------

[a] Estimated.

Monthly discharge, in second-feet, of Coal River at Tornado, W. Va., 1928–1931

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1928–29					
November 21–30	2,490	590	1,150	1.34	0.50
December	13,400	550	1,340	1.56	1.80
January	3,680	590	1,620	1.89	2.18
February	17,800	630	2,370	2.77	2.88
March	19,900	980	3,550	4.14	4.77
April	2,350	670	1,250	1.46	1.63
May	10,000	670	2,430	2.84	3.27
June	720	220	454	.530	.59
July	2,980	19	441	.515	.59
August	202	9	65.0	.076	.09
September	48	6.6	15.8	.018	.02
1929–30					
October	4,260	14	437	0.510	0.59
November	29,300	370	2,530	2.95	3.29
December	5,220	288	1,150	1.34	1.54
January	2,630	306	983	1.15	1.33
February	6,200	924	1,840	2.15	2.24
March	5,460	683	1,780	2.08	2.40
April	2,410	248	923	1.08	1.20
May	575	85	234	.273	.31
June	110	20	47.2	.055	.06
July	20	4.4	8.67	.010	.01
August	101	11	26.1	.030	.03
September			7.00	.0082	.009
The year	29,300		821	.958	13.01
1930–31					
October			3.05	0.0036	0.004
November	20	5.8	10.5	.012	.01
December	119	14	46.7	.054	.06
January	1,140	40	209	.244	.28
February	1,970	64	631	.736	.77
March	11,300	430	2,180	2.54	2.93
April	9,500	430	3,230	3.77	4.21
May	4,260	420	1,100	1.28	1.48
June	410	35	203	.237	.26
July	588	11	163	.190	.22
August	2,630	60	460	.537	.62
September	755	40	172	.201	.22
The year	11,300		699	.816	11.06

LITTLE COAL RIVER AT MADISON, W. VA.

LOCATION.—Chain gage at lower highway bridge at Madison, Boone County.
RECORDS AVAILABLE.—May, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 4,660 second-feet Mar. 15 (gage height, 7.10 feet); no flow Oct. 4–14.
1930–31: Maximum discharge, that of Mar. 15, 1931; no flow part of July to October, 1930.
REMARKS.—Records fair. Discharge estimated Aug. 24 to Oct. 19, 1930; Aug. 30, 31, Sept. 1, 3–5, 1931.

Daily discharge, in second-feet, 1930–31

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1930						1930					
1		23	1.4	0	1.5	16	63	78	.6	2.7	0
2		14	2.3	0	1.0	17	58	73	.2	1.8	0
3		9.7	.6	0	.9	18	83	31	.2	1.2	0
4		9.7	.8	0	.6	19	165	19	.1	.6	0
5		15	.3	.1	.5	20	230	14	0	.6	0
6		14	1.4	.6	.4	21	211	11	.2	.8	0
7	109	12	.9	.2	.3	22	173	6.5	.6	1.2	0
8	95	13	.8	2.3	.2	23	119	4.7	.1	14	0
9	83	11	.6	2.7	.2	24	106	4.7	0	9	0
10	70	8.5	.2	2.3	.1	25	89	3.6	0	6	0
11	61	6.5	.3	2.3	.1	26	65	3.6	0	5	.1
12	68	12	.7	3.9	.1	27	53	3.3	.3	4	.5
13	53	12	1.8	3.3	.1	28	41	2.3	1.1	3	.6
14	70	19	1.8	7.0	.1	29	41	1.4	.8	2.5	.5
15	92	21	1.1	5.5	.1	30	37	.6	.3	2.5	.4
						31	29	-------	.2	2.0	-------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	0.4	2.3	6	17	17	106	2,420	255	169	6.0	13	75
2	.2	2.1	8	12	17	173	1,870	225	139	6.0	26	47
3	.1	2.1	12	12	17	275	1,430	207	122	5.1	173	55
4	0	2.1	10	21	13	230	3,750	198	106	6.0	240	65
5	0	2.1	10	70	12	198	2,140	173	83	53	202	55
6	0	2.5	18	461	12	173	1,550	158	70	198	135	47
7	0	2.1	31	260	15	169	2,420	181	165	177	106	40
8	0	2.1	31	162	24	280	1,740	211	169	129	143	32
9	0	1.8	17	135	375	615	965	186	139	113	70	30
10	0	1.8	17	97	410	525	860	220	125	95	45	24
11	0	1.8	28	75	255	396	2,560	240	92	65	26	15
12	0	2.1	24	70	202	389	1,490	225	70	35	41	10
13	0	2.5	22	75	190	615	860	245	65	19	43	8.5
14	0	3.3	17	70	235	1,020	615	1,740	70	45	26	7.0
15	.1	2.7	15	47	260	3,900	351	1,250	70	28	22	7.0
16	.2	2.7	9.7	43	275	1,550	327	860	73	12	19	6.5
17	.5	9.1	10	43	363	810	295	469	78	100	19	9.7
18	.8	3.3	9.1	43	662	570	245	351	63	58	15	8.0
19	1.0	5.1	11	47	710	417	207	280	43	22	33	7.0
20	1.6	7.5	10	49	445	351	181	250	37	14	116	6.5
21	1.8	5.1	10	61	351	345	162	194	33	16	310	5.5
22	2.3	5.1	9.1	47	315	615	710	305	24	43	930	6.5
23	1.2	5.1	7.0	37	290	1,250	1,250	351	15	119	780	6.5
24	2.3	4.7	6.0	28	211	1,080	910	351	11	165	470	89
25	2.5	4.3	7.5	28	165	810	615	357	10	162	267	26
26	3.9	4.3	9.7	28	135	485	810	327	9.7	122	307	109
27	6.5	4.3	29	29	109	389	570	295	9.1	75	258	144
28	4.7	4.7	70	31	109	1,610	369	230	8.0	43	208	99
29	3.0	5.1	68	28	-------	2,140	327	194	7.0	24	160	61
30	2.3	5.1	41	17	-------	1,190	321	169	6.0	17	132	30
31	2.3	-------	31	17	-------	760	-------	165	-------	13	104	-------

Monthly discharge, in second-feet, of Little Coal River at Madison, W. Va., 1930–31

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
1930				1930–31			
May 7–31	230	29	90.6	February	710	12	221
June	78	.6	15.2	March	3,900	106	756
July	2.3	0	.64	April	3,750	162	1,080
August	14	0	2.81	May	1,740	158	350
September	1.5	0	.28	June	169	6.0	69.4
1930–31				July	198	5.1	64.0
October	6.5	0	1.22	August	930	13	175
November	9.1	1.8	3.63	September	144	5.5	37.7
December	70	6.0	19.5	The year	3,900	0	237
January	461	12	69.7				

POCATALICO RIVER AT SISSONVILLE, W. VA.

LOCATION.—Chain gage at highway bridge at Sissonville, Kanawha County, a quarter of a mile below mouth of Grapevine Creek. Zero of gage is 594.56 feet above mean sea level.

DRAINAGE AREA.—238 square miles.

RECORDS AVAILABLE.—June, 1908, to September, 1916; May, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,060 second-feet Apr. 1 (gage height, 17.69 feet); minimum discharge, 0.2 second-foot at times during October to December (gage height, 1.31 feet).

1908–1916, 1930–31: Maximum discharge, about 17,000 second-feet June 27, 1910 (gage height, 32.42 feet, present datum); minimum, 0.1 second-foot at times during August and September, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	0.2	0.8	5.6	240	3,580	87	18	32	10	111
2	.2	.2	.2	1.0	5.0	635	3,720	82	16	74	10	30
3	.2	.2	.3	1.3	4.7	400	990	82	15	62	12	24
4	.2	.2	.5	5.3	4.5	172	635	78	14	47	6.0	23
5	.2	.4	1.0	9.3	4.5	106	535	62	15	27	62	20
6	.2	.3	1.3	158	4.0	70	360	48	13	20	46	19
7	.2	.2	1.3	300	3.4	116	320	62	46	14	32	18
8	.2	.2	1.0	210	4.5	1,050	360	180	54	10	24	14
9	.2	.2	.8	180	158	1,080	240	195	50	10	22	7.9
10	.2	.2	.6	138	485	560	188	210	41	9.3	735	6.3
11	.2	.2	.6	66	260	440	340	225	27	8.2	710	5.3
12	.2	.3	.6	24	96	300	380	195	19	7.2	440	4.5
13	.2	.5	.5	24	82	760	260	420	15	6.3	180	4.0
14	.2	.4	.4	22	225	990	165	910	15	6.0	96	3.7
15	.2	.4	.4	22	210	1,500	126	860	13	5.3	82	3.4
16	.2	.4	.4	18	121	735	111	710	10	6.6	45	4.5
17	.2	.4	.3	14	240	400	92	380	8.6	7.6	11	3.4
18	.2	.4	.2	14	685	300	74	188	7.2	7.9	13	2.2
19	.2	.4	.3	14	400	225	66	116	5.6	12	16	1.7
20	.2	.4	.4	14	320	158	50	78	4.7	13	48	1.5
21	.2	.3	.4	13	144	132	42	150	4.5	35	195	1.5
22	.2	.2	.4	12	92	121	46	92	1.9	132	785	1.3
23	.2	.2	.4	11	70	121	460	70	1.9	785	300	1.1
24	.2	.2	.4	10	47	172	300	53	1.9	535	144	1.0
25	.4	.2	.4	10	43	560	132	39	1.9	420	87	1.0
26	.3	.2	.4	9.0	37	510	635	36	1.7	165	210	785
27	.2	.2	.4	8.6	34	420	535	34	1.5	48	380	485
28	.3	.2	1.1	7.9	30	1,080	340	30	1.3	22	240	111
29	.3	.2	1.1	7.9	------	1,780	165	25	1.3	12	158	54
30	.3	.2	1.0	6.9	------	1,080	111	21	1.1	9.0	460	18
31	.3	------	1.0	6.6	------	885	------	20	------	12	218	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.4	0.2	0.22	0.00092	.001
November	.5	.2	.27	.0011	.001
December	1.3	.2	.59	.0025	.003
January	300	.8	43.2	.182	.21
February	685	3.4	136	.571	.59
March	1,780	70	552	2.32	2.68
April	3,720	42	512	2.15	2.40
May	910	20	185	.777	.90
June	54	1.1	14.2	.060	.07
July	785	5.3	82.6	.347	.40
August	785	6.0	186	.782	.90
September	785	1.0	58.9	.247	.28
The year	3,720	.2	148	.622	8.44

RACCOON CREEK BASIN

RACCOON CREEK AT ADAMSVILLE, OHIO

LOCATION.—Staff gage on line between secs. 25 and 26, T. 6 N., R. 16 W., at highway bridge at Adamsville. Zero of gage is 570.85 feet above mean sea level.
DRAINAGE AREA.—587 square miles (revised).
RECORDS AVAILABLE.—June, 1915, to September, 1931.
EXTREMES.—Maximum discharge during year, 6,000 second-feet Apr. 6 (gage height, 17.50 feet); minimum mean daily discharge, about 1.8 second-feet Oct. 7, 21–23.

1915–1931: Maximum discharge, 7,920 second-feet Apr. 21, 1920 (gage height, 21.10 feet); minimum, 1.4 second-feet Sept. 24, 1930 (gage height, 1.54 feet).

Maximum stage known, about 24.5 feet previous to installation of gage.
REMARKS.—Records poor from Oct. 1 to Feb. 22 and good thereafter.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e 6.0	e 4.0	e 20	e 16	e 20	72	1,750	552	131	67	74	122
2	e 3.6	e 3.8	e 17	e 14	18	106	2,840	462	131	61	90	106
3	e 3.6	e 3.5	15	e 13	18	141	3,200	418	122	56	74	201
4	e 2.7	e 3.2	e 14	e 12	18	182	5,150	376	98	52	67	774
5	e 2.3	e 3.2	e 13	e 20	19	141	5,450	335	131	52	82	886
6	e 2.0	e 3.0	e 12	e 100	19	118	5,950	295	376	49	82	440
7	e 1.8	e 3.0	e 19	e 45	22	174	5,650	295	174	43	82	228
8	e 2.3	e 3.0	e 60	e 30	e 30	611	4,050	529	552	43	82	165
9	e 2.1	e 3.0	e 40	e 25	e 40	567	2,070	748	1,850	39	67	122
10	e 2.0	e 5.0	e 22	21	e 50	523	655	1,240	1,240	39	148	98
11	e 1.9	7.7	e 19	22	e 50	480	701	944	506	39	67	70
12	e 2.1	9.1	e 17	e 25	e 57	438	780	748	315	39	183	74
13	e 1.9	9.1	e 16	e 30	e 150	523	655	1,240	228	39	1,170	67
14	e 1.9	8.2	e 16	e 25	e 400	545	523	1,690	315	39	800	61
15	e 1.9	8.2	e 15	e 20	e 120	567	417	1,690	257	27	506	60
16	e 1.9	8.2	e 14	e 17	e 80	523	459	1,070	440	26	335	52
17	e 2.0	e 7.4	e 13	e 15	e 140	417	278	722	335	29	174	49
18	e 1.9	e 7.4	e 12	e 13	e 280	316	260	552	210	74	114	49
19	e 1.9	e 7.4	e 11	e 14	e 200	260	242	462	140	122	98	39
20	e 1.9	e 7.4	e 11	22	e 150	242	208	376	104	148	462	39
21	e 1.8	e 7.2	e 11	22	e 120	200	200	295	98	295	599	38
22	e 1.8	e 7.2	e 11	21	e 100	182	2,930	248	98	295	697	38
23	e 1.8	e 10	e 10	20	88	157	3,750	228	85	1,170	800	37
24	e 3.0	16	e 9.0	19	83	133	3,900	201	114	2,750	376	54
25	e 2.6	18	e 9.0	19	80	166	2,840	192	122	914	257	44
26	e 2.4	19	e 25	19	77	242	1,690	183	90	418	192	800
27	e 2.3	17	e 70	e 22	68	316	1,380	228	98	257	156	552
28	e 2.0	17	e 30	e 28	61	501	1,310	257	82	156	148	335
29	e 7.0	15	e 25	e 27	-------	701	944	201	67	122	98	183
30	e 5.0	15	e 27	e 25	-------	701	697	148	67	90	201	106
31	e 4.0	-------	e 21	e 22	-------	567	-------	156	-------	82	156	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7.0	1.8	2.63	0.004	0.005
November	19	3.0	8.54	.015	.02
December	70	9.0	20.1	.034	.04
January	100	12	24.0	.041	.05
February	400	18	91.4	.156	.16
March	701	72	349	.595	.69
April	5,950	200	2,030	3.46	3.86
May	1,690	148	551	.939	1.08
June	1,850	67	286	.487	.54
July	2,750	26	246	.419	.48
August	1,170	67	272	.463	.53
September	856	37	195	.332	.37
The year	5,950	1.8	339	.578	7.82

e Estimated.

GUYANDOT RIVER BASIN

GUYANDOT RIVER AT BAILEYSVILLE, W. VA.

LOCATION.—Chain gage at highway bridge at Baileysville, Wyoming County, 1 mile below Indian Creek.

RECORDS AVAILABLE.—October, 1929, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 4,190 second-feet Apr. 1 (gage height, 11.17 feet); minimum, 0.1 second-foot Oct. 8 (gage height, 1.14 feet).

1929–1931: Maximum discharge, about 5,950 second-feet Nov. 18, 1929 (gage height, 13.64 feet); minimum, 0.1 second-foot Sept. 25, Oct. 8, 1930 (gage height, 1.14 feet).

REMARKS.—Records good except those for September, 1930, which are fair.

Daily and monthly discharge, in second-feet, 1929–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1929-30												
1	-------	435	465	660	435	435	304	122	47	11	14	8.1
2	-------	304	435	555	435	405	291	104	41	10	10	6.3
3	-------	1,380	405	695	375	360	332	98	37	6.6	8.7	5.4
4	-------	1,560	390	920	625	332	405	86	35	6.0	6.9	5.0
5	-------	880	435	880	3,100	291	625	91	32	4.8	5.2	4.6
6	-------	555	304	695	1,960	278	840	78	27	4.8	5.8	3.8
7	-------	345	332	555	1,200	332	1,960	90	35	6.6	4.8	3.8
8	-------	264	465	495	840	920	1,420	76	79	6.0	4.2	3.1
9	62	210	555	405	625	960	960	72	49	4.2	4.4	2.6
10	58	152	525	375	525	800	695	73	39	3.4	36	2.0
11	50	124	465	304	465	800	555	79	38	5.0	22	1.6
12	46	139	390	278	405	920	495	82	27	4.6	16	1.9
13	42	126	332	264	435	1,040	405	76	25	4.4	14	2.4
14	38	152	304	250	660	1,040	360	74	23	33	15	2.6
15	34	237	278	237	695	880	332	152	25	6.3	14	3.2
16	33	435	318	210	590	695	304	185	19	6.3	15	3.8
17	32	765	465	198	625	590	264	122	21	12	22	3.7
18	30	5,500	555	162	555	525	237	115	18	11	16	4.0
19	29	2,000	590	120	495	765	250	375	19	7.5	13	1.9
20	29	1,000	590	101	495	1,160	345	465	39	6.6	11	1.2
21	30	625	495	174	465	1,000	174	332	22	5.6	12	.8
22	42	465	495	198	435	800	185	237	18	4.6	40	.6
23	264	405	465	185	435	625	174	185	15	6.0	46	.2
24	162	345	390	132	525	555	141	152	12	5.6	48	.2
25	115	291	304	115	660	495	135	132	8.7	6.3	31	.2
26	93	278	332	135	920	495	137	98	10	12	22	.2
27	76	291	318	210	590	435	126	73	13	11	15	1.2
28	65	345	800	224	495	375	117	69	7.2	16	19	.6
29	65	405	1,820	390	-------	390	113	64	18	59	22	.4
30	88	345	1,200	555	-------	390	111	58	20	32	17	2.3
31	375	-------	880	465	-------	345	-------	55	-------	21	11	-------

Daily and monthly discharge, in second-feet, of Guyandot River at Baileysville, W. Va., 1929–1931—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	1.7	10	11	46	38	120	2,980	345	291	33	126	141
2	1.4	9.8	12	27	37	152	2,860	318	250	49	122	113
3	1.1	9.2	15	26	34	152	1,740	304	198	32	133	174
4	.6	10	25	24	28	152	1,600	250	152	34	90	625
5	.5	14	25	44	29	152	1,690	224	137	30	88	304
6	.2	11	26	625	29	141	1,510	224	130	49	135	185
7	.3	13	34	590	26	133	2,300	291	124	60	79	118
8	.2	14	88	304	24	264	1,820	360	185	64	66	90
9	.4	16	62	198	55	405	1,330	465	152	54	48	66
10	.3	13	48	141	435	360	960	525	128	36	48	60
11	1.2	8.0	41	106	390	304	1,560	495	109	37	39	48
12	1.0	9.8	33	93	264	332	1,600	435	85	42	54	78
13	1.4	6.6	27	101	198	375	1,120	555	79	27	94	52
14	1.7	4.4	26	111	304	730	840	1,160	82	16	111	39
15	3.5	12	26	98	625	2,560	660	1,460	185	26	65	35
16	5.8	18	23	96	495	1,690	525	1,000	525	45	42	35
17	4.4	19	19	78	435	1,000	435	730	345	47	35	47
18	4.8	19	18	73	1,040	660	360	590	210	55	22	62
19	2.9	27	18	85	1,380	525	318	465	141	84	30	47
20	2.1	38	16	82	840	435	278	375	104	64	55	37
21	1.5	31	16	80	555	345	250	435	88	93	86	26
22	.4	22	17	72	390	375	345	525	73	80	124	29
23	.5	19	16	54	304	590	800	625	60	108	278	28
24	2.3	15	12	60	264	880	800	660	59	625	360	48
25	6.6	12	10	65	198	1,080	695	590	55	555	198	80
26	8.6	13	15	59	174	840	590	800	46	278	525	98
27	9.8	8.7	17	54	141	625	555	625	37	291	345	375
28	9.2	8.7	49	55	117	3,100	495	495	45	139	198	162
29	11	13	93	53	-------	2,980	465	375	44	86	174	113
30	8.0	10	98	44	-------	1,690	405	291	36	56	332	79
31	10	-------	52	38	-------	1,040	-------	291	-------	237	237	-------

Month	Maximum	Minimum	Mean
1929–30			
October 9–31	375	29	80.8
November	5,500	124	679
December	1,820	278	519
January	920	101	359
February	3,100	375	717
March	1,160	278	627
April	1,960	111	426
May	465	55	131
June	79	7.2	27.3
July	59	3.4	10.9
August	48	4.2	17.5
September	8.1	.2	2.59

Month	Maximum	Minimum	Mean
1930–31			
October	11	.2	3.34
November	38	4.4	14.5
December	98	10	31.9
January	625	24	116
February	1,380	24	316
March	3,100	120	780
April	2,980	250	1,060
May	1,460	224	525
June	525	36	138
July	625	16	111
August	525	22	140
September	625	26	113
The year	3,100	.2	278

GUYANDOT RIVER AT MAN, W. VA.

LOCATION.—Chain gage at highway bridge at Man, Logan County, 500 feet above Buffalo Creek.
DRAINAGE AREA.—752 square miles (including Buffalo Creek).
RECORDS AVAILABLE.—December, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 14,200 second-feet Mar. 28 (gage height, 12.80 feet); minimum, 3.0 second-feet Oct. 6 (gage height, 2.32 feet). 1928–1931: Maximum discharge, 15,600 second-feet Nov. 18, 1929 (gage height, 13.37 feet); minimum, 3.0 second-feet Oct. 6, 1930 (gage height, 2.32 feet).
REMARKS.—Records good. Records include flow of Buffalo Creek.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	14	27	130	71	262	8,070	675	480	60	270	320
2	4.8	14	31	78	66	360	6,110	625	460	55	300	270
3	4.0	16	32	60	59	445	3,740	550	360	53	360	255
4	3.8	15	30	54	54	468	4,010	500	285	192	270	480
5	3.5	17	27	122	49	422	3,870	440	255	88	210	550
6	3.2	17	46	710	45	360	3,350	380	225	500	167	320
7	3.8	16	88	1,310	45	320	4,920	460	225	380	285	240
8	5.0	14	84	740	52	1,050	4,010	730	270	300	170	180
9	7.8	14	99	422	107	1,310	2,860	880	320	525	121	144
10	10	14	108	280	490	1,130	2,030	850	270	525	102	115
11	9.0	14	95	211	830	900	4,150	790	225	360	98	94
12	6.6	17	84	171	568	770	3,740	820	183	201	86	82
13	5.8	25	71	159	422	970	2,500	1,080	159	141	100	128
14	5.8	28	59	211	830	1,500	1,700	3,350	210	108	177	90
15	6.6	25	56	197	1,310	6,290	1,240	3,100	320	86	195	71
16	8.2	25	40	171	970	4,150	940	2,030	575	62	124	64
17	6.6	29	43	159	900	2,380	820	1,410	650	64	82	58
18	7.0	36	40	146	1,600	1,500	650	1,160	400	82	73	57
19	5.8	41	42	146	2,620	1,130	575	850	270	73	90	60
20	4.0	38	38	138	1,700	900	525	700	204	115	121	75
21	4.5	38	36	157	1,130	680	460	675	159	210	300	58
22	3.2	38	30	153	770	1,050	625	790	141	167	675	50
23	6.2	38	31	130	622	2,380	2,140	850	128	420	350	50
24	9.0	38	32	108	490	2,620	1,920	1,010	113	1,600	320	46
25	9.6	36	27	107	400	2,500	1,410	1,010	96	1,320	550	47
26	8.6	34	38	114	320	1,920	1,240	1,600	90	575	440	240
27	8.6	29	57	114	262	1,400	1,080	1,320	82	360	625	210
28	8.2	27	84	107	228	10,500	1,010	940	71	340	400	380
29	8.6	23	86	99	-------	7,250	880	675	69	210	360	240
30	8.6	23	148	88	-------	3,740	820	550	64	172	320	167
31	9.0	-------	130	80	-------	2,260	-------	480	-------	141	400	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10	3.2	6.48	0.0086	0.01
November	41	14	25.1	.033	.04
December	148	27	59.3	.079	.09
January	1,310	54	222	.295	.34
February	2,620	45	608	.809	.84
March	10,500	262	2,030	2.70	3.11
April	8,070	460	2,380	3.16	3.53
May	3,350	380	1,010	1.34	1.54
June	650	64	245	.326	.36
July	1,600	53	306	.407	.47
August	850	73	295	.392	.45
September	550	46	171	.227	.25
The year	10,500	3.2	612	.814	11.03

GUYANDOT RIVER AT BRANCHLAND, W. VA.

LOCATION.—Chain gage at highway bridge at Branchland, Lincoln County, 20 feet below Fourmile Creek. Zero of gage is 547.91 feet above mean sea level.
DRAINAGE AREA.—1,230 square miles.
RECORDS AVAILABLE.—July, 1915, to September, 1922; December, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 14,600 second-feet Mar. 29 (gage height, 19.99 feet); minimum, 3.6 second-feet Oct. 25 (gage height, 2.66 feet).
1915–1922, 1928–1931: Maximum gage height, 39.24 feet Jan. 29, 1918 (discharge not determined); minimum discharge, that of Oct. 25, 1930.
Maximum known stage, about 44 feet, probably in 1907.
REMARKS.—Records good. Discharge estimated Jan. 1.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	9.4	42	110	107	505	5,140	1,300	670	66	171	448
2	18	9.4	43	113	100	535	10,900	1,140	670	60	292	448
3	16	9.4	52	155	97	600	8,260	1,020	568	60	475	420
4	11	9.4	45	171	89	705	7,780	900	505	77	505	414
5	12	13	46	152	82	705	8,350	780	448	127	420	301
6	10	14	62	392	75	635	6,180	670	387	340	335	355
7	10	12	80	1,060	73	600	5,860	670	330	635	220	420
8	10	15	82	1,300	73	740	7,380	1,060	340	705	350	360
9	10	18	100	860	259	1,780	5,620	1,300	382	505	292	246
10	10	20	120	568	505	1,940	3,780	1,380	392	350	211	199
11	10	23	137	420	740	1,620	3,380	1,380	392	246	195	155
12	10	26	159	365	1,020	1,300	6,740	1,380	340	301	167	134
13	10	18	137	320	740	1,300	5,060	2,020	292	320	155	107
14	10	19	107	287	940	1,700	3,300	3,540	268	224	137	94
15	9.6	22	97	277	1,300	4,580	2,420	5,300	264	246	134	94
16	9.4	25	84	264	1,620	8,440	1,780	4,180	350	163	163	110
17	10	34	82	237	1,460	4,980	1,460	2,900	568	120	117	105
18	12	45	75	246	1,700	2,820	1,220	2,020	780	107	117	89
19	12	51	69	242	2,500	1,860	1,020	1,540	535	113	117	80
20	14	73	62	228	3,140	1,540	860	1,220	398	117	134	64
21	13	57	59	211	2,020	1,300	780	1,300	345	195	382	57
22	11	56	59	195	1,380	1,140	2,180	1,140	255	505	1,020	57
23	13	52	51	178	1,060	2,500	4,820	1,220	203	475	1,940	60
24	8.1	52	46	174	820	3,540	4,020	1,300	186	900	1,300	77
25	3.8	52	37	186	670	3,700	2,900	1,380	152	2,020	1,060	77
26	4.0	52	51	174	568	3,060	2,740	1,460	134	1,540	820	178
27	4.0	52	89	163	475	2,260	2,340	1,780	105	820	635	255
28	4.0	46	124	155	448	3,300	1,940	1,620	102	535	740	320
29	7.4	43	174	134	------	14,000	1,780	1,220	100	420	568	404
30	8.1	41	174	127	------	9,610	1,540	860	82	350	448	315
31	9.4	------	105	117	------	5,060	------	740	------	250	382	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18	3.8	10.2	0.0083	0.01
November	73	9.4	32.3	.026	.03
December	174	37	85.5	.070	.08
January	1,300	110	309	.251	.29
February	3,140	73	859	.698	.73
March	14,000	505	2,850	2.32	2.68
April	10,900	780	4,050	3.29	3.67
May	5,300	670	1,600	1.30	1.50
June	780	82	351	.285	.32
July	2,020	60	416	.338	.39
August	1,940	117	452	.367	.42
September	448	57	215	.175	.20
The year	14,000	3.8	934	.759	10.32

TWELVEPOLE CREEK BASIN

TWELVEPOLE CREEK AT WAYNE, W. VA.

LOCATION.—Chain gage at highway bridge at Wayne, Wayne County, three-quarters of a mile below confluence of East and West Forks.

DRAINAGE AREA.—291 square miles.

RECORDS AVAILABLE.—July, 1915, to September, 1922; October, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 3,680 second-feet Apr. 23 (gage height, 12.90 feet); minimum discharge, 0.1 second-foot Oct. 1–14, 17–31, Nov. 1, 2.

1915–1922, 1928–1931: Maximum stage, 21.45 feet Jan. 9, 1920 (discharge not determined); minimum discharge, 0.1 second-foot during part of September to November, 1930.

Maximum known stage, about 33 feet June 30, 1928.

REMARKS.—Records fair. Discharge estimated Oct. 1 to Nov. 17.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	2.2	30	7.6	126	1,980	290	56	4.0	10	42
2	.1	.1	2.1	25	6.2	200	1,660	243	51	3.6	22	49
3	.1	.2	2.1	19	4.0	176	1,180	243	46	2.6	18	84
4	.1	.2	2.1	15	4.0	139	1,690	208	39	2.9	34	69
5	.1	.2	2.2	18	3.3	120	1,800	176	34	23	56	44
6	.1	.2	8.0	60	4.9	90	940	153	32	60	69	34
7	.1	.2	18	107	3.5	168	616	153	29	79	160	27
8	.1	.2	33	90	5.4	368	474	368	33	47	168	22
9	.1	.2	29	60	184	474	408	368	33	26	90	20
10	.1	.2	23	49	368	388	328	496	32	24	42	17
11	.1	.2	18	42	200	328	408	408	26	15	34	15
12	.1	.2	15	36	132	290	474	474	22	9.0	30	13
13	.1	.2	11	36	101	452	408	1,180	18	7.6	309	11
14	.1	.2	9.0	35	348	452	348	1,720	16	6.2	74	9.5
15	.3	.3	9.5	34	309	664	290	970	16	18	52	8.5
16	.2	.3	10	36	200	910	234	592	16	17	34	12
17	.1	.5	9.5	21	252	568	184	452	14	12	24	8.0
18	.1	2.1	5.4	21	452	328	160	408	12	7.2	18	6.7
19	.1	2.9	4.4	21	368	271	132	290	10	4.9	16	6.7
20	.1	4.0	3.6	22	271	208	113	234	10	4.4	29	11
21	.1	6.2	3.5	21	192	160	96	290	160	37	430	5.8
22	.1	5.4	6.2	22	132	153	2,060	243	43	64	1,030	4.9
23	.1	4.4	3.3	19	107	290	2,700	226	26	153	880	4.4
24	.2	3.6	4.9	14	84	368	970	192	19	126	388	3.8
25	.1	3.3	4.0	12	74	348	616	168	12	120	208	2.9
26	.1	3.1	4.0	10	60	290	910	153	10	74	132	69
27	.1	3.5	8.5	10	52	234	910	126	8.0	42	146	60
28	.1	3.3	30	11	47	1,720	616	101	7.2	27	113	37
29	.1	2.6	47	13	------	1,940	452	79	5.8	19	96	26
30	.1	2.1	42	12	------	1,000	368	69	5.4	13	69	18
31	.1	------	43	8	------	568	-------	60	-------	9.5	52	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.3	0.1	0.11	0.00038	0.0004
November	6.2	.1	1.67	.0057	.006
December	47	2.1	13.3	.046	.05
January	107	8	30.0	.103	.12
February	452	3.3	142	.488	.51
March	1,940	90	445	1.53	1.76
April	2,700	96	784	2.69	3.00
May	1,720	60	359	1.23	1.42
June	160	5.4	28.0	.096	.11
July	153	2.6	34.1	.117	.13
August	1,030	10	156	.536	.62
September	84	2.9	24.7	.085	.09
The year	2,700	.1	168	.577	7.82

BIG SANDY RIVER BASIN

LEVISA FORK AT PAINTSVILLE, KY.

LOCATION.—Chain gage at highway bridge at Paintsville, Johnson County, 700 feet below mouth of Paint Creek.
DRAINAGE AREA.—2,150 square miles.
RECORDS AVAILABLE.—December, 1928, to September, 1931. June, 1915, to November, 1920, at Thelma, 2 miles downstream.
EXTREMES.—Maximum discharge during year, 16,400 second-feet Apr. 23 (gage height, 19.02 feet); minimum, 8.8 second-feet Oct. 17 (gage height, 1.18 feet). 1915–1920, 1929–1931: Maximum discharge, about 69,000 second-feet Jan. 29, 1918; minimum, 8.4 second-feet July 23–25, 1930.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	14	109	470	160	550	5,100	1,980	1,010	178	760	760
2	15	14	103	350	148	550	5,700	1,700	1,910	148	1,130	610
3	14	14	85	239	136	610	6,000	1,490	2,290	136	1,700	590
4	13	16	75	295	134	760	7,450	1,310	1,490	158	1,370	1,310
5	12	18	83	260	123	760	8,000	1,130	1,070	370	2,210	3,140
6	11	18	115	278	121	710	6,400	1,010	860	295	1,250	1,560
7	9.5	19	146	2,530	121	660	5,800	960	710	1,980	1,490	1,010
8	11	20	195	2,530	121	1,250	9,650	1,190	610	2,210	1,130	710
9	11	20	370	1,560	160	1,560	7,340	1,630	610	3,320	1,130	550
10	10	19	470	1,130	610	2,370	4,700	2,370	660	1,700	960	450
11	9.5	20	410	860	910	2,050	4,700	2,210	590	1,490	610	370
12	10	22	330	710	960	1,700	8,660	2,290	510	1,130	570	295
13	9.5	31	260	590	810	1,430	7,230	2,780	430	760	1,310	254
14	9.5	38	233	530	760	1,310	4,500	4,130	370	550	1,310	295
15	10	41	203	490	1,070	1,490	3,230	5,400	430	760	1,190	242
16	9.2	50	176	390	1,840	1,490	2,370	4,400	530	450	810	212
17	8.8	65	160	350	1,700	1,910	1,910	3,060	510	330	590	184
18	9.5	90	148	312	1,910	1,630	1,490	2,370	710	330	530	163
19	9.5	130	134	295	2,370	1,310	1,310	1,980	530	260	410	150
20	9.5	186	125	330	2,870	1,070	1,130	1,630	390	209	910	176
21	9.5	209	115	312	2,290	960	1,010	1,430	295	295	3,500	168
22	9.5	209	113	295	1,630	1,010	9,760	1,490	251	710	8,990	189
23	11	176	107	260	1,250	2,290	15,800	1,430	251	910	9,760	186
24	12	150	103	236	1,010	2,960	12,500	1,370	189	7,560	6,100	160
25	12	134	87	212	860	2,780	6,700	1,370	170	8,440	2,690	139
26	12	121	107	189	710	2,530	4,800	1,370	224	3,410	1,700	186
27	11	107	136	195	635	2,130	4,130	1,700	257	2,050	1,310	370
28	12	95	134	197	550	6,800	3,320	2,050	206	1,250	1,130	450
29	12	87	181	195	-------	14,600	2,780	1,700	200	860	910	312
30	10	97	530	186	-------	11,000	2,290	1,310	203	660	760	278
31	11	-------	590	176	-------	6,100	-------	1,190	-------	510	760	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17	8.8	11.0	0.0051	0.006
November	209	14	74.3	.035	.04
December	590	75	198	.092	.11
January	2,530	176	547	.254	.29
February	2,870	121	927	.431	.45
March	14,600	550	2,530	1.18	1.36
April	15,800	1,010	5,530	2.57	2.87
May	5,400	960	1,980	.921	1.06
June	2,290	170	616	.287	.32
July	8,440	136	1,400	.651	.75
August	9,760	410	1,900	.884	1.02
September	3,140	139	516	.240	.27
The year	15,800	8.8	1,350	.628	8.55

RUSSELL FORK AT HAYSI, VA.

LOCATION.—Chain gage at highway bridge at Haysi, Dickenson County, 500 feet below mouth of McClure River.
DRAINAGE AREA.—286 square miles.
RECORDS AVAILABLE.—July, 1926, to September, 1931.
EXTREMES.—Maximum discharge during year, 5,520 second-feet July 23 (gage height, 8.02 feet); minimum, 1 second-foot Oct. 15 (gage height, 1.32 feet).
1926–1931: Maximum discharge, 21,600 second-feet Mar. 23, 1929 (gage height, 17.96 feet); minimum, 0.8 second-foot July 13, 15, 1930 (gage height, 1.28 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	2	3	16	94	18	68	616	242	1,380	17	64	70
2	2	3	20	76	17	78	677	251	646	14	89	68
3	2	3	19	48	16	66	557	194	370	14	616	557
4	2	3	19	60	14	66	740	150	246	80	222	446
5	2	6	20	280	15	60	840	129	176	150	156	230
6	2	7	40	875	16	57	910	116	132	280	234	141
7	2	5	194	446	16	60	2,050	166	144	806	242	100
8	2	4	124	302	19	246	1,210	446	184	557	150	78
9	2	4	84	210	31	347	708	347	129	272	84	59
10	2	3	72	144	100	280	472	472	103	395	132	48
11	2	3	62	113	87	206	1,650	500	94	255	98	138
12	2	5	46	113	76	180	980	446	64	108	238	76
13	2	19	39	100	74	159	646	1,050	57	129	446	49
14	2	20	35	82	141	144	472	980	57	121	238	42
15	2	24	31	80	218	150	347	740	113	163	141	30
16	3	23	21	74	218	153	267	528	302	80	89	51
17	3	28	22	60	214	141	202	395	132	72	66	46
18	2	66	24	64	347	135	206	347	82	40	51	28
19	2	74	29	68	528	129	147	230	59	60	43	51
20	2	43	31	60	370	116	127	187	45	48	59	39
21	2	33	22	45	302	98	116	191	38	147	2,050	25
22	1	25	18	35	180	118	1,290	141	35	528	528	19
23	2	20	15	24	147	230	1,950	159	70	3,660	1,050	18
24	3	24	11	20	135	324	910	121	121	806	446	20
25	2	21	9	22	108	324	616	153	100	1,130	280	18
26	4	17	9	20	91	280	500	302	62	420	226	24
27	4	19	10	36	74	246	446	324	28	242	162	87
28	4	15	230	33	64	1,380	370	238	33	153	127	45
29	4	13	169	29	-------	1,290	302	169	24	110	169	32
30	3	11	100	24	-------	740	238	127	20	82	138	22
31	3	-------	113	19	-------	500	-------	446	-------	82	96	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4	1	2.4	0.0084	0.01
November	74	3	18.1	.063	.07
December	230	9	53.4	.187	.22
January	875	19	118	.413	.48
February	528	14	130	.455	.47
March	1,380	57	270	.944	1.09
April	2,050	116	685	2.40	2.68
May	1,050	116	332	1.16	1.34
June	1,380	20	168	.587	.65
July	3,660	14	354	1.24	1.43
August	2,050	43	282	.986	1.14
September	557	18	88.6	.310	.35
The year	3,660	1	209	.731	9.93

POUND RIVER NEAR HAYSI, VA.

LOCATION.—Chain gage at suspension footbridge 4 miles west of Haysi, Dickenson County.

DRAINAGE AREA.—217 square miles.

RECORDS AVAILABLE.—July, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,840 second-feet Apr. 22 (gage height, 6.50 feet); minimum, 0.5 second-foot Oct. 8 (gage height, 0.50 foot). 1926–1931: Maximum gage height, 16.50 feet Mar. 23, 1929 (discharge not determined); minimum discharge, 0.5 second-foot July 9, 10, 16, Oct. 8, 1930 (gage height, 0.50 foot).

REMARKS.—Records good. Discharge estimated Dec. 1, 2, Jan. 15. Discharge of Twin Branch, which enters 50 feet below gage, included in records.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	3	10	44	20	56	622	198	315	13	44	69
2	2.1	2.4	10	23	19	104	622	185	299	11	48	53
3	2.1	5	12	26	16	82	516	172	225	10	476	383
4	2.0	6	14	24	17	83	712	141	158	7	185	457
5	1.8	8	18	27	14	69	666	112	116	12	118	239
6	1.6	8	26	537	14	64	666	102	83	61	139	158
7	1.6	8	51	537	14	69	1,280	122	82	95	283	112
8	.9	10	66	198	16	120	712	438	80	212	239	71
9	4	9	44	141	31	162	579	332	75	104	124	52
10	4	7	34	95	54	137	383	332	56	153	141	42
11	4	10	30	82	106	124	974	283	44	83	160	35
12	2.6	14	26	74	90	116	1,090	290	35	42	198	29
13	3	20	24	69	74	110	579	622	30	29	239	24
14	3	19	22	57	198	90	401	622	33	28	155	21
15	6	19	17	54	198	104	283	476	137	30	88	17
16	10	19	16	51	348	101	185	348	198	45	61	24
17	4	24	14	45	198	88	172	268	92	30	47	26
18	3	24	12	39	268	75	158	212	66	22	38	20
19	2.8	23	14	44	366	72	118	283	37	22	30	22
20	2.4	19	12	40	268	68	101	137	29	22	39	39
21	2.4	17	16	34	198	58	85	158	22	34	760	22
22	2.7	16	16	27	160	56	1,150	130	20	760	1,090	17
23	4	14	12	30	124	198	1,720	146	17	864	974	13
24	6	12	12	30	93	253	760	148	39	383	476	5
25	6	11	14	30	77	239	516	137	26	366	225	4
26	5	11	14	27	66	198	401	383	22	283	172	16
27	5	11	18	28	53	172	348	438	19	160	126	24
28	6	11	108	24	51	1,090	315	283	18	88	97	20
29	5	12	92	24	------	1,350	332	185	15	58	158	20
30	4	12	62	21	------	1,090	253	146	14	53	172	15
31	5	------	52	17	------	419	------	173	------	56	95	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10	0.9	3.71	0.017	0.02
November	24	2.4	12.8	.059	.07
December	108	10	28.6	.132	.15
January	537	17	80.6	.371	.43
February	366	14	113	.521	.54
March	1,350	56	226	1.04	1.20
April	1,720	85	557	2.57	2.87
May	622	102	258	1.19	1.37
June	315	14	80.1	.369	.41
July	864	7	133	.613	.71
August	1,090	30	232	1.07	1.23
September	457	4	68.3	.315	.35
The year	1,720	.9	149	.687	9.35

TUG FORK AT LITWAR, W. VA.

LOCATION.—Chain gage at highway bridge at Litwar, McDowell County.
RECORDS AVAILABLE.—May, 1930, to September, 1931.
EXTREMES.—1930–31: Maximum discharge, about 4,820 second-feet Apr. 1, 1931 (gage height, 9.18 feet); minimum, 11 second-feet Oct. 3, 4, 7, 1930 (gage height, 1.30 feet).
REMARKS.—Records good.

Daily discharge, in second-feet, 1930–31

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1930						1930					
1	-------	86	37	34	26	16	150	98	67	48	18
2	-------	86	37	31	22	17	148	90	53	42	18
3	-------	84	35	37	20	18	148	80	45	35	17
4	-------	75	34	26	19	19	390	69	30	35	15
5	-------	72	34	24	18	20	600	67	29	32	14
6	-------	79	32	20	20	21	390	64	26	40	14
7	-------	110	30	25	22	22	290	58	25	75	14
8	139	94	27	43	24	23	213	42	27	162	14
9	133	98	26	55	24	24	182	38	30	98	14
10	131	90	25	69	23	25	141	36	32	63	16
11	131	69	24	69	22	26	133	34	31	49	16
12	139	69	24	53	20	27	126	106	32	44	16
13	135	67	24	42	20	28	122	29	106	38	17
14	148	64	32	46	22	29	124	115	105	47	18
15	152	90	57	52	20	30	129	142	45	38	14
						31	101	-------	39	34	-------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	12	24	35	98	32	124	2,720	755	285	59	106	65
2	13	24	32	76	34	113	2,560	650	272	79	99	70
3	11	25	30	62	34	103	1,850	578	225	76	260	300
4	11	26	33	65	35	120	1,570	390	196	76	285	445
5	12	27	36	75	34	162	1,160	320	177	72	300	248
6	12	29	39	532	31	182	1,430	290	168	77	345	138
7	11	30	52	465	32	202	3,820	305	196	84	124	99
8	11	28	63	425	35	213	2,990	465	206	90	114	92
9	18	26	88	372	67	236	2,640	488	206	95	79	72
10	20	24	80	372	98	260	1,780	445	149	96	62	51
11	20	23	64	260	119	248	1,640	445	149	88	58	45
12	18	23	59	192	115	236	1,160	532	131	65	127	44
13	18	24	52	172	152	224	1,040	408	108	62	158	40
14	13	24	47	141	248	224	920	1,850	119	56	119	40
15	13	27	43	119	408	202	810	1,430	129	45	100	40
16	18	32	45	98	445	213	810	850	149	44	67	42
17	15	42	42	80	445	224	700	530	135	42	64	42
18	14	49	37	80	465	224	600	445	117	235	74	40
19	14	62	34	83	650	224	555	330	111	177	74	42
20	14	69	32	89	578	236	445	285	100	108	65	37
21	14	59	32	83	445	260	320	272	103	168	82	34
22	16	51	32	69	320	260	555	260	100	215	92	32
23	16	51	33	61	260	260	1,640	285	89	215	105	57
24	20	53	34	51	236	275	1,360	360	73	285	108	59
25	25	49	32	47	213	372	1,220	485	72	272	105	67
26	26	44	31	45	182	465	1,290	580	68	114	109	95
27	21	37	34	42	148	810	1,220	465	65	99	103	215
28	23	37	40	42	131	2,810	980	428	64	96	79	215
29	21	37	53	38	-------	3,350	865	375	54	77	66	215
30	21	37	75	35	-------	1,640	700	285	56	85	63	196
31	23	-------	117	31	-------	1,160	-------	285	-------	100	65	-------

Monthly discharge, in second-feet, of Tug Fork at Litwar, W. Va., 1930–31

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
1930				1930–31			
May 8–31	600	101	187	February	650	31	214
June	142	29	76.7	March	3,350	103	504
July	106	24	38.7	April	3,820	320	1,380
August	162	20	48.6	May	1,850	260	512
September	26	14	18.6	June	285	54	136
1930–31				July	285	42	111
October	26	11	16.6	August	345	58	118
November	69	23	36.4	September	445	32	106
December	117	30	47.0				
January	532	31	142	The year	3,820	11	276

TUG FORK AT KERMIT, W. VA.

LOCATION.—Chain gage at Kermit, Mingo County, 2 miles above mouth of Marrowbone Creek. Zero of gage is 574.57 feet above mean sea level.

DRAINAGE AREA.—1,240 square miles.

RECORDS AVAILABLE.—June, 1915, to December, 1920; December, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,200 second-feet Mar. 28 (gage height, 18.0 feet); minimum, 14 second-feet Oct. 22 (gage height, 2.43 feet).

1915–1920; 1928–1931: Maximum discharge, about 51,400 second-feet Jan. 29, 1918 (gage height, 39.0 feet, present datum); minimum, that of Oct. 22, 1930.

Highest known stage, 46.9 feet, present datum.

REMARKS.—Records fair. Discharge estimated because of ice effect Nov. 27–30.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	30	65	165	102	310	3,590	1,320	710	98	250	380
2	22	28	65	188	95	345	6,840	1,210	710	93	280	310
3	22	26	60	165	93	380	5,240	1,100	685	86	835	345
4	22	25	60	172	88	400	6,480	935	528	710	420	835
5	18	31	88	155	85	400	5,490	835	440	400	735	1,040
6	17	34	98	595	81	362	4,520	735	400	990	420	618
7	16	31	158	1,480	81	362	5,490	735	362	1,710	550	362
8	17	30	175	1,100	83	572	6,750	990	400	1,260	362	265
9	18	29	188	685	130	1,950	4,920	1,430	380	760	328	220
10	19	29	190	482	482	1,770	3,380	1,430	380	618	280	182
11	18	29	188	362	710	1,320	4,360	1,320	328	640	250	155
12	21	36	162	328	550	1,040	5,400	1,210	280	380	235	136
13	21	44	140	295	420	885	4,040	1,480	265	280	235	126
14	21	62	124	265	595	935	3,030	3,730	265	220	295	114
15	22	66	112	220	1,100	2,370	2,430	4,200	328	185	310	112
16	24	68	98	172	1,100	2,490	1,890	3,030	310	162	265	108
17	26	78	81	190	990	2,370	1,600	2,370	420	124	205	112
18	24	118	83	235	1,430	1,710	1,320	2,010	420	112	172	102
19	22	132	76	190	2,010	1,260	1,160	1,650	295	120	160	100
20	18	118	74	190	1,830	990	1,040	1,320	235	145	505	128
21	16	106	69	190	1,320	785	935	1,650	185	835	2,010	106
22	16	148	73	168	885	1,100	2,670	1,320	175	835	2,610	93
23	14	108	73	152	662	2,610	5,320	1,320	175	885	2,490	93
24	17	92	95	142	550	2,850	4,360	1,320	158	3,520	1,210	92
25	21	81	90	134	460	2,610	3,100	1,380	134	2,550	785	83
26	23	74	93	122	400	2,130	2,670	1,710	120	1,320	572	158
27	22	70	122	130	345	1,650	2,370	1,650	114	785	482	550
28	25	70	172	136	310	5,670	2,070	1,320	108	572	440	235
29	28	70	205	124	-------	10,200	1,710	1,040	106	420	362	295
30	28	70	220	120	-------	5,940	1,480	885	100	345	328	250
31	32	-------	185	110	-------	3,660	-------	735	-------	295	345	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	32	14	21.1	0.017	0.02
November	148	25	64.4	.052	.06
December	220	60	119	.096	.11
January	1,480	110	296	.239	.28
February	2,010	81	607	.490	.51
March	10,200	310	1,980	1.60	1.84
April	6,840	935	3,520	2.84	3.17
May	4,200	735	1,530	1.23	1.42
June	710	100	317	.256	.29
July	3,520	86	692	.558	.64
August	2,610	160	604	.487	.56
September	1,040	83	257	.207	.23
The year	10,200	14	834	.673	9.13

SCIOTO RIVER BASIN

SCIOTO RIVER AT LARUE, OHIO

LOCATION.—Water-stage recorder 200 feet below highway bridge just below Cleveland, Cincinnati, Chicago & St. Louis Railway bridge at Larue, Marion County. Zero of gage is 910.19 feet above mean sea level.

DRAINAGE AREA.—255 square miles.

RECORDS AVAILABLE.—August, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,940 second-feet Apr. 4 (gage height, 10.92 feet); minimum, 4 second-feet Aug. 8–10 (gage height, 2.10 feet).

1926–1931: Maximum discharge, 10,700 second-feet Mar. 20, 1927 (gage height, 15.0 feet); minimum, 3 second-feet Aug. 4, 5, 1930 (gage height, 2.06 feet).

REMARKS.—Records good except those for estimated periods, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8	14	26	e 8	41	44	255	114	22	79	5	14
2	8	12	39	9	35	40	498	102	20	44	5	28
3	6	8	39	10	28	36	1,244	86	17	27	5	90
4	6	8	27	11	28	35	1,800	72	16	20	5	54
5	6	9	23	21	25	36	1,080	64	16	17	5	208
6	5	8	24	89	22	32	540	58	18	93	4	202
7	5	8	27	e 94	29	30	310	58	100	80	4	83
8	22	8	30	e 68	58	66	217	54	157	33	4	47
9	58	8	28	e 50	75	176	166	50	86	19	4	28
10	41	8	23	e 36	e 64	e 139	139	50	47	14	14	20
11	25	8	20	e 30	e 44	e 102	139	50	32	11	14	16
12	18	10	20	e 26	e 41	e 98	130	47	23	9	12	13
13	14	12	17	e 22	64	139	114	41	20	8	76	10
14	12	12	e 12	e 20	e 242	229	98	37	19	7	112	10
15	10	10	e 8	e 18	e 186	282	82	33	17	8	35	10
16	8	12	e 8	18	e 114	196	75	30	17	17	16	8
17	9	14	e 9	18	90	148	68	34	14	16	8	8
18	12	14	10	20	114	130	61	44	13	114	6	8
19	11	10	10	68	148	122	54	39	12	135	6	8
20	9	9	10	186	148	139	50	36	10	50	75	6
21	10	8	12	e 114	139	315	47	33	8	34	394	6
22	12	8	11	e 68	122	255	164	30	18	41	134	5
23	10	8	11	e 50	102	176	432	27	50	36	54	5
24	8	8	e 10	44	86	139	244	26	61	27	28	5
25	9	e 6	e 10	47	72	139	157	27	37	17	18	11
26	9	e 5	e 10	74	64	148	536	24	23	12	94	329
27	9	e 5	e 10	90	54	130	840	22	17	10	122	226
28	12	e 5	e 10	90	47	566	404	20	14	8	61	100
29	14	5	e 10	72	-------	1,210	229	18	16	5	41	54
30	14	12	e 9	61	-------	647	157	18	74	5	24	33
31	13	-------	e 8	50	-------	324	-------	22	-------	5	18	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	58	5	13.3	0.052	0.06
November	14	5	9.07	.036	.04
December	39	8	16.8	.066	.08
January	186	8	51.0	.200	.23
February	242	22	81.5	.320	.33
March	1,210	30	202	.792	.91
April	1,800	47	344	1.35	1.51
May	114	18	44.1	.173	.20
June	157	8	33.1	.130	.15
July	135	5	32.3	.127	.15
August	394	4	45.3	.178	.21
September	329	5	54.8	.215	.24
The year	1,800	4	76.9	.302	4.11

e Estimated.

SCIOTO RIVER AT PROSPECT, OHIO

LOCATION.—Chain gage at highway bridge at Prospect, Marion County, five-eighths of a mile above Marion-Delaware County line. Zero of gage is 891.72 feet above mean sea level.

DRAINAGE AREA.—554 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,490 second-feet Apr. 5 (gage height, 7.80 feet); minimum, 7.8 second-feet Nov. 29 (gage height, 1.96 feet).

1925–1931: Maximum discharge, 10,100 second-feet Mar. 22, 1927 (gage height, 15.0 feet); minimum, 5.8 second-feet Sept. 5, 1925 (gage height, 1.12 feet).

Maximum stage known, 21.1 feet Mar. 25, 1913 (discharge, estimated by engineers of Franklin County Conservancy District, 27,000 second-feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	13	30	14	80	110	595	313	72	115	18	154
2	17	13	27	12	61	87	595	273	73	122	18	146
3	14	14	38	11	49	83	1,160	226	63	84	18	273
4	11	13	51	11	57	76	1,940	189	53	56	18	443
5	9.8	12	45	18	45	74	2,490	163	51	41	17	443
6	9.8	12	45	67	44	70	1,880	146	46	39	17	757
7	10	12	45	87	51	70	985	146	66	53	16	404
8	28	11	45	114	74	99	492	146	172	94	14	273
9	84	11	45	102	110	180	355	146	273	63	14	163
10	122	11	45	76	130	273	313	130	180	42	66	115
11	84	11	40	58	112	254	293	122	122	31	313	94
12	57	17	37	49	93	207	273	122	82	21	313	68
13	37	20	30	44	105	198	244	146	68	20	313	60
14	25	18	27	38	313	273	207	130	69	15	1,100	53
15	19	16	27	32	376	355	180	108	58	13	985	51
16	17	16	25	26	334	355	163	94	49	13	376	47
17	15	18	18	22	254	313	146	108	44	26	235	45
18	12	18	18	20	216	254	130	163	40	108	146	45
19	11	17	16	40	254	235	122	146	35	376	101	43
20	9.8	17	16	74	313	244	115	122	32	313	115	40
21	9.8	16	16	114	313	355	115	108	29	216	543	33
22	11	14	14	122	273	443	216	94	48	180	702	31
23	12	13	16	94	244	355	813	87	62	138	313	31
24	10	12	15	66	207	313	702	74	94	94	172	31
25	9.8	13	14	57	180	273	404	74	101	63	108	36
26	9.8	14	14	55	154	273	702	73	72	44	154	94
27	9.8	12	14	92	130	273	1,360	64	53	35	813	293
28	12	9.8	14	130	114	492	1,220	54	41	28	702	273
29	12	7.8	14	130	-------	1,290	702	51	43	24	355	154
30	12	12	14	122	-------	1,550	376	49	62	21	198	130
31	12	-------	14	99	-------	1,040	-------	56	-------	18	189	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	122	9.8	23.8	0.043	0.05
November	20	7.8	13.8	.025	.03
December	51	14	26.7	.048	.06
January	130	11	64.4	.116	.13
February	376	44	167	.301	.31
March	1,550	70	338	.610	.70
April	2,490	115	643	1.16	1.29
May	313	49	127	.229	.26
June	273	29	75.1	.136	.15
July	376	13	80.8	.146	.17
August	1,100	14	273	.493	.57
September	757	31	161	.291	.32
The year	2,490	7.8	165	.298	4.04

SCIOTO RIVER NEAR DUBLIN, OHIO

LOCATION.—Water-stage recorder a quarter of a mile north of Delaware County line, three-quarters of a mile below O'Shaughnessy Dam, and 3 miles north of Dublin, Franklin County. Zero of gage is 775.00 feet above mean sea level.

DRAINAGE AREA.—988 square miles.

RECORDS AVAILABLE.—April, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,000 second-feet Aug. 14 (gage height, 8.34 feet); minimum, 3.5 second-feet between Jan. 11 and 16 (gage height, 2.60 feet).

1921–1931: Maximum discharge, 28,200 second-feet Mar. 21, 1927 (gage height, 14.5 feet); minimum, 0.4 second-foot Nov. 8, 1924 (gage height, 2.21 feet).

The flood of Mar. 25, 1913, reached a stage of 24.6 feet.

REMARKS.—Records good except those for estimated periods, Jan. 10–28, 30–31, Feb. 1–3, which are fair. Water is stored at O'Shaughnessy Dam for water supply of city of Columbus. Monthly summaries of flow have been corrected for storage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	43	60	41	78	213	1,000	525	82	115	66	380
2	69	43	62	41	78	89	920	460	78	235	64	394
3	69	44	62	41	78	116	1,980	364	91	223	64	430
4	69	43	62	41	68	124	4,090	310	86	99	60	730
5	69	43	64	43	55	102	3,230	269	86	66	62	880
6	69	47	64	41	55	106	2,470	246	54	69	62	1,140
7	69	47	64	41	55	110	1,520	258	78	49	60	920
8	68	47	62	41	55	120	880	246	78	64	60	558
9	66	47	62	41	44	255	660	235	217	91	62	382
10	66	47	62	20	26	430	558	219	280	97	261	269
11	66	48	62		26	430	460	205	190	86	920	195
12	68	48	62		26	358	394	214	130	86	880	147
13	68	47	62		26	316	364	219	91	89	1,650	116
14	69	47	60	4	23	394	334	200	76	89	3,950	91
15	69	45	60		20	525	286	176	83	122	2,090	86
16	69	45	60		20	590	246	168	65	163	1,140	91
17	69	45	60	60	20	492	224	210	42	163	625	111
18	71	47	60		19	430	200	224	41	166	400	181
19	69	48	59	80	19	400	181	246	43	805	280	124
20	69	47	59		338	358	163	241	49	768	235	89
21	69	47	59		492	492	181	190	45	1,180	588	71
22	68	54	59		460	695	622	181	148	1,240	1,140	60
23	48	64	57	80	400	625	1,420	155	96	624	768	96
24	27	64	57		340	492	1,140	116	116	361	460	110
25	22	64	57		292	430	768	127	252	200	269	90
26	27	64	57		252	492	1,840	124	207	124	724	257
27	34	66	57	80	210	492	2,340	110	130	76	3,720	400
28	43	66	50		186	776	1,630	102	73	54	1,980	525
29	43	64	41	81	-------	2,610	1,040	99	102	66	1,020	358
30	43	62	41	81	-------	1,970	730	89	76	68	660	219
31	43	-------	41	81	-------	1,520	-------	105	-------	66	460	-------

Month	Observed			Corrected for storage		
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches
October	71	22	59.3	38.8	0.039	0.04
November	66	43	51.1	32.0	.032	.04
December	64	41	58.2	48.2	.049	.06
January	----------	----------	51.5	114	.115	.13
February	492	19	134	279	.282	.29
March	2,610	89	534	545	.552	.64
April	4,090	163	1,060	1,060	1.07	1.19
May	525	89	214	208	.211	.24
June	280	41	106	105	.106	.12
July	1,240	49	249	247	.250	.29
August	3,950	60	799	805	.815	.94
September	1,140	60	317	316	.320	.36
The year	4,090	----------	303	316	.320	4.34

SCIOTO RIVER AT COLUMBUS, OHIO

LOCATION.—Water-stage recorder at sewage-treatment works of city of Columbus, Franklin County, four-tenths of a mile below highway bridge on Frank Road. Zero of gage is 680.40 feet above mean sea level.

DRAINAGE AREA.—1,620 square miles.

RECORDS AVAILABLE.—April, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,020 second-feet Aug. 14 (gage height, 12.94 feet); minimum, 50 second-feet Oct. 1, 2.

1921–1931: Maximum discharge, 28,600 second-feet Mar. 21, 1927 (gage height, 24.7 feet); minimum, 42 second-feet Sept. 6, 1930.

Maximum known stage, 25.9 feet Mar. 25, 1913.

REMARKS.—Records good except those for estimated periods, Aug. 18–21, 24–29, which are fair. Flow regulated at Griggs and O'Shaughnessy Reservoirs. Table of monthly discharge shows mean discharge corrected for storage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	67	109	106	193	303	1,660	988	172	125	230	671
2	60	80	98	106	172	246	1,300	754	141	168	168	801
3	85	67	106	109	169	206	2,910	634	141	301	161	735
4	95	87	109	109	142	210	5,860	525	243	267	194	1,540
5	103	83	117	155	126	224	4,400	447	210	165	154	1,700
6	87	78	155	120	130	200	3,210	399	165	122	141	2,370
7	74	78	136	120	186	206	2,120	498	190	113	148	2,220
8	76	85	126	142	136	245	1,350	442	172	122	138	1,260
9	69	90	133	242	186	242	884	452	173	135	172	801
10	87	83	130	231	262	418	808	442	472	119	261	574
11	80	92	146	196	252	522	671	409	404	119	753	447
12	120	183	130	210	217	470	574	440	305	108	1,990	358
13	117	183	130	169	280	390	541	447	233	105	2,070	280
14	136	136	126	152	474	398	498	488	221	99	5,440	254
15	133	95	123	149	970	552	433	414	183	102	5,720	202
16	146	87	139	146	510	882	395	354	172	123	3,220	198
17	133	83	139	139	362	778	363	446	128	341	1,610	202
18	117	71	133	133	270	600	345	376	128	454	880	350
19	80	65	133	152	292	576	301	728	122	1,790	680	271
20	74	63	126	142	334	470	316	563	122	1,920	580	237
21	80	61	117	139	566	600	353	404	140	1,650	650	202
22	83	73	123	152	714	898	690	367	188	2,950	1,480	213
23	106	149	120	203	606	898	2,270	340	122	1,440	1,440	307
24	114	123	117	200	510	707	2,520	267	116	816	840	438
25	103	106	106	179	445	540	1,610	258	110	508	510	263
26	95	106	120	166	394	534	2,000	254	181	345	400	373
27	95	100	123	162	346	763	4,660	225	198	263	3,550	452
28	83	85	114	186	307	940	3,430	217	158	190	5,050	483
29	65	95	117	224	-------	3,860	2,220	206	208	148	2,770	557
30	65	140	117	256	-------	3,040	1,440	190	179	144	1,610	462
31	65	-------	117	206	-------	2,170	-------	179	-------	184	1,020	-------

Month	Observed			Corrected for storage (mean)
	Maximum	Minimum	Mean	
October	146	58	93.0	82.1
November	183	61	96.5	74.8
December	155	98	124	119
January	256	106	165	215
February	970	126	341	500
March	3,860	200	745	762
April	5,860	301	1,670	1,660
May	988	179	424	415
June	472	110	190	188
July	2,950	99	498	494
August	5,720	138	1,420	1,430
September	2,370	198	641	639
The year	5,860	58	534	548

SCIOTO RIVER AT CHILLICOTHE, OHIO

LOCATION.—Water-stage recorder 500 feet below Bridge Street Bridge at north end of Chillicothe, Ross County. Zero of gage is 594.02 feet above mean sea level.

DRAINAGE AREA.—3,850 square miles.

RECORDS AVAILABLE.—December, 1913, to September, 1914; April, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 17,000 second-feet Aug. 13 (gage height, 11.82 feet); minimum, 160 second-feet Jan. 1 (gage height, 1.10 feet).

1921–1931: Maximum discharge, 75,000 second-feet Feb. 28, 1929; minimum, that of Jan. 1, 1931.

Maximum known stage, 39.8 feet Mar. 26, 1913 (discharge estimated at 260,000 second-feet by Franklin County Conservancy District).

REMARKS.—Records good except those for extremely low water, which are fair. Flow regulated at Griggs and O'Shaughnessy Reservoirs; monthly mean discharge at this station only slightly affected.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	187	235	235	255	370	600	3,310	2,480	568	468	544	1,920
2	187	235	290	250	350	565	2,810	1,920	544	443	683	1,820
3	190	220	310	235	330	530	2,960	1,630	489	1,480	683	2,320
4	190	235	290	220	310	445	8,800	1,400	448	1,070	828	2,420
5	190	235	310	220	310	420	9,900	1,220	511	774	938	2,800
6	205	235	310	250	290	420	8,400	1,100	874	586	690	3,100
7	220	250	330	350	270	395	5,350	1,060	728	443	533	3,590
8	220	235	330	420	270	395	3,720	1,140	735	365	468	3,100
9	205	220	330	370	310	420	2,580	1,180	856	323	425	2,000
10	205	220	310	395	310	445	1,920	1,270	634	304	610	1,450
11	220	235	290	445	330	530	1,680	1,180	683	292	622	1,140
12	220	250	290	420	395	790	1,450	1,060	768	275	2,080	945
13	220	250	290	370	445	830	1,270	1,060	652	262	11,800	814
14	220	310	290	370	470	750	1,140	1,540	544	252	8,300	722
15	220	330	270	330	751	670	1,060	1,540	484	249	9,900	646
16	250	310	290	370	1,810	790	945	1,220	458	246	7,300	598
17	250	290	270	290	1,420	1,160	856	1,060	416	309	4,110	574
18	270	290	270	290	990	1,240	807	1,100	394	1,950	2,530	5,420
19	250	270	250	270	830	1,030	761	1,060	357	4,120	1,870	7,100
20	250	270	250	250	750	950	709	1,270	334	3,340	2,770	2,560
21	235	250	235	270	790	910	690	1,140	319	6,480	2,750	1,500
22	220	250	235	270	950	870	1,890	993	443	9,150	2,120	1,140
23	235	235	235	270	1,240	1,160	5,080	863	574	7,100	2,750	985
24	235	235	235	290	1,160	1,330	6,920	856	479	3,850	2,220	1,270
25	235	270	235	310	990	1,160	4,510	774	386	2,320	1,630	1,970
26	235	290	235	330	870	1,030	3,220	821	458	1,630	2,330	3,340
27	235	270	235	310	790	950	5,920	722	434	1,140	2,260	3,220
28	235	270	235	310	710	1,070	8,500	676	430	908	6,310	2,420
29	250	250	235	290	-------	1,330	5,350	640	443	742	6,700	1,870
30	250	235	235	310	-------	4,480	3,590	634	443	616	3,720	1,580
31	235	-------	250	330	-------	4,610	-------	616	-------	533	2,580	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	270	187	225	0.058	0.07
November	330	220	256	.066	.07
December	330	235	271	.070	.08
January	445	220	312	.081	.09
February	1,810	270	672	.175	.18
March	4,610	395	1,040	.270	.31
April	9,900	690	3,540	.919	1.03
May	2,480	616	1,140	.296	.34
June	874	319	530	.138	.15
July	9,150	246	1,680	.436	.50
August	11,800	425	3,000	.779	.90
September	7,100	574	2,140	.556	.62
The year	11,800	187	1,230	.319	4.34

LITTLE SCIOTO RIVER NEAR MARION, OHIO

LOCATION.—Staff gage in SW. ¼ sec. 19, T. 5 S., R. 15 E., at outfall of sewage-treatment works 300 feet below Erie Railroad crossing and 2 miles west of Marion, Marion County.

DRAINAGE AREA.—73.3 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931. September, 1923, to July, 1925, at site 3 miles downstream.

EXTREMES.—Maximum discharge during year, 634 second-feet Aug. 14 (gage height, 9.35 feet); minimum, 1.2 second-feet Aug. 9.

1923–1931: Maximum discharge, 1,420 second-feet Mar. 22, 1927; minimum, 0.5 second-foot Sept. 26, 30, Oct. 8, 12, 1928.

REMARKS.—Records poor. Water diverted above station; amount not known.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	3.9	7.0	4.1	13	19	73	52	32	7.4	2.4	48
2	3.3	3.6	5.7	3.9	11	17	85	40	19	5.1	3.1	62
3	3.0	4.1	8.8	3.9	8.8	15	285	34	13	4.2	2.3	434
4	3.0	3.9	7.2	5.3	11	16	423	28	12	3.4	2.3	235
5	3.0	3.7	6.3	14	9.0	15	285	26	12	3.0	2.2	368
6	3.4	4.1	8.1	15	9.0	13	173	26	12	3.7	2.2	368
7	3.9	3.3	7.0	26	19	12	79	24	28	3.7	1.7	118
8	20	3.4	7.2	23	26	22	60	24	79	3.9	1.6	67
9	18	3.4	6.6	15	30	30	48	23	52	3.0	1.6	48
10	16	3.6	5.9	10	26	16	46	20	28	3.4	97	38
11	9.8	3.9	6.8	8.6	13	22	40	18	19	2.7	217	32
12	6.8	7.2	6.1	10	20	14	34	21	14	2.2	62	24
13	5.1	4.2	5.7	8.1	38	28	32	24	12	1.9	173	21
14	5.3	4.2	5.7	7.0	181	40	28	23	14	2.0	610	16
15	5.0	3.9	5.7	5.3	57	57	24	16	15	2.4	805	16
16	4.6	3.6	4.8	5.0	50	44	23	13	9.5	2.0	111	15
17	4.4	4.2	4.4	5.1	42	36	22	34	8.3	3.9	54	13
18	3.7	3.4	4.1	5.1	48	34	20	62	7.2	42	32	14
19	3.9	3.6	4.2	17	54	38	18	36	6.1	118	22	15
20	4.2	3.3	4.4	36	54	44	16	36	5.5	57	24	11
21	4.1	3.9	4.6	22	50	60	16	24	4.6	28	149	9.5
22	4.2	3.6	4.2	16	44	48	79	20	5.3	24	52	8.6
23	4.2	3.4	4.2	9.8	40	38	245	18	7.0	13	22	8.1
24	4.2	3.1	4.2	9.3	34	36	104	15	5.5	8.3	13	7.2
25	4.2	3.4	3.9	9.5	30	38	62	15	4.6	4.8	7.6	13
26	3.7	8.1	5.1	16	28	38	226	15	4.2	3.4	79	38
27	5.7	3.3	4.6	22	22	36	315	12	4.2	2.7	577	36
28	4.4	2.9	4.4	22	20	157	149	9.3	3.6	2.7	285	21
29	4.8	3.3	4.4	21	-------	305	85	8.8	11	2.2	111	15
30	4.6	13	4.4	19	-------	157	57	8.1	8.3	1.8	60	11
31	4.4	-------	4.2	16	-------	91	-------	18	-------	3.3	85	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	20	3.0	5.76	May	62	8.1	24.0
November	13	2.9	4.05	June	79	3.6	15.2
December	8.8	3.9	5.48	July	118	1.8	11.9
January	36	3.9	13.2	August	610	1.6	102
February	181	8.8	35.3	September	434	7.2	71.0
March	305	12	49.5				
April	423	16	105	The year	610	1.6	36.8

OLENTANGY RIVER NEAR DELAWARE, OHIO

LOCATION.—Water-stage recorder in NW. ¼ sec. 1, T. 5 N., R. 19 W., at highway bridge a quarter of a mile north of Pennsylvania Railroad crossing and 4 miles north of Delaware. Zero of gage is 876.92 feet above mean sea level.

DRAINAGE AREA.—387 square miles.

RECORDS AVAILABLE.—December, 1923, to September, 1931; October, 1921, to December, 1923, at Delaware.

EXTREMES.—Maximum discharge during year, 4,880 second-feet July 18 (gage height, 9.76 feet); minimum, 2.8 second-feet Oct. 6.

1921–1931: Maximum discharge, 15,000 second-feet May 20, 1922 (gage height, 11.3 feet), at Delaware; minimum, 0.1 second-foot Aug. 20, 1930 (gage height, 0.32 foot).

REMARKS.—Records good except those estimated for periods of ice effect, Jan. 5–6, 8–16, Feb. 1–7, 9–12, 15–16, Mar. 10–13, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	10	22	17	72	76	287	197	55	84	134	316
2	7.2	11	34	15	52	69	322	165	89	100	95	262
3	5.3	13	82	14	36	61	932	140	77	59	54	967
4	5.0	12	64	11	29	60	1,530	115	55	29	37	945
5	4.4	11	39	19	28	57	1,190	104	48	22	29	1,220
6	3.4	9.9	36	74	31	52	472	147	50	17	20	1,500
7	3.1	9.4	33	206	37	48	307	107	61	18	15	772
8	5.6	8.5	32	171	91	60	228	154	166	47	13	406
9	7.7	9.0	30	109	178	88	187	163	340	29	11	278
10	48	9.9	30	84	124	98	161	154	206	22	20	202
11	64	10	28	71	79	86	144	140	136	17	1,070	154
12	31	12	26	55	79	72	132	122	93	13	656	117
13	17	13	25	39	246	91	122	238	64	9.9	685	93
14	12	14	26	30	1,060	140	105	194	51	8.5	2,760	76
15	9.0	17	28	28	472	248	91	142	47	6.3	1,910	64
16	9.4	19	22	26	249	267	77	105	40	5.6	700	63
17	5.9	19	22	23	187	194	71	96	36	11	455	61
18	5.0	20	20	25	218	180	61	462	31	1,130	322	93
19	4.0	19	18	62	287	165	57	292	31	1,690	238	86
20	3.4	18	16	132	289	214	55	161	25	680	649	69
21	3.7	17	15	148	267	267	55	128	22	1,000	720	55
22	4.4	15	15	118	224	273	538	115	30	788	396	39
23	4.7	15	16	89	187	192	1,300	109	31	444	231	31
24	4.7	15	15	61	174	154	698	98	31	267	140	27
25	4.7	14	15	50	148	152	355	96	23	165	96	26
26	5.6	15	17	60	124	268	1,410	96	20	91	707	50
27	6.8	15	17	91	104	284	1,560	96	32	52	1,560	95
28	6.8	15	17	134	86	664	782	69	20	37	1,110	118
29	7.2	15	18	150	-------	1,390	424	55	18	26	700	84
30	9.0	19	18	111	-------	729	264	47	57	22	416	47
31	10	-------	17	95	-------	364	-------	48	-------	18	281	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	64	3.1	10.6	0.027	0.03
November	20	8.5	14.0	.036	.04
December	82	15	26.2	.068	.08
January	206	11	74.8	.193	.22
February	1,060	28	184	.475	.49
March	1,390	48	228	.589	.68
April	1,560	55	464	1.20	1.34
May	462	47	140	.362	.42
June	340	18	66.2	.171	.19
July	1,690	5.6	223	.576	.66
August	2,760	11	524	1.35	1.56
September	1,500	26	277	.716	.80
The year	2,760	3.1	186	.481	6.51

BIG WALNUT CREEK AT REES, OHIO

LOCATION.—Water-stage recorder in T. 4 N., R. 22 W., at highway bridge about 3½ miles below Alum Creek and just below Scioto Valley Railway & Power Co.'s bridge at Rees, Franklin County. Zero of gage is 698.20 feet above mean sea level.

DRAINAGE AREA.—544 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931; August, 1921, to October, 1927, at site three-tenths of a mile upstream.

EXTREMES.—Maximum discharge during year, 4,860 second-feet Apr. 23 (gage height, 8.43 feet); minimum, 6.5 second-feet July 9 (gage height, 0.76 foot).

1921–1931: Maximum discharge, 18,600 second-feet Feb. 27, 1929 (gage height, 18.0 feet); minimum, 5 second-feet Sept. 4, 5, 10–12, 1925.

Maximum stage known, 20.5 feet (present datum) Mar. 25, 1913.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	14	54	24	56	75	187	242	72	40	88	182
2	15	16	39	23	54	70	227	196	69	44	72	184
3	15	17	36	23	52	66	576	167	66	44	39	648
4	15	20	38	23	49	64	2,600	141	86	35	36	525
5	15	19	42	32	46	61	1,040	125	240	27	36	480
6	15	17	57	65	44	59	502	112	83	22	33	525
7	15	16	50	54	51	59	325	141	106	19	30	325
8	15	16	44	83	52	70	242	196	158	16	33	212
9	18	16	41	73	57	65	193	290	87	8.2	56	141
10	15	16	40	58	66	68	164	242	90	9.3	101	103
11	11	18	44	54	75	85	144	196	97	11	185	82
12	9.3	32	44	52	76	80	122	187	78	11	308	70
13	9.0	36	39	49	87	76	110	290	64	10	441	61
14	9.3	29	36	42	377	73	97	380	60	11	440	57
15	8.6	29	34	37	437	82	88	274	58	16	342	52
16	9.0	25	32	36	274	135	80	196	52	18	212	49
17	11	25	30	33	196	135	76	227	46	62	125	54
18	11	27	30	32	158	115	72	242	40	620	82	103
19	10	27	28	35	155	108	68	173	37	227	69	138
20	10	25	26	39	212	101	65	167	33	360	63	99
21	11	24	26	35	227	103	115	144	33	398	185	69
22	11	22	25	49	196	117	1,890	147	76	1,980	308	72
23	11	22	25	57	170	101	3,470	155	49	832	212	232
24	12	25	24	52	141	101	1,010	147	54	380	125	400
25	13	25	24	50	122	105	525	135	48	227	82	227
26	16	27	25	48	110	99	1,510	133	41	138	73	337
27	18	25	32	47	92	150	2,340	133	36	97	1,660	325
28	29	21	30	48	82	170	768	117	34	70	1,720	184
29	17	24	30	56	------	241	460	94	45	63	570	144
30	14	35	26	58	------	342	308	85	40	44	380	110
31	14	------	25	57	------	212	------	80	------	40	258	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	29	8.6	13.5	0.025	0.03
November	36	14	23.0	.042	.05
December	57	24	34.7	.064	.07
January	83	23	45.9	.084	.10
February	437	44	133	.244	.25
March	342	59	109	.200	.23
April	3,470	65	646	1.19	1.33
May	380	80	179	.329	.38
June	240	33	69.3	.127	.14
July	1,980	8.2	190	.349	.40
August	1,720	30	270	.496	.57
September	648	49	206	.379	.42
The year	3,470	8.2	159	.292	3.97

ALUM CREEK AT COLUMBUS, OHIO

LOCATION.—Water-stage recorder a quarter of a mile below Livingston Avenue Bridge at Columbus, Franklin County. Zero of gage is 733.62 feet above mean sea level.

DRAINAGE AREA.—190 square miles.

RECORDS AVAILABLE.—July, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,010 second-feet July 22 (gage height, 6.62 feet); minimum, 2.4 second-feet July 11, 12.

1923–1931: Maximum discharge, 8,800 second-feet Feb. 27, 1929 (gage height, 13.6 feet); minimum, 1.8 second-feet Sept. 7, 1925 (gage height 0.79 foot).

REMARKS.—Records excellent except those for estimated periods, Jan. 7 to Feb. 3, Aug. 11 to Sept. 3, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	5.3	16	9.2	21	32	78	74	28	18	40	66
2	8.5	5.8	14	9.2	20	31	84	65	25	18	10	71
3	8.5	9.2	14	8.5	17	30	138	56	29	16	8.6	200
4	10	8.5	21	10	14	28	618	46	73	12	9.8	127
5	9.2	7.8	26	37	12	27	503	40	34	8.6	9.8	180
6	10	6.2	24	16	13	27	202	43	29	7.4	6.9	167
7	7.2	6.7	14	48	26	32	122	54	42	5.9	11	97
8	10	6.7	16	40	14	32	81	52	34	3.9	12	66
9	4.7	7.8	17	32	31	27	63	81	37	3.0	17	50
10	3.4	8.5	18	31	43	46	50	65	65	2.7	34	37
11	4.7	13	22	28	38	44	44	52	48	2.4	50	32
12	3.7	32	16	24	28	40	38	66	36	2.7	85	25
13	3.7	11	13	22	67	37	37	83	32	4.2	140	22
14	4.0	10	11	20	256	38	36	111	27	5.9	120	20
15	7.2	7.8	11	17	142	48	32	78	22	5.4	74	17
16	7.2	7.2	9.2	13	102	63	25	62	22	8.0	50	20
17	7.8	12	9.2	12	84	56	23	74	15	71	37	36
18	5.8	10	8.5	13	68	51	21	56	14	82	31	34
19	5.8	7.8	7.8	18	75	53	20	50	14	26	25	38
20	5.3	7.2	7.8	12	87	48	23	63	13	80	22	25
21	5.8	6.7	7.2	17	89	63	68	48	31	140	100	31
22	5.0	8.5	7.2	27	80	65	604	60	14	1,220	80	36
23	6.2	9.2	7.2	21	68	53	869	54	17	251	60	109
24	11	10	7.2	18	61	58	276	48	13	120	43	85
25	12	11	6.7	16	56	46	159	52	10	66	30	57
26	12	8.5	10	14	49	43	764	48	11	37	36	89
27	17	6.2	7.8	13	42	56	720	49	15	25	940	59
28	4.7	8.5	8.5	14	37	65	254	44	13	18	530	46
29	4.7	10	8.5	29	------	103	145	38	33	13	140	43
30	4.0	37	8.2	28	------	142	99	34	17	10	95	36
31	4.4	------	9.2	24	------	84	------	32	------	41	77	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17	3.4	7.14	0.038	0.04
November	37	5.3	10.2	.054	.06
December	26	6.7	12.4	.065	.07
January	48	8.5	20.7	.109	.13
February	256	12	58.6	.308	.32
March	142	27	50.6	.266	.31
April	869	20	207	1.09	1.22
May	111	32	57.4	.302	.35
June	73	10	27.1	.143	.16
July	1,220	2.4	75.0	.395	.46
August	940	6.9	94.3	.496	.57
September	200	17	64.0	.337	.38
The year	1,220	2.4	56.8	.299	4.07

DARBY CREEK AT DARBYVILLE, OHIO

LOCATION.—Staff gage at highway bridge three-eighths of a mile northeast of Darbyville, Pickaway County. Zero of gage is 713.64 feet above mean sea level.

DRAINAGE AREA.—533 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,600 second-feet Aug. 14 (gage height 6.30 feet); minimum, 7.2 second-feet Oct. 7.

1921–1931: Maximum discharge, about 18,800 second-feet Feb. 27, 1929; minimum discharge, 3.5 second-feet Aug. 19, 1930; minimum gage height, 1.54 feet Sept. 10–12, 1925.

REMARKS.—Records good except those for period of ice effect, Dec. 21 to Jan. 20, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	18	24		22	35	144	232	48	81	37	142
2	9.5	18	23		20	32	114	200	48	137	61	170
3	8.5	17	20	13	18	30	356	170	46	112	345	194
4	8.5	18	18		18	28	1,270	148	48	94	216	232
5	8.5	18	22		17	30	600	132	45	72	150	232
6	8.0	18	36		22	30	435	130	42	68	103	265
7	7.2	18	32		24	30	300	164	58	51	65	216
8	7.6	17	26	40	25	32	232	176	51	37	51	194
9	7.6	17	26		28	35	200	142	48	35	45	182
10	8.0	18	30		30	42	170	112	39	26	35	132
11	8.0	19	32		32	56	148	72	30	28	1,710	112
12	8.0	21	42		35	53	122	112	31	18	530	70
13	8.5	20	26	25	42	45	112	112	29	18	1,800	63
14	15	22	32		45	42	101	122	30	17	2,600	54
15	13	24	30		76	40	94	110	31	12	1,900	51
16	13	24	24		84	37	87	103	29	9.8	830	42
17	12	24	18		80	40	83	99	27	65	368	39
18	12	22	18	19	59	42	76	101	28	345	282	435
19	12	22	17		62	45	72	103	28	170	248	159
20	12	22	15		53	42	67	112	27	200	200	137
21	12	21		24	59	38	68	81	22	345	182	85
22	12	20		22	59	42	170	76	18	345	300	72
23	12	18	13	20	56	59	830	79	26	368	200	117
24	12	18		20	53	56	480	72	232	265	150	164
25	11	18		26	48	59	390	68	200	194	122	345
26	11	18		28	45	45	412	70	61	28	142	555
27	20	18		22	40	56	1,270	67	65	26	117	700
28	17	18	12	26	40	73	580	65	65	23	830	480
29	15	18		30	------	870	412	58	112	18	530	232
30	17	21		28	------	356	300	54	112	17	390	216
31	18	------		24	------	185	------	51	------	18	232	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20	7.2	11.4	0.021	0.02
November	24	17	19.5	.037	.04
December	42	----------	20.9	.039	.04
January	----------	----------	24.4	.046	.05
February	84	17	42.6	.080	.08
March	870	28	84.0	.158	.18
April	1,270	67	323	.606	.68
May	232	51	109	.205	.24
June	232	18	55.9	.105	.12
July	368	9.8	105	.197	.23
August	2,600	35	476	.893	1.03
September	700	39	203	.381	.43
The year	2,600	7.2	123	.231	3.14

PAINT CREEK NEAR GREENFIELD, OHIO

LOCATION.—Chain gage at highway bridge in Fayette County, a quarter of a mile north of county line and 2 miles north of Greenfield, Highland County.
DRAINAGE AREA.—251 square miles.
RECORDS AVAILABLE.—August, 1926, to September, 1931.
EXTREMES.—Maximum discharge during year, about 3,420 second-feet July 21 (gage height, 7.33 feet); minimum, 0.2 second-foot Oct. 13–15, 17–18.
1926–1931: Maximum discharge, about 6,340 second-feet Aug. 17, 1926 (gage height, 10.5 feet); minimum discharge, 0.1 second-foot several times in July, August, September, 1930.
REMARKS.—Records good except those for high water and estimated periods, Nov. 27, 29, Dec. 28 to Jan. 3, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	2.6	4.6	2.0	2.4	12	131	141	74	26	58	87
2	.5	2.2	7.0	2.0	2.6	11	173	128	56	39	45	309
3	.5	2.0	4.6	2.4	2.8	11	1,140	110	47	34	49	264
4	.5	2.2	4.6	2.6	2.8	10	1,080	88	75	30	53	223
5	.5	2.0	4.0	51	2.8	9.7	820	82	55	26	43	173
6	.4	2.0	5.8	18	2.8	10	498	78	51	16	39	150
7	.3	1.8	6.4	9.3	3.2	11	399	210	82	13	35	112
8	.4	2.2	6.1	4.6	3.6	15	278	150	112	10	36	81
9	.4	2.0	5.8	3.6	5.2	16	210	130	75	9.4	50	65
10	.3	2.2	5.2	3.8	4.6	16	197	112	61	7.9	65	55
11	.5	2.8	4.6	3.8	6.4	17	173	112	54	6.4	34	51
12	.3	3.8	4.0	3.6	7.0	22	126	108	43	4.4	29	45
13	.2	4.3	3.2	3.2	13	30	112	97	36	3.9	197	37
14	.2	4.6	3.2	2.8	14	49	99	130	36	3.0	249	30
15	.2	5.2	3.6	2.6	10	61	88	108	32	141	197	26
16	.3	4.3	3.2	2.8	8.1	56	76	101	27	4.9	141	24
17	.2	4.0	3.2	2.8	12	50	72	86	25	173	101	29
18	.2	3.4	3.0	2.4	20	42	68	90	22	343	76	770
19	.3	3.0	2.8	3.4	19	40	63	88	19	920	418	1,440
20	.3	2.6	2.6	3.2	22	34	62	81	15	519	770	1,570
21	.6	2.6	2.4	3.2	21	30	60	78	24	3,420	820	540
22	.7	2.4	2.6	2.8	19	30	249	70	26	2,800	456	456
23	.7	2.6	2.6	2.8	18	27	477	72	41	1,320	343	294
24	.7	2.6	2.5	2.6	17	27	343	63	46	674	223	519
25	.6	2.4	2.4	2.4	15	30	249	65	39	437	173	362
26	.6	2.4	3.6	2.4	14	26	249	56	32	309	197	920
27	1.1	2.4	3.2	2.6	12	24	399	49	27	210	264	770
28	.9	2.4	2.8	3.0	12	38	309	43	20	162	264	519
29	1.3	2.4	2.5	3.0	------	43	223	44	32	116	197	343
30	1.4	3.6	2.3	2.8	------	48	173	124	32	78	150	264
31	3.0	------	2.1	2.6	------	49	------	82	------	63	114	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3.0	0.2	0.594	0.0024	0.003
November	5.2	1.8	2.83	.011	.01
December	7.0	2.1	3.76	.015	.02
January	51	2.0	5.16	.021	.02
February	22	2.4	10.4	.041	.04
March	61	9.7	28.9	.115	.13
April	1,140	60	287	1.14	1.27
May	210	43	96.0	.382	.44
June	112	15	43.9	.175	.20
July	3,420	3.0	384	1.53	1.76
August	820	29	190	.757	.87
September	1,570	24	351	1.40	1.56
The year	3,420	.2	117	.466	6.32

PAINT CREEK NEAR BOURNEVILLE, OHIO

LOCATION.—Water-stage recorder at highway bridge 1¼ miles southwest of Bourneville, Ross County, and 1¼ miles above Twin Creek. Zero of gage is 667.01 feet above mean sea level.

DRAINAGE AREA.—808 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 17,300 second-feet July 21 (gage height, 14.20 feet); minimum, 7.2 second-feet Oct. 6–10 (gage height, 2.25 feet).

1923–1931: Maximum discharge, 27,700 second-feet Aug. 20, 1926 (gage height, 17.9 feet); minimum, 6.7 second-feet Aug. 13, 14, 1930 (gage height, 2.24 feet).

REMARKS.—Records good except those for estimated periods when recorder did not operate properly, Jan. 24–27, Feb. 2–24, and periods affected by ice, Nov. 26–29, Dec. 28–31, Jan. 1–2, 7–17, 20–23, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	18	24	11	21	53	592	489	183	120	247	361
2	12	16	30	14	19	55	1,610	440	160	113	194	1,870
3	10	15	30	17	20	57	3,040	400	137	111	160	1,260
4	9.4	14	27	19	21	51	8,570	342	135	103	460	878
5	8.4	14	29	25	19	49	2,880	298	422	97	860	660
6	7.8	14	34	463	17	51	1,740	289	214	90	320	516
7	7.2	14	34	107	16	63	1,240	612	307	86	210	405
8	7.2	12	34	42	20	299	975	550	660	82	183	334
9	7.2	12	31	19	30	269	780	526	338	81	162	271
10	7.2	16	26	13	30	175	665	511	250	79	234	231
11	8.4	17	25	29	35	160	599	415	188	76	261	198
12	8.9	19	24	27	40	154	500	445	158	75	704	175
13	8.9	23	24	21	50	255	435	494	135	72	2,260	156
14	8.9	14	23	21	70	298	395	484	122	70	1,300	142
15	8.9	23	23	20	50	290	357	390	110	68	744	131
16	8.9	21	19	20	40	227	324	311	103	178	522	133
17	9.4	23	19	19	60	190	293	289	98	532	385	134
18	8.4	21	19	21	95	160	271	311	94	3,470	306	7,840
19	7.8	24	19	24	100	150	247	298	90	1,070	944	1,740
20	7.8	23	18	21	110	142	220	250	87	942	6,610	2,050
21	8.9	20	19	18	110	127	228	254	185	8,630	3,170	1,280
22	9.4	19	19	14	100	114	1,900	224	113	7,710	1,520	800
23	10	15	17	14	90	107	1,390	289	103	3,880	1,010	3,380
24	14	15	18	13	84	105	1,140	217	160	2,020	720	1,220
25	16	14	18	13	77	114	845	198	144	1,140	577	1,230
26	16	13	20	14	65	109	998	224	150	800	1,010	6,940
27	14	12	25	16	63	105	1,040	180	155	616	1,040	2,280
28	12	12	24	21	57	386	942	150	100	489	910	1,560
29	13	12	19	23	-------	454	732	142	118	390	709	1,040
30	15	19	15	21	-------	298	599	170	165	320	544	786
31	18	-------	11	21	-------	242	-------	201	-------	247	440	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18	7.2	10.3	0.013	0.01
November	24	12	16.8	.021	.02
December	34	11	23.1	.029	.03
January	463	11	36.8	.046	.05
February	110	16	53.9	.067	.07
March	454	49	171	.212	.24
April	8,570	220	1,180	1.46	1.63
May	612	142	335	.415	.48
June	660	87	179	.222	.25
July	8,630	68	1,090	1.35	1.56
August	6,610	160	926	1.15	1.33
September	7,840	131	1,330	1.65	1.84
The year	8,630	7.2	447	.553	7.51

LITTLE SALT CREEK NEAR JACKSON, OHIO

LOCATION.—Chain gage in SE. ¼ sec. 12, T. 7 N., R. 19 W., at highway bridge 3½ miles northwest of Jackson and half a mile below mouth of Rock Run.
DRAINAGE AREA.—76.5 square miles.
RECORDS AVAILABLE.—July, 1925, to September, 1931.
EXTREMES.—Maximum discharge during year, 1,280 second-feet Apr. 4 (gage height, 12.85 feet); minimum, 0.6 second-foot Oct. 13, 14 (gage height, 0.30 foot).

1925–1931: Maximum discharge, 1,470 second-feet Aug. 18, 1926 (gage height, 13.2 feet); minimum, 0.4 second-foot Sept. 9, 1925 (gage height, 0.52 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	1.1	1.9	1.2	1.5	23	342	40	15.8	6.7	123	5.3
2	.8	1.1	1.6	1.1	1.4	43	652	38	12.4	6.0	43	37
3	.7	1.1	1.4	1.0	1.3	26	313	47	11.6	6.0	14.5	44
4	.8	1.1	1.2	1.1	1.4	16.6	1,250	34	10.4	5.4	40	13.9
5	.9	1.1	1.2	2.2	1.4	10.1	580	28	23	4.8	31	9.5
6	.9	1.1	6.4	10.1	1.4	10.1	199	26	21	5.4	17.9	7.5
7	.8	1.0	4.0	3.7	1.6	14.1	102	31	55	5.4	10.8	5.9
8	1.1	1.0	2.2	2.6	1.9	223	75	102	144	4.5	8.2	4.8
9	.9	1.0	1.9	2.2	3.1	116	55	90	50	4.2	8.2	5.0
10	.8	1.1	1.9	1.6	5.7	67	50	183	26	4.2	11.6	3.7
11	.8	1.5	1.6	1.5	5.1	50	144	90	21	6.0	8.2	3.7
12	.9	2.0	1.6	2.2	3.1	45	72	84	16.6	4.5	72	3.5
13	.7	1.9	1.5	2.8	5.7	70	55	259	14.1	3.7	499	5.9
14	.6	1.4	1.4	2.2	34	55	40	199	29	3.5	223	3.5
15	.7	1.8	1.4	1.8	11.6	43	31	102	151	3.3	42	3.1
16	.7	1.8	1.2	1.5	7.1	34	24	64	43	3.7	21	3.5
17	.9	1.4	1.1	1.3	12.4	25	22	47	25	16.6	15.5	2.7
18	.8	1.3	1.1	1.4	25	20	20	40	18.4	31	10.9	4.0
19	.8	1.3	1.1	1.9	19.6	17.5	17.1	31	15.4	16.2	9.8	2.7
20	.8	1.3	1.1	1.9	13.3	13.7	16.2	25	12.4	21	102	4.5
21	.7	1.2	1.1	1.5	10.1	12.0	34	22	24	102	167	2.7
22	.7	1.2	1.0	1.4	7.1	12.4	753	20	14.9	31	69	2.4
23	1.1	1.2	.9	1.3	6.0	10.8	831	24	31	29	33	1.9
24	1.3	1.5	.9	1.4	5.7	13.3	241	20	16.2	25	16.8	1.8
25	1.1	1.6	.9	1.6	4.5	27	123	22	12.8	16.6	12.4	2.2
26	1.1	1.8	1.5	1.6	4.0	27	175	24	10.4	12.0	13.2	277
27	1.1	1.4	6.4	2.2	3.5	22	151	17.1	9.7	7.4	12.0	33
28	4.2	1.2	2.4	1.9	3.3	313	96	14.5	8.5	6.0	9.5	17.2
29	1.9	1.1	1.6	1.9	------	223	67	15.8	10.4	5.4	7.8	10.2
30	1.4	1.3	1.9	1.9	------	96	50	38	9.7	4.8	6.2	7.5
31	1.4	------	1.4	1.6	------	62	------	21	------	6.7	5.9	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4.2	0.6	1.04	0.014	0.02
November	2.0	1.0	1.33	.017	.02
December	6.4	.9	1.83	.024	.03
January	10.1	1.0	2.05	.027	.03
February	34	1.3	7.21	.094	.10
March	313	10.1	56.1	.733	.85
April	1,250	16.2	219	2.86	3.19
May	259	14.5	58.0	.758	.87
June	151	8.5	28.8	.376	.42
July	102	3.3	13.2	.173	.20
August	499	5.9	53.7	.702	.81
September	277	1.8	17.6	.230	.26
The year	1,250	.6	38.3	.501	6.80

OHIO BRUSH CREEK BASIN

OHIO BRUSH CREEK NEAR WEST UNION, OHIO

LOCATION.—Chain gage at highway bridge 2 miles southwest of Cedar Mills and 7 miles east of West Union, Adams County.

DRAINAGE AREA.—388 square miles.

RECORDS AVAILABLE.—August, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, about 8,220 second-feet Aug. 20 (gage height, 11.05 feet); minimum, 0.7 second-foot Oct. 26 (gage height, 1.00 foot).

1926–1931: Maximum discharge, 12,600 second-feet Jan. 19, 1927 (gage height, 14.4 feet); minimum discharge, 0.2 second-foot Aug. 4, Sept. 6–11, 1930; minimum gage height, 0.84 foot Sept. 8, 1930.

REMARKS.—Records good except those for period of ice effect, Jan. 13–17, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	1.2	3.4	10	16	378	1,540	130	60	38	5.9	33
2	5.4	1.0	3.4	8.7	12	218	2,040	117	48	27	4.4	132
3	3.4	1.5	4.1	6.9	12	119	1,780	103	36	14	4.9	289
4	3.2	1.5	7.3	5.4	9.4	88	5,220	90	27	1,950	5.9	112
5	2.3	1.5	7.6	6.9	9.1	75	1,300	77	24	309	250	67
6	1.7	1.2	10	452	8.4	73	647	75	90	905	73	42
7	1.7	1.0	33	111	8.0	141	402	195	60	115	41	28
8	1.5	1.1	33	57	8.7	2,790	289	269	92	39	20	22
9	1.5	1.2	29	28	16	870	218	208	69	24	12	18
10	1.0	1.6	17	16	83	502	205	309	42	21	1,460	16
11	1.7	3.1	13	21	72	452	265	148	28	14	166	14
12	1.6	3.1	10	22	46	354	177	354	21	9.8	250	12
13	1.8	3.1	8.7	18	805	805	141	309	18	7.6	870	10
14	1.7	2.7	8.0	15	1,080	502	119	289	13	5.9	235	9.5
15	1.7	2.7	6.6	14	205	309	105	186	13	5.4	94	11
16	1.6	2.3	5.7	13	130	183	94	130	10	221	52	40
17	1.7	3.2	5.2	13	354	141	81	198	8.7	40	31	32
18	1.5	56	4.6	12	677	115	80	141	7.3	130	130	647
19	1.2	24	3.9	12	332	117	72	94	5.4	61	1,010	452
20	1.2	11	3.4	19	198	119	66	73	5.9	60	5,000	160
21	1.0	8.7	3.4	29	136	103	67	70	5.9	1,860	1,080	59
22	1.1	6.2	3.4	20	101	85	4,670	83	5.2	530	530	34
23	1.2	4.6	3.4	16	83	75	1,080	143	24	502	163	27
24	1.2	3.9	3.1	13	77	69	452	107	21	119	103	32
25	1.2	3.4	3.1	12	73	103	289	105	14	51	75	20
26	.8	3.2	4.4	11	64	115	905	115	9.8	31	67	3,090
27	1.2	2.7	13	13	51	99	617	88	15	24	132	289
28	1.6	2.3	43	18	41	3,190	332	54	30	14	174	122
29	1.5	2.7	29	26	------	838	239	46	28	11	122	76
30	1.2	3.1	26	24	------	402	166	88	31	8.7	60	54
31	1.5	------	19	20	------	246	------	109	------	6.9	41	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7.3	0.8	1.88	0.005	0.01
November	56	1.0	5.49	.014	.02
December	43	3.1	11.9	.031	.04
January	452	5.4	34.3	.088	.10
February	1,080	8.0	168	.433	.45
March	3,190	69	441	1.14	1.31
April	5,220	66	789	2.03	2.26
May	354	46	145	.374	.43
June	92	5.2	28.7	.074	.08
July	1,950	5.4	231	.595	.69
August	5,000	4.4	396	1.02	1.18
September	3,090	9.5	198	.510	.57
The year	5,220	.8	204	.526	7.14

WHITEOAK CREEK BASIN

WHITEOAK CREEK NEAR GEORGETOWN, OHIO

LOCATION.—Chain gage at highway bridge 600 feet below mouth of Opossum Run and 1¾ miles southwest of Georgetown, Brown County.
DRAINAGE AREA.—221 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1931.
EXTREMES.—Maximum discharge during year, 6,000 second-feet Apr. 4 (gage height, 10.20 feet); no flow Oct. 11 to Nov. 30.
1923–1931: Maximum discharge, 6,800 second-feet Dec. 31, 1923 (gage height, 11.0 feet); no flow at times July to November, 1930.
REMARKS.—Records good except those estimated because of ice, Dec. 30 to Jan. 4, Jan. 15–18, 21–23, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	0	3.2	2.5	2.4	21	293	52	10	73	7.7	15
2	1.7	0	2.0	2.2	1.8	18	1,820	60	9.2	33	119	38
3	.9	0	2.6	2.1	1.8	22	2,330	36	8.7	18	51	412
4	.5	0	3.2	2.0	1.2	18	5,140	32	7.7	172	22	119
5	.5	0	8.1	65	1.4	13	531	30	6.9	57	431	58
6	.2	0	13	470	1.4	17	263	26	6.1	60	103	32
7	.1	0	10	70	1.2	35	161	30	42	28	84	19
8	.1	0	7.2	33	1.7	885	113	42	58	15	26	15
9	.1	0	6.4	16	4.1	325	91	63	91	9.2	31	11
10	.1	0	8.1	18	3.6	172	77	184	40	5.3	342	8.7
11	0	0	9.6	7.7	2.6	161	66	84	22	3.8	129	6.5
12	0	0	7.2	11	3.6	196	66	54	15	2.6	150	5.3
13	0	0	6.4	6.1	40	687	54	109	11	2.0	172	3.8
14	0	0	7.2	5.0	470	431	45	84	7.7	1.2	222	3.6
15	0	0	4.4	4.4	91	209	40	70	6.9	1.2	88	3.6
16	0	0	3.2	3.7	32	127	33	48	6.9	1.2	43	4.1
17	0	0	3.2	3.3	54	80	33	57	4.7	1.2	22	4.1
18	0	0	3.6	3.1	123	57	26	38	3.0	43	15	596
19	0	0	2.9	4.7	139	50	23	32	2.6	36	16	552
20	0	0	2.6	2.4	78	48	22	28	2.8	35	785	113
21	0	0	2.3	1.9	48	48	24	24	2.6	394	1,110	56
22	0	0	2.0	1.6	31	34	2,180	23	2.2	1,110	172	35
23	0	0	2.0	1.5	22	26	510	24	2.6	150	82	115
24	0	0	1.1	2.0	18	25	235	23	15	80	48	22
25	0	0	.9	2.6	14	24	121	26	11	38	33	15
26	0	0	4.0	2.8	13	22	531	19	6.9	21	28	1,290
27	0	0	9.1	2.4	11	30	394	23	4.7	13	88	263
28	0	0	7.2	2.2	7.7	1,230	150	23	6.5	9.7	107	107
29	0	0	4.4	3.0	------	431	101	15	42	6.9	51	62
30	0	4.0	3.4	3.0	------	150	73	23	150	5.3	28	40
31	0	------	2.8	2.6	------	95	------	12	------	4.7	20	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.6	0	0.219	0.001	0.001
November	4.0	0	.133	.001	.001
December	13	.9	4.95	.022	.03
January	470	1.5	24.4	.110	.13
February	470	1.2	43.5	.197	.21
March	1,230	13	183	.828	.95
April	5,140	22	518	2.34	2.61
May	184	12	45.0	.204	.24
June	150	2.2	20.2	.091	.10
July	1,110	1.2	78.4	.355	.41
August	1,110	7.7	149	.674	.78
September	1,290	3.6	134	.606	.68
The year	5,140	0	99.9	.452	6.14

LITTLE MIAMI RIVER BASIN

LITTLE MIAMI RIVER AT SPRING VALLEY, OHIO

LOCATION.—Chain gage in R. 5, T. 4, at highway bridge three-eighths of a mile southwest of Spring Valley, Greene County, and 2½ miles below mouth of Sugar Creek.

DRAINAGE AREA.—361 square miles.

RECORDS AVAILABLE.—September, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,440 second-feet Sept. 19 (gage height, 8.78 feet); minimum, 30 second-feet July 14, 15 (gage height, 1.70 feet).

1925–1931: Maximum discharge, 14,800 second-feet Feb. 26, 1929 (gage height, 16.8 feet); minimum, that of July 14, 15, 1931.

REMARKS.—Records good except those for periods of ice effect, Nov. 28, Dec. 30–31, Jan. 1, 14, 15, 17, 21–23, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	43	72	41	56	72	166	198	85	61	80	93
2	37	41	53	41	56	71	270	187	72	65	74	135
3	39	46	52	41	56	68	689	166	65	53	87	145
4	37	46	52	41	56	66	1,130	155	72	47	103	133
5	37	43	52	374	56	74	586	145	93	42	69	114
6	37	41	68	198	58	69	402	135	82	74	61	95
7	37	41	62	111	66	74	308	145	187	53	57	92
8	39	45	57	87	69	118	258	135	145	40	51	82
9	46	46	56	76	76	135	221	135	109	39	48	74
10	41	46	53	92	79	126	198	145	87	35	689	65
11	39	49	53	72	69	111	187	135	77	31	187	63
12	37	54	52	69	69	116	166	210	72	33	245	60
13	36	58	48	66	95	109	145	187	65	31	490	57
14	37	53	49	63	145	145	135	145	62	30	402	53
15	36	53	43	60	129	155	126	135	77	33	245	57
16	39	48	47	56	114	145	122	124	82	37	176	57
17	41	48	76	54	112	133	120	402	66	51	135	53
18	40	46	46	51	105	122	116	176	57	1,900	116	965
19	39	48	45	69	100	120	107	145	54	522	430	1,780
20	41	46	46	69	102	114	102	145	51	374	460	460
21	39	46	46	66	95	103	124	127	52	1,180	522	282
22	39	43	46	63	92	105	135	122	56	1,220	295	210
23	45	41	43	60	85	98	460	127	98	619	221	522
24	43	43	111	56	84	95	321	120	79	347	166	374
25	46	41	74	57	80	98	258	114	62	245	145	187
26	43	43	47	62	80	96	522	103	53	187	270	586
27	45	47	42	63	74	96	522	93	52	155	145	430
28	51	45	46	61	72	187	347	87	41	129	166	295
29	46	42	43	62	-------	176	282	85	93	109	133	233
30	48	58	42	61	-------	166	221	82	71	95	120	187
31	46	-------	42	58	-------	145	-------	84	-------	87	100	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	51	36	40.7	0.113	0.13
November	58	41	46.3	.128	.14
December	111	42	53.7	.149	.17
January	374	41	77.4	.214	.25
February	145	56	83.2	.230	.24
March	187	66	113	.313	.36
April	1,130	102	292	.809	.90
May	402	82	145	.402	.46
June	187	41	77.2	.214	.24
July	1,900	30	256	.709	.82
August	689	48	209	.579	.67
September	1,780	53	265	.734	.82
The year	1,900	30	138	.382	5.20

LITTLE MIAMI RIVER AT MILFORD, OHIO

LOCATION.—Water-stage recorder 500 feet below highway bridge in Milford, Clermont County, 1¼ miles above mouth of East Fork.

DRAINAGE AREA.—1,190 square miles.

RECORDS AVAILABLE.—March, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 32,600 second-feet July 21 (gage height, 11.88 feet); minimum, 39 second-feet Dec. 31 (gage height, 1.16 feet). 1925–1931: Maximum discharge, 46,300 second-feet Dec. 14, 1927 (gage height, 13.8 feet); minimum, 38 second-feet Sept. 9, 1925 (gage height, 0.60 foot).

REMARKS.—Records good except those for extremely high water and for estimated periods, Jan. 5–6, Mar. 7 to Apr. 16, May 21 to July 12, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	65	79	69	89	113		560			178	309
2	57	65	79	68	87	110		492			158	4,360
3	52	68	83	70	85	113	4,500	454	140	85	152	1,580
4	58	64	87	72	85	105		408			166	738
5	53	94	89	284	79	103		364			193	518
6	51	70	108	1,480	76	105		353			165	397
7	58	60	101	484	79			353			136	308
8	61	61	113	260	78		1,000	348	260	75	145	260
9	57	52	101	190	101	390		328			294	230
10	58	61	96	151	105			333			1,320	204
11	55	61	87	139	103			353		52	1,470	190
12	54	74	85	139	105			348		56	584	171
13	54	72	85	126	144	360	380	386	130	55	1,540	155
14	55	74	83	105	398			414		56	1,220	142
15	58	79	79	120	298			353		57	632	139
16	52	74	78	110	230		300	303		55	425	136
17	52	74	78	110	217		298	402		52	318	133
18	48	67	72	94	256	300	293	755	110	788	260	1,580
19	52	67	70	101	251		270	419		2,320	796	1,830
20	54	65	74	92	225		276	359		2,060	3,680	1,220
21	53	65	74	98	201		750			17,300	1,770	560
22	53	68	74	98	175		4,680			5,840	920	408
23	57	64	76	85	165	220	2,250	280	120	2,320	574	413
24	62	62	72	94	155		1,300			1,360	414	1,060
25	61	67	70	87	139		910			760	343	1,060
26	60	67	74	92	136		2,330			525	1,570	5,050
27	64	67	81	92	127		2,040			402	1,930	1,560
28	67	64	83	96	122	310	1,310	180	100	338	567	920
29	72	64	79	98			920			274	460	618
30	67	70	78	94			687			242	353	480
31	68		74	94						208	293	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	72	48	57.5	0.048	0.06
November	94	52	67.5	.057	.06
December	113	70	82.6	.069	.08
January	1,480	68	171	.144	.17
February	398	76	154	.129	.13
March		103	273	.229	.26
April		270	1,600	1.34	1.50
May	755		341	.287	.33
June			143	.120	.13
July	17,300	52	1,160	.975	1.12
August	3,680	136	743	.624	.72
September	5,050	133	891	.749	.84
The year	17,300	48	474	.398	5.40

EAST FORK OF LITTLE MIAMI RIVER AT PERINTOWN, OHIO

LOCATION.—Chain gage at highway bridge at Perintown, Clermont County, 5 miles above junction with Little Miami River.

DRAINAGE AREA.—477 square miles.

RECORDS AVAILABLE.—May, 1915, to May, 1920; January, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,400 second-feet Apr. 4 (gage height, 13.26 feet); minimum, 0.5 second-foot Oct. 10.

1915–1920: Maximum stage, 19.77 feet Apr. 20, 1920; minimum, −0.18 foot Oct. 3–7, 1917. Discharge not determined.

1925–1931: Maximum discharge, 20,700 second-feet Feb. 14, 1926 (gage height, 18.0 feet); minimum discharge, 0.3 second-foot July 24, 1930; minimum gage height, that of Aug. 1, 2, 4, 29, 1930.

REMARKS.—Records good except those for periods of ice effect Nov. 28–Dec. 5, Dec. 23 to Jan. 6, which are fair, and periods of extremely low water, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	2.9	4.6	4.2	8.8	19	339	123	34	236	35	59
2	1.8	2.9	4.4	4.0	6.6	19	3,590	107	30	121	53	1,690
3	1.3	2.8	4.2	3.8	9.2	19	3,490	83	23	83	32	1,970
4	.9	3.0	4.0	3.7	9.2	17	8,980	79	21	1,330	30	437
5	1.1	2.8	3.8	8.0	8.4	16	1,280	69	41	130	322	211
6	.9	2.8	6.6	360	10	16	575	66	26	99	73	138
7	.9	2.4	9.6	240	9.6	18	337	83	74	55	34	101
8	.8	2.5	8.0	89	9.6	1,330	236	71	66	36	39	73
9	.8	1.7	12	52	10	575	198	65	63	24	39	62
10	.7	2.5	11	33	12	377	159	68	123	22	292	45
11	.8	2.9	12	28	14	182	138	65	79	20	66	37
12	1.9	3.3	9.6	29	14	176	117	71	55	16	121	33
13	1.7	3.2	10	24	19	705	101	86	79	12	292	30
14	1.8	2.8	8.8	18	256	495	93	76	55	15	419	26
15	1.7	3.5	7.4	18	240	304	79	63	86	12	224	18
16	1.8	3.3	7.4	12	103	176	76	63	49	8.6	123	26
17	2.0	4.4	8.0	18	64	107	69	76	44	9.2	81	24
18	2.0	4.0	7.4	16	123	75	63	97	55	14	50	161
19	2.0	4.0	6.8	17	196	64	55	63	32	21	50	1,030
20	2.0	4.2	6.3	14	168	59	52	56	23	147	2,840	198
21	2.3	4.4	6.3	12	77	54	95	60	19	4,780	2,680	125
22	2.0	4.4	5.7	10	57	49	3,590	56	264	4,560	515	77
23	2.1	4.4	5.1	9.6	49	42	1,390	60	57	660	236	368
24	2.0	4.0	4.7	10	38	36	419	53	57	455	147	1,230
25	2.3	3.7	4.4	9.2	30	37	264	53	37	198	103	307
26	2.5	4.4	5.1	10	27	34	885	52	32	125	90	4,780
27	2.5	4.0	5.4	11	21	34	795	41	30	90	174	1,330
28	2.9	4.0	5.4	10	20	660	352	66	90	71	368	307
29	3.0	3.7	4.7	10	------	795	211	69	615	52	174	211
30	2.6	4.2	4.6	10	------	272	152	46	384	41	105	138
31	2.8	------	4.4	8.8	------	141	------	39	------	33	71	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3.0	0.7	1.80	0.004	0.005
November	4.4	1.7	3.44	.007	.008
December	12	3.8	6.70	.014	.02
January	360	3.7	35.6	.075	.09
February	256	6.6	57.5	.121	.13
March	1,330	16	223	.468	.54
April	8,980	52	939	1.97	2.20
May	123	39	68.5	.144	.17
June	615	19	88.1	.185	.21
July	4,780	8.6	435	.912	1.05
August	2,840	30	319	.669	.77
September	4,780	18	508	1.06	1.18
The year	8,980	.7	223	.468	6.37

LICKING RIVER BASIN

LICKING RIVER AT FARMERS, KY.

LOCATION.—Chain gage at highway bridge on line between Rowan and Bath Counties, 200 feet above Chesapeake & Ohio Railway bridge and three-quarters of a mile west of Farmers. Zero of gage is 635.70 feet above mean sea level.

DRAINAGE AREA.—768 square miles.

RECORDS AVAILABLE.—May, 1928, to September, 1931 (discontinued); July, 1915, to June, 1920 (gage heights only), at site 300 feet downstream.

EXTREMES.—Maximum discharge during year, 7,000 second-feet Apr. 23 (gage height, 18.20 feet); minimum, 0.7 second-foot Oct. 14 (gage height, 1.37 feet).

1928–1931: Maximum discharge, 11,400 second feet June 30, 1928 (gage height, 25.6 feet); minimum occurred in 1930, as above.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	11	14	26	18	98	1,860	1,050	170	42	60	182
2	1.2	9.3	14	24	18	162	2,540	870	148	38	49	159
3	1.0	8.6	12	21	18	179	2,760	690	138	36	44	208
4	1.0	8.0	11	20	18	179	2,310	668	128	35	93	295
5	1.0	8.6	11	19	16	165	1,820	540	124	96	138	222
6	.8	8.0	16	33	16	179	2,220	445	109	58	195	159
7	1.0	7.4	19	56	15	239	2,000	410	105	43	280	138
8	1.4	8.0	29	84	25	1,100	1,680	445	98	43	236	118
9	1.9	8.0	36	119	223	1,720	1,000	600	95	35	195	96
10	1.4	6.8	32	122	735	1,540	780	1,500	86	31	182	84
11	1.4	9.3	27	126	735	1,320	1,050	1,460	82	26	462	49
12	1.0	11	29	122	578	1,100	1,460	1,410	74	24	222	68
13	.8	14	30	90	398	960	1,500	1,500	68	25	915	56
14	.7	19	32	82	690	870	1,180	1,410	71	23	2,040	44
15	1.0	16	32	74	690	780	960	1,280	148	26	915	36
16	1.0	12	29	60	578	735	825	1,050	358	25	428	61
17	1.0	16	27	50	555	825	645	825	148	25	250	49
18	1.0	17	22	44	1,050	668	500	690	93	25	195	41
19	.8	17	20	45	1,050	488	462	540	77	54	208	36
20	1.4	14	16	47	915	420	410	428	63	124	1,050	34
21	2.8	12	13	38	668	330	358	375	54	91	1,900	32
22	2.5	12	13	38	510	290	3,480	325	48	138	1,180	34
23	2.5	12	12	36	398	239	7,000	325	52	265	1,820	40
24	3.9	11	12	33	330	690	6,200	340	54	600	2,040	41
25	3.5	11	12	30	208	1,140	5,250	310	58	780	1,720	48
26	3.1	12	14	29	165	1,100	4,900	280	49	375	960	43
27	3.5	11	16	28	135	1,100	4,550	265	49	250	690	48
28	5.8	12	20	26	94	3,480	2,850	265	44	170	600	81
29	5.8	11	25	25	-------	6,100	1,900	265	43	118	375	81
30	5.8	12	27	24	-------	4,800	1,410	208	39	89	280	81
31	6.3	-------	29	22	-------	3,620	-------	182	-------	68	222	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6.3	0.7	2.17	0.0028	0.003
November	19	6.8	11.5	.015	.02
December	36	11	21.0	.027	.03
January	126	19	51.4	.067	.08
February	1,050	15	387	.504	.52
March	6,100	98	1,180	1.54	1.78
April	7,000	358	2,200	2.86	3.19
May	1,500	182	676	.880	1.01
June	358	39	95.8	.125	.14
July	780	23	122	.159	.18
August	2,040	44	643	.837	.96
September	295	32	88.8	.116	.13
The year	7,000	.7	455	.592	8.04

LICKING RIVER AT CATAWBA, KY.

LOCATION.—Water-stage recorder three-quarters of a mile east of Catawba, Pendleton County, and three-quarters of a mile above mouth of Kinkaid Creek. Zero of gage is 498.37 feet above mean sea level.

DRAINAGE AREA.—3,300 square miles.

RECORDS AVAILABLE.—July, 1928, to September, 1931. July, 1916, to September, 1920 (gage heights only), at site half a mile downstream.

EXTREMES.—Maximum discharge during year, 35,400 second-feet Apr. 4 (gage height, 26.2 feet); minimum, 2.5 second-feet Oct. 14, 18 (gage height, 4.16 feet).

1929–1931: Maximum discharge, 43,200 second-feet Feb. 27, 1929 (gage height, 29.9 feet); minimum, 2.5 second-feet Aug. 5, Oct. 14, 18, 1930. Flood of Apr. 21, 1920, reached a stage of 36.9 feet.

REMARKS.—Records excellent.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	5.7	26	39	81	1,580	8,600	3,890	422	164	358	505
2	6.4	7.2	29	39	78	2,520	10,500	2,750	398	134	284	472
3	7.2	8.0	31	39	73	1,720	14,100	2,160	440	128	222	1,520
4	7.2	7.2	29	37	69	1,500	31,000	1,810	352	167	192	1,270
5	8.0	8.0	33	55	64	1,280	18,200	1,580	305	1,750	192	748
6	10	7.2	39	105	59	1,120	10,200	1,400	274	2,420	774	561
7	11	7.2	39	187	59	2,190	6,200	1,320	250	1,400	725	526
8	9.0	7.2	34	183	64	7,480	5,080	1,200	231	1,160	695	422
9	8.0	6.4	31	128	108	7,480	3,610	1,160	213	732	498	325
10	6.4	8.0	31	100	738	7,640	2,530	1,400	204	446	434	279
11	5.7	10	31	94	1,560	6,040	2,360	2,420	187	325	453	284
12	4.4	11	31	89	1,760	4,170	3,610	2,860	183	255	364	200
13	3.8	11	33	111	2,590	3,480	4,320	2,640	209	204	594	179
14	3.3	9.0	33	160	6,150	3,160	3,480	6,040	187	160	1,860	164
15	3.3	9.0	31	183	2,860	2,980	2,860	2,980	192	131	2,700	164
16	3.8	8.0	49	175	2,800	2,580	2,160	2,530	171	111	2,480	144
17	3.8	8.0	61	152	3,020	2,110	1,810	2,010	148	105	1,370	217
18	3.3	8.0	59	141	4,630	1,760	1,540	1,580	144	97	816	250
19	2.9	9.0	57	141	3,750	1,580	1,320	1,320	305	137	1,880	164
20	2.9	9.0	51	134	3,280	1,360	1,160	1,120	255	440	1,400	124
21	3.3	11	47	121	2,310	1,200	1,080	1,000	222	792	3,060	121
22	3.8	13	45	124	1,720	1,120	7,670	900	662	888	4,320	179
23	4.4	16	43	118	1,400	1,020	15,500	800	650	816	3,840	152
24	5.0	19	39	111	1,160	912	16,200	688	688	3,260	2,210	118
25	4.4	23	39	108	976	952	12,700	650	486	3,350	2,210	152
26	3.8	25	45	105	816	1,320	12,300	610	336	2,530	2,310	351
27	5.7	23	57	103	688	1,860	15,500	575	245	1,450	2,060	439
28	5.7	23	53	97	620	6,770	16,400	519	196	936	1,360	310
29	5.7	23	49	91	-------	11,300	12,000	472	167	672	1,040	255
30	5.7	26	45	86	-------	12,800	7,000	428	164	492	848	217
31	5.0	-------	43	83	-------	10,800	-------	434	-------	369	658	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11	2.9	5.49	0.0017	0.002
November	26	5.7	12.2	.0037	.004
December	61	26	40.7	.012	.01
January	187	37	111	.034	.04
February	6,150	59	1,530	.464	.48
March	12,800	912	3,670	1.11	1.28
April	31,000	1,080	8,370	2.54	2.83
May	3,890	428	1,560	.473	.55
June	688	144	296	.090	.10
July	3,350	97	839	.254	.29
August	4,320	192	1,360	.412	.48
September	1,520	118	360	.109	.12
The year	31,000	2.9	1,500	.455	6.19

SOUTH FORK OF LICKING RIVER AT HAYES, KY.

LOCATION.—Chain gage at county highway bridge half a mile northeast of Hayes, Pendleton County, and 2½ miles south of Falmouth. Zero of age is 538.10 feet above mean sea level.

DRAINAGE AREA.—922 square miles.

RECORDS AVAILABLE.—May, 1928, to September, 1931 (dsicontinued); July, 1916, to July, 1920, at datum 2 feet higher.

EXTREMES:—Maximum discharge during year, 15,200 second-feet Apr. 4 (gage height, 12.88 feet); no flow during several periods.

1928–1931: Maximum discharge, 22,600 second-feet June 30, 1928 (gage height, 15.9 feet); no flow during several periods in 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	7.0	13	515	1,050	780	29	32	76	45
2	0	0	6.5	12	660	2,900	560	30	28	54	55
3	0	0	6.5	11	515	5,540	470	29	26	50	410
4	0	0	5.6	9.5	450	11,700	390	29	25	40	315
5	0	0.1	9.0	9.5	430	5,220	332	27	1,210	40	153
6	0	0.2	26	10	350	2,450	280	26	1,210	42	84
7	0	0.1	25	9.0	635	1,490	298	26	538	32	58
8	0	0.1	29	10	3,200	980	265	26	315	29	42
9	0	0.1	33	26	3,050	780	236	25	221	26	32
10	0	0	38	207	1,810	635	221	22	148	23	31
11	0	0	23	135	1,300	515	193	21	115	20	29
12	0.1	0	23	97	980	538	190	20	82	18	26
13	0	0	20	450	840	585	188	22	55	22	25
14	0	0	23	1,930	780	470	182	20	46	25	32
15	0.1	0	16	720	720	410	185	19	42	26	29
16	.1	0	15	492	610	332	163	20	37	28	26
17	0.1	0	13	780	492	298	140	37	33	26	23
18	0	0	14	1,130	390	280	128	33	29	25	19
19	0	0	13	1,050	315	236	113	30	104	26	18
20	0	0	13	840	280	207	97	26	78	33	17
21	0	0	20	538	250	193	76	26	54	720	17
22	0	0	19	390	221	4,260	69	180	50	560	16
23	0	0	15	332	193	5,220	67	171	132	720	15
24	0	0	16	265	180	3,950	57	250	1,490	370	16
25	0	7.0	21	236	163	1,490	54	207	980	221	47
26	0	9.0	20	193	143	1,930	50	130	515	150	207
27	0	8.5	17	163	148	4,420	43	76	315	110	135
28	0	8.5	15	145	1,810	3,950	45	52	193	122	57
29	0	9.0	13	-------	4,260	1,700	40	38	132	97	35
30	0.1	10	14	-------	3,050	1,050	35	37	94	60	28
31	-------	8.0	13	-------	1,490	-------	32	-------	67	50	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	0.1	0	0.02	----------	----------
December	10	0	1.96	0.0021	0.002
January	38	5.6	17.5	.019	.02
February	1,930	9.0	364	.395	.41
March	4,260	143	975	1.06	1.22
April	11,700	193	2,160	2.34	2.61
May	780	32	193	.209	.24
June	250	19	56.1	.061	.07
July	1,490	25	271	.294	.34
August	720	18	124	.134	.15
September	410	15	68.1	.074	.08
The year	11,700	0	350	.380	5.14

NOTE.—No flow during October.

MIAMI RIVER BASIN

MIAMI RIVER AT SIDNEY, OHIO

LOCATION.—Water-stage recorder at North Street Bridge at Sidney, Shelby County. Zero of gage is 924.74 feet above mean sea level.

DRAINAGE AREA.—543 square miles.

RECORDS AVAILABLE.—February, 1914, to September, 1931.

EXTREMES.—Maximum discharge during year, about 2,280 second-feet Apr. 4 (gage height, 5.84 feet); minimum, 23 second-feet June 21, 22 (gage height, 0.98 foot).

1914–1931: Maximum discharge, about 20,700 second-feet Mar. 20, 1927 (gage height, 14.4 feet); minimum, 9 second-feet Sept. 18, 19, 1917 (gage height, −1.5 feet).

Maximum stage known, 19.6 feet, present datum, Mar. 25, 1913 (discharge, estimated by Miami Conservancy District, 44,000 second-feet).

REMARKS.—Records fair prior to July 8 and good thereafter. Discharge estimated Oct. 1–14, Dec. 29–Jan. 2.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		40	133	58	58	138	522	171	56	107	44	53
2		53	128	56	56	136	660	140	50	98	50	54
3	70	50	108	61	53	128	1,520	124	42	69	50	64
4		63	74	67	48	128	2,120	108	46	54	48	59
5		52	63	76	50	126	1,610	93	41	53	44	59
6		61	74	126	46	119	1,060	89	35	65	42	53
7		52	80	140	65	133	710	97	45	98	38	38
8	95	52	78	121	97	199	540	91	58	110	33	39
9		60	72	93	108	271	445	93	91	80	35	47
10		44	67	74	95	264	392	93	76	60	64	45
11		60	63	65	85	226	427	97	56	47	99	40
12	95	65	52	65	74	211	427	91	44	49	66	35
13		84	52	60	138	257	422	101	41	33	69	36
14		76	50	52	409	360	400	104	42	42	73	75
15	47	67	47	61	324	418	418	89	37	44	59	109
16	53	65	61	56	226	376	271	80	42	42	51	80
17	53	58	44	50	185	316	148	78	40	166	35	61
18	42	61	53	50	205	306	91	84	39	192	50	54
19	53	56	48	85	250	336	76	78	33	228	56	54
20	39	58	48	110	278	376	70	80	33	173	80	51
21	50	53	50	87	268	388	80	82	27	389	81	40
22	52	46	47	99	229	388	210	65	189	788	53	50
23	53	48	53	82	202	348	468	65	302	375	44	51
24	53	41	41	65	187	320	302	65	186	180	30	68
25	48	54	44	63	171	313	205	61	106	114	39	50
26	60	44	53	63	158	274	713	54	74	82	75	60
27	48	50	56	69	140	217	950	50	72	64	113	73
28	63	34	60	74	143	500	580	46	71	56	92	99
29	47	42	58	70	-------	1,060	360	41	140	45	84	80
30	53	76	56	65	-------	895	226	40	160	49	61	61
31	50	-------	53	63	-------	605	-------	52	-------	45	48	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	----------	39	66.7	0.122	0.14
November	84	34	55.5	.102	.11
December	133	41	63.4	.116	.13
January	140	50	75.0	.138	.16
February	409	46	155	.284	.30
March	1,060	119	327	.600	.69
April	2,120	70	547	1.00	1.12
May	171	40	83.9	.154	.18
June	302	27	75.8	.139	.16
July	788	33	129	.237	.27
August	113	30	58.3	.107	.12
September	109	35	57.9	.106	.12
The year	2,120	30	141	.259	3.50

MIAMI RIVER AT TAYLORSVILLE, OHIO

LOCATION.—Water-stage recorder at outlet works of Taylorsville Dam, three-quarters of a mile north of Taylorsville, Montgomery County. Zero of gage is 700.00 feet above mean sea level.

DRAINAGE AREA.—1,160 square miles.

RECORDS AVAILABLE.—January, 1922, to September, 1931. January, 1914, to September, 1917, at Tadmor, 1½ miles upstream.

EXTREMES.—Maximum discharge during year, 4,750 second-feet Apr. 4 (gage height, 66.53 feet); minimum, 36 second-feet Dec. 31 (gage height, 61.21 feet).

1922–1931: Maximum discharge, 26,700 second-feet June 9, 1924 (gage height, 72.6 feet); minimum, that of Dec. 31, 1930.

Flood of March, 1913, reached a stage of 25.4 feet at Tadmor (discharge, estimated by Miami Conservancy District, 127,000 second-feet).

REMARKS.—Records good except those estimated because of ice effect, which are fair. Flow at high stages automatically regulated at retarding basins on Miami River just above station and on Loramie Creek at Lockington. Gage-height record and some discharge measurements furnished by Miami Conservancy District.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	102	115	e 74	134	208	710	542	137	245	217	162
2	124	96	134	e 72	131	196	875	465	144	558	190	162
3	121	99	e 137	e 74	124	192	2,390	415	134	294	155	155
4	121	108	e 134	e 86	124	185	4,160	366	124	177	148	159
5	93	118	134	149	118	185	2,730	343	141	144	144	181
6	83	111	137	216	118	189	1,780	320	124	137	134	173
7	99	102	121	e 185	131	185	1,220	343	118	124	131	148
8	121	90	134	e 169	134	237	910	320	115	134	124	127
9	208	74	134	e 162	166	366	770	320	118	155	131	118
10	297	74	127	e 155	185	390	710	320	141	137	155	118
11	204	83	115	169	177	366	710	320	137	118	255	118
12	151	102	115	155	162	320	770	297	124	102	224	108
13	124	121	108	141	177	343	680	297	115	90	204	99
14	115	111	105	121	371	516	650	297	105	90	192	93
15	118	121	96	e 118	542	680	622	297	118	83	177	93
16	105	121	e 93	e 108	366	595	568	275	102	90	159	207
17	118	111	e 86	e 102	297	490	490	266	99	122	148	173
18	108	111	e 83	e 108	279	415	415	249	99	2,310	141	166
19	102	108	e 83	137	320	440	366	245	99	1,420	251	127
20	102	105	e 86	e 162	366	490	390	245	90	622	333	102
21	102	105	e 86	e 162	390	490	465	237	83	923	271	96
22	99	105	e 86	e 144	343	490	748	224	120	2,280	241	96
23	102	99	e 83	e 134	297	465	1,060	212	160	1,250	173	106
24	102	90	e 80	e 131	279	440	945	192	275	640	141	680
25	105	99	86	e 134	257	415	770	185	220	390	131	262
26	99	e 96	96	141	245	390	1,400	181	155	284	118	224
27	99	e 90	108	134	224	343	2,180	166	131	232	509	232
28	105	83	105	148	208	756	1,490	118	115	196	439	237
29	111	83	96	148	-------	1,880	1,040	131	161	181	530	216
30	148	96	90	151	-------	1,360	680	144	212	166	271	208
31	115	-------	e 86	141	-------	875	-------	144	-------	151	196	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	297	83	123	0.106	0.12
November	121	74	100	.086	.10
December	137	80	106	.091	.10
January	216	72	136	.117	.13
February	542	118	238	.205	.21
March	1,880	185	480	.414	.48
April	4,160	366	1,090	.940	1.05
May	542	118	273	.235	.27
June	275	83	134	.116	.13
July	2,310	83	447	.385	.44
August	530	118	214	.184	.21
September	680	93	172	.148	.17
The year	4,160	72	292	.252	3.41

e Estimated because of ice effect.

MIAMI RIVER AT DAYTON, OHIO

LOCATION.—Water-stage recorder 1,000 feet below Main Street Bridge at Dayton, Montgomery County. Prior to July 24 staff gage at Main Street Bridge. Zero of Main Street gage is 721.00 feet above mean sea level. Zero of recording gage is 700.00 feet above mean sea level.

DRAINAGE AREA.—2,510 square miles.

RECORDS AVAILABLE.—March, 1905, to December, 1909; April, 1913, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,100 second-feet Apr. 4 (gage height, 6.0 feet); minimum, 234 second-feet July 16–17 (gage height, 0.3 foot).

1913–1931: Maximum discharge at Millers Ford, 3½ miles below gage, estimated by Miami Conservancy District, 59,800 second-feet Apr. 21, 1920 (gage height, 16.0 feet, old datum); minimum, 122 second-feet Sept. 5, 8, 1925.

Maximum stage known, 29.0 feet Mar. 26, 1913 (discharge, estimated by Miami Conservancy District, 250,000 second-feet).

REMARKS.—Records good. Discharge estimated Jan. 1, 2, 21. Flood flow automatically regulated at four retarding basins above station. Gage-height record furnished by United States Weather Bureau and Miami Conservancy District. Some discharge measurements made by Miami Conservancy District. Miami & Erie Canal at Dayton was abandoned Feb. 26, 1929.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	360	389	684	310	332	603	1,850	1,410	483	1,300	397	698
2	360	389	529	310	332	603	2,110	1,300	448	1,040	468	646
3	360	332	492	310	360	603	3,390	1,190	414	942	407	582
4	310	332	456	332	360	603	9,100	1,090	414	718	373	569
5	332	332	456	332	360	603	5,930	1,090	448	557	355	660
6	332	332	529	684	360	603	3,550	1,040	483	520	334	617
7	332	332	456	644	422	529	2,660	1,040	414	448	318	511
8	389	360	456	603	389	770	2,130	990	483	384	311	446
9	456	332	456	492	456	770	1,760	942	483	414	311	418
10	603	332	456	456	492	860	1,410	990	483	384	373	373
11	603	456	456	456	422	815	1,240	1,090	448	354	505	378
12	456	389	456	456	422	770	1,640	990	448	354	589	343
13	422	360	456	422	456	770	1,410	895	448	304	639	318
14	389	360	456	389	566	908	1,240	850	354	284	632	304
15	389	360	456	332	1,060	1,490	1,240	805	354	265	543	304
16	389	389	422	332	860	1,380	1,190	805	354	265	456	418
17	422	360	360	332	770	1,270	1,090	718	354	250	388	434
18	389	360	360	332	770	1,110	990	718	354	2,130	364	873
19	389	360	360	332	770	1,160	990	762	354	3,390	672	532
20	389	360	360	389	770	1,060	895	805	354	1,520	755	397
21	389	360	332	389	815	1,060	895	762	354	2,000	711	347
22	360	360	332	389	770	1,060	1,410	718	635	4,190	517	326
23	360	389	332	360	770	1,000	1,880	676	483	3,090	446	334
24	360	360	332	360	770	1,060	1,520	635	557	1,880	402	926
25	360	389	332	389	694	1,000	1,640	635	557	1,060	355	720
26	332	422	332	389	684	955	2,000	557	520	815	338	698
27	332	389	332	389	644	908	2,800	557	448	668	1,440	660
28	360	360	332	389	603	1,270	2,940	557	483	569	1,720	610
29	360	332	332	389	-------	4,190	2,260	483	596	492	2,500	549
30	360	529	310	389	-------	3,390	1,760	414	635	440	1,440	523
31	389	-------	310	360	-------	2,240	-------	483	-------	429	918	-------

Monthly discharge, in second-feet, of Miami River at Dayton, Ohio, 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	603	310	388	0.155	0.18
November	456	332	370	.147	.16
December	684	310	410	.163	.19
January	684	310	401	.160	.18
February	1,060	332	588	.234	.24
March	4,190	529	1,140	.454	.52
April	9,100	895	2,160	.861	.96
May	1,410	414	839	.334	.39
June	635	354	455	.181	.20
July	4,190	250	1,010	.402	.46
August	2,500	311	644	.257	.30
September	926	304	517	.206	.23
The year	9,100	250	744	.296	4.01

MIAMI RIVER NEAR MIAMISBURG, OHIO

LOCATION.—Water-stage recorder in sec. 35, Miami Township, at Cleveland, Cincinnati, Chicago & St. Louis Railway bridge 1½ miles south of Miamisburg and 2½ miles below mouth of Bear Creek. Zero of gage is 677.06 feet. above mean sea level.

DRAINAGE AREA.—2,720 square miles.

RECORDS AVAILABLE.—August, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,680 second-feet Apr. 4 (gage height, 6.71 feet); minimum, 110 second-feet Oct. 5 (gage height, 0.23 foot).

1924–1931: Maximum discharge, 52,600 second-feet Feb. 27, 1929 (gage height, 16.5 feet); minimum, that of Oct. 5, 1930.

REMARKS.—Records good Mar. 15 to May 15, fair for the remainder of the year. Discharge estimated Dec. 3–15, 20–31, Jan. 1–19, 21–29.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	325	412	477	280	484	611	2,100	1,550	590	1,720	332	727
2	453	407	453	270	490	648	2,430	1,390	604	1,390	390	694
3	390	471	470	280	477	626	4,250	1,230	619	1,390	412	570
4	374	436	500	300	477	626	8,970	1,190	634	823	363	516
5	257	371	520	400	471	619	6,530	1,090	648	619	342	626
6	436	396	560	850	465	619	4,020	1,050	619	626	337	576
7	396	396	500	800	529	641	2,970	1,040	694	535	305	490
8	447	369	470	740	529	752	2,430	1,020	778	465	251	484
9	556	374	480	680	590	877	2,100	970	727	465	301	459
10	805	369	520	600	641	1,030	1,880	990	735	471	563	453
11	686	412	500	560	634	1,020	1,720	990	735	447	634	418
12	563	465	480	560	626	960	1,720	970	787	363	744	442
13	522	453	430	520	686	940	1,600	970	760	407	778	326
14	542	424	380	490	778	1,180	1,490	913	694	396	686	412
15	484	424	440	450	1,150	1,600	1,390	904	859	401	583	477
16	396	418	401	430	1,060	1,720	1,290	814	931	503	447	418
17	474	412	385	410	922	1,490	1,230	886	823	438	459	542
18	399	396	390	420	868	1,290	1,080	760	886	3,620	424	922
19	407	396	385	470	823	1,180	960	719	752	3,630	583	727
20	490	390	380	490	895	1,170	990	727	663	1,660	940	484
21	442	374	380	500	922	1,240	1,240	656	648	2,690	778	424
22	430	342	370	490	895	1,200	1,770	678	877	4,290	671	418
23	370	342	360	480	877	1,180	2,210	648	922	1,780	570	430
24	412	374	370	490	841	1,130	2,040	570	1,000	1,660	556	858
25	401	363	370	510	787	1,080	1,770	542	970	877	516	895
26	396	369	360	490	735	1,030	2,580	570	805	583	497	841
27	430	333	380	480	719	1,000	3,860	542	694	447	1,350	626
28	459	306	370	500	663	1,880	3,160	509	583	369	2,100	611
29	453	353	350	510	-------	4,050	2,380	490	990	326	2,910	549
30	453	447	320	497	-------	3,420	1,940	516	1,010	296	2,080	503
31	459	-------	300	490	-------	2,430	-------	604	-------	353	1,040	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	805	257	455	0.167	0.19
November	471	306	393	.144	.16
December	560	300	421	.155	.18
January	850	270	498	.183	.21
February	1,150	465	716	.263	.27
March	4,050	611	1,270	.467	.54
April	8,970	960	2,470	.908	1.01
May	1,550	490	855	.314	.36
June	1,010	583	768	.282	.31
July	4,290	296	1,100	.404	.47
August	2,910	251	740	.272	.31
September	922	326	564	.207	.23
The year	8,970	251	853	.314	4.24

MIAMI RIVER AT HAMILTON, OHIO

LOCATION.—Water-stage recorder in NE. ¼ sec. 6, T. 1 N., R. 3 E., 1,000 feet below Columbia Bridge at Hamilton. Zero of gage is 500.00 feet above mean sea level.

DRAINAGE AREA.—3,640 square miles.

RECORDS AVAILABLE.—April, 1927, to September, 1931; February, 1910, to September, 1917, at a site seven-tenths of a mile upstream.

EXTREMES.—Maximum discharge during year, 14,500 second-feet Apr. 3 (gage height, 66.77 feet); minimum, 141 second-feet July 14 (gage height, 57.21 feet).

1927–1931: Maximum discharge, 70,300 second-feet Feb. 26, 1929 (gage height, 76.5 feet); minimum, that of July 14, 1931.

Maximum stage known, 599.2 feet (mean sea level datum) at former gage site Mar. 26, 1913.

REMARKS.—Records excellent. The Miami & Erie Canal diverted water from this basin above station until Nov. 1, 1930, when canal was abandoned; diversion not included in tables of discharge. Flow at low stages is regulated for power at Hamilton. Flow at high stages is automatically regulated by five retarding basins above station. Gage-height record and some discharge measurements furnished by Miami Conservancy District.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	461	497	522	452	450	710	2,930	2,140	766	1,590	652	1,210
2	435	450	556	436	575	682	3,760	1,850	730	1,530	452	1,500
3	527	480	526	417	440	611	7,380	1,660	690	1,590	710	1,300
4	500	480	589	442	534	583	11,200	1,550	658	1,240	638	993
5	438	459	604	464	436	452	7,900	1,420	660	902	520	844
6	419	439	666	971	459	531	5,540	1,350	632	985	586	753
7	434	440	604	980	496	743	4,180	1,310	658	770	434	574
8	511	454	562	910	526	941	3,370	1,250	731	679	402	604
9	428	451	578	854	626	1,070	2,870	1,210	771	562	420	629
10	625	444	598	696	612	1,120	2,580	1,170	708	586	2,020	613
11	850	432	620	594	688	1,180	2,360	1,190	620	515	1,150	544
12	666	466	552	612	630	1,140	2,190	1,150	648	436	1,590	490
13	652	520	540	568	708	1,160	2,090	1,110	592	465	1,110	446
14	556	510	425	524	844	1,340	1,950	1,160	537	403	1,080	455
15	541	500	574	482	970	1,640	1,860	974	1,220	428	893	455
16	528	470	472	438	1,260	1,950	1,690	961	936	471	786	510
17	511	472	471	500	1,170	1,790	1,660	1,370	846	430	532	478
18	468	458	444	426	1,050	1,590	1,500	1,160	772	2,220	604	627
19	444	466	490	584	969	1,450	1,360	949	725	5,020	694	902
20	406	492	494	479	946	1,410	1,240	911	615	2,630	1,840	642
21	432	486	468	605	1,050	1,410	1,610	931	612	4,010	1,130	548
22	492	426	453	514	1,020	1,430	2,340	918	1,500	4,040	940	538
23	469	418	418	662	1,010	1,370	2,520	906	1,310	4,320	768	545
24	454	430	443	554	984	1,310	2,580	853	1,130	2,730	540	474
25	442	424	444	513	930	1,230	2,300	820	993	1,770	625	1,130
26	435	458	424	634	809	1,240	3,280	776	818	1,300	782	1,850
27	409	444	431	504	802	1,220	4,620	736	846	1,070	806	1,030
28	460	405	436	632	789	2,840	4,320	747	618	888	1,920	828
29	490	396	458	539	-------	4,920	3,240	648	1,550	757	2,330	804
30	509	448	450	472	-------	4,470	2,630	858	1,940	715	2,410	718
31	467	-------	454	534	-------	3,370	-------	750	-------	668	1,580	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	850	406	499	----------	----------
November	520	396	457	0.126	0.14
December	666	418	509	.140	.16
January	980	417	580	.159	.18
February	1,260	436	778	.214	.22
March	4,920	452	1,510	.415	.48
April	11,200	1,240	3,300	.907	1.01
May	2,140	648	1,120	.308	.36
June	1,940	537	861	.237	.26
July	5,020	403	1,470	.404	.47
August	2,410	402	998	.274	.32
September	1,850	446	768	.211	.24
The year	11,200	396	1,070	----------	----------

LORAMIE CREEK AT LOCKINGTON, OHIO

LOCATION.—Water-stage recorder in NE. ¼ sec. 30, T. 7 N., R. 6 E., just below Lockington Dam and half a mile northwest of Lockington. Zero of gage is 800.00 feet above mean sea level.

DRAINAGE AREA.—261 square miles.

RECORDS AVAILABLE.—October, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,660 second-feet Apr. 3 (gage height, 80.23 feet); minimum, 2.0 second-feet Aug. 19.

1915–1931: Maximum discharge, 9,900 second-feet May 7, 1916 (gage height, 10.4 feet, original datum); minimum, that of Aug. 19, 1931.

Maximum known stage, 15.6 feet, original datum, Mar. 25, 1913 (discharge, estimated by Miami Conservancy District, 25,600 second-feet).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.5	6.8	13	6.2	28	13	83	50	11	218	75	48
2	6.2	6.8	9.4	6.2	22	13	281	40	10	320	25	46
3	5.6	7.5	17	4.5	18	22	1,120	39	10	73	9.2	61
4	6.2	7.5	8.9	4.5	12	16	723	35	11	43	5.3	102
5	5.6	6.8	8.2	6.2	10	18	271	29	13	28	4.4	82
6	5.6	6.2	9.6	37	8.2	14	140	26	11	25	4.7	59
7	4.5	6.8	11	33	9.6	14	96	25	11	25	4.1	49
8	23	6.8	13	27	41	52	84	26	13	31	3.8	39
9	80	6.2	12	17	35	92	93	25	16	22	4.4	33
10	28	6.8	10	9.6	24	63	90	25	13	12	103	23
11	13	6.8	9.6	8.9	17	58	202	23	10	4.7	53	16
12	8.2	9.6	9.6	8.9	13	55	133	20	10	3.8	28	12
13	6.2	17	8.9	8.9	24	96	81	20	8.9	4.7	28	13
14	6.2	19	8.9	8.9	110	164	76	19	17	4.1	15	13
15	6.2	13	9.6	8.2	52	155	65	17	11	3.2	5.0	12
16	6.2	6.8	8.9	7.5	41	103	59	13	15	3.5	3.2	28
17	6.2	7.5	8.2	8.2	40	77	68	18	44	4.4	2.9	41
18	6.2	6.8	8.2	10	48	64	70	18	30	310	2.4	25
19	6.2	6.2	7.5	38	63	74	78	15	20	170	33	14
20	6.2	6.2	8.2	45	67	78	86	22	15	127	125	20
21	6.2	6.8	7.5	30	57	62	121	16	14	562	101	18
22	6.2	6.8	7.5	18	48	50	336	12	13	405	38	14
23	6.2	7.5	7.5	12	42	40	258	8.0	11	177	20	484
24	6.2	7.5	7.5	9.6	35	35	188	11	9.6	84	12	178
25	6.2	6.8	7.5	13	33	34	165	8.9	9.6	50	13	92
26	6.2	7.5	8.2	16	25	28	572	7.9	10	35	398	142
27	6.2	6.8	8.2	16	20	25	368	6.9	10	24	235	164
28	6.8	6.8	8.2	13	15	591	236	6.5	14	16	397	88
29	6.2	6.8	8.2	13	-------	349	138	5.0	9.8	8.9	159	58
30	6.8	7.5	7.5	14	-------	128	68	6.1	68	6.1	82	59
31	7.5	-------	6.2	18	-------	84	-------	9.4	-------	102	58	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	80	4.5	10.1	May	50	5.0	19.4
November	19	6.2	7.93	June	68	8.9	15.6
December	17	6.2	9.15	July	562	3.2	93.6
January	45	4.5	15.4	August	398	2.4	66.0
February	110	8.2	34.2	September	484	12	67.8
March	591	13	86.0				
April	1,120	59	212	The year	1,120	2.4	53.0

STILLWATER RIVER AT COVINGTON, OHIO

LOCATION.—Water-stage recorder in SE. ¼ sec. 30, T. 8 N., R. 5 E., 100 feet below Bridge Street Bridge in Covington and half a mile below mouth of Greenville Creek. Zero of gage is 870.00 feet above mean sea level.
DRAINAGE AREA.—438 square miles.
RECORDS AVAILABLE.—December, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 2,280 second-feet Apr. 3 (gage height, 6.44 feet); minimum, 16 second-feet July 15 (gage height, 1.83 feet).
REMARKS.—Records excellent except those estimated Dec. 1–5, 12–31, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		23	48	61	342	183	52	499	63	238
2		40	52	67	426	154	45	298	36	160
3	60	36	46	63	1,680	145	43	228	33	368
4		23	54	59	1,620	128	51	144	33	357
5		80	46	66	870	116	48	98	29	210
6	57	211	47	50	560	123	45	65	29	138
7	74	161	70	61	410	110	39	65	31	98
8	78	81	114	103	321	120	51	60	30	84
9	68	73	126	172	269	102	42	57	25	70
10	52	65	97	148	242	113	43	39	187	58
11	60	53	82	127	223	97	42	43	406	50
12		62	68	126	193	90	33	29	199	58
13	50	54	81	227	177	101	37	35	107	42
14		48	168	494	164	96	72	32	68	48
15		54	136	536	146	94	106	26	54	40
16		49	116	342	138	87	104	29	30	53
17		46	102	244	122	69	77	26	38	57
18	40	46	98	200	125	77	57	475	36	58
19		131	104	228	110	68	44	276	49	57
20		113	125	305	105	80	37	254	70	41
21		72	119	254	132	74	30	648	81	51
22		65	102	208	258	78	43	1,180	60	28
23	35	53	89	168	242	71	57	559	33	182
24		55	98	153	188	73	61	276	41	73
25		52	80	160	165	57	67	146	35	80
26		58	81	135	590	66	67	95	1,090	55
27		58	73	107	659	51	38	67	915	142
28		65	67	1,100	389	60	35	57	1,470	95
29	30	60	-------	1,040	286	50	89	50	1,450	53
30		68	-------	569	217	46	1,040	39	619	58
31		54	-------	381	-------	57	-------	69	352	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
December	-------	-------	46.6	0.106	0.12
January	211	23	68.0	.155	.18
February	168	46	88.9	.203	.21
March	1,100	50	257	.587	.68
April	1,680	105	379	.865	.97
May	183	46	91.5	.209	.24
June	1,040	30	86.5	.197	.22
July	1,180	26	192	.438	.50
August	1,470	25	248	.566	.65
September	368	28	103	.235	.26

STILLWATER RIVER AT ENGLEWOOD, OHIO

LOCATION.—Water-stage recorder in NW. ¼ sec. 23, T. 5 N., R. 5 E., 1,000 feet below Englewood Dam and half a mile southeast of Englewood. Zero of gage is 700.00 feet above mean sea level.

DRAINAGE AREA.—646 square miles.

RECORDS AVAILABLE.—November, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,720 second-feet Apr. 4 (gage height, 75.67 feet); minimum, 27 second-feet Oct. 4, Aug. 7 (gage height, 70.42 feet).

1925–1931: Maximum discharge, 8,940 second-feet Jan. 15, 1930 (gage height, 79.60 feet); minimum, 15 second-feet Oct. 14, 1928 (gage height, 70.28 feet).

Peak discharge during flood of March, 1913, estimated by Miami Conservancy District, 85,400 second-feet.

REMARKS.—Records good. Flow automatically retarded at high stages at Englewood retarding basin. Gage-height record and some discharge measurements furnished by Miami Conservancy District.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	46	50	58	69	86	390	264	77	671	65	264
2	44	56	69	49	65	73	458	229	74	382	84	199
3	44	43	80	47	61	81	1,350	211	70	264	66	157
4	33	49	87	50	64	73	2,550	194	66	207	60	266
5	43	50	83	65	59	76	1,500	176	68	156	52	248
6	33	47	71	109	63	76	853	165	64	126	45	173
7	39	48	76	199	70	76	584	168	70	104	37	132
8	50	50	75	144	90	96	436	161	62	88	43	100
9	90	46	85	103	114	128	454	164	68	79	45	111
10	132	45	75	87	122	172	315	149	58	72	82	73
11	96	51	77	84	108	148	280	155	58	70	147	89
12	71	53	61	77	97	135	255	146	56	59	236	44
13	52	55	66	71	103	159	224	132	51	40	176	74
14	55	57	66	65	110	278	214	146	54	46	126	51
15	47	58	52	65	149	478	187	131	97	45	96	52
16	48	61	54	63	143	418	174	130	129	51	58	73
17	45	47	56	59	131	294	156	136	122	43	61	72
18	49	63	52	67	122	244	161	122	104	703	56	88
19	48	60	50	64	117	212	149	112	87	382	172	72
20	46	42	58	114	120	245	139	120	67	282	110	66
21	46	43	54	121	125	271	165	120	66	270	75	55
22	41	46	45	99	125	242	251	118	79	935	71	49
23	48	54	49	70	117	210	301	112	82	320	73	55
24	50	45	52	72	104	180	274	105	79	392	74	100
25	41	47	56	72	96	163	237	96	78	242	56	89
26	48	47	47	66	95	164	456	98	76	164	195	101
27	42	51	54	70	91	132	894	78	87	125	913	87
28	58	43	60	88	89	497	595	80	76	96	881	106
29	52	46	45	62	-------	1,440	412	73	84	90	1,550	106
30	55	58	51	72	-------	823	315	81	550	79	793	85
31	51	-------	62	80	-------	484	-------	77	-------	69	395	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	132	33	53.0	0.082	0.09
November	63	42	50.2	.078	.09
December	87	45	61.9	.096	.11
January	199	47	81.0	.125	.14
February	149	59	101	.156	.16
March	1,440	73	263	.407	.47
April	2,550	139	491	.760	.85
May	264	73	137	.212	.24
June	550	51	92.0	.142	.16
July	935	40	231	.358	.41
August	1,550	37	222	.344	.40
September	266	44	108	.167	.19
The year	2,550	33	158	.245	3.31

GREENVILLE CREEK NEAR GREENVILLE, OHIO

LOCATION.—Chain gage at highway bridge on west line of sec. 31, T. 10 N., R. 3 E., 1½ miles east of Greenville, Darke County.

DRAINAGE AREA.—141 square miles.

RECORDS AVAILABLE.—April, 1925, to March, 1931 (discontinued). October, 1923, to April, 1925, at site half a mile downstream.

EXTREMES.—Maximum discharge during period October to March, 490 second-feet Mar. 28 (gage height, 4.40 feet); minimum, 6 second-feet Jan. 17.

1923–1931: Maximum discharge, 4,200 second-feet June 9, 1924; minimum, that of Jan. 17, 1931.

REMARKS.—Records good except those for January, February, March, which are fair. Discharge estimated Nov. 28, 29, Dec. 22–29, Jan. 6–12.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	14	12	59	19	12	18	16	10	17	16	8	33	98
2	12	10	44	19	16	15	17	8	16	14	6	26	71
3	16	15	31	17	12	16	18	11	15	16	11	29	59
4	14	14	27	20	10	10	19	14	15	29	29	29	81
5	9	12	26	56	12	21	20	10	12	33	23	31	78
6	14	11	41		13	9	21	9	16	19	16	31	73
7	15	10	34		29	16	22	9	17	16	13	31	56
8	30	14	31	40	43	59	23	10	15	14	12	26	50
9	41	14	27		35	54	24	12	16	13	16	21	43
10	23	16	24		28	50	25	14	14	12	11	24	43
11	16	16	27	13	13	45	26	9	19	11	18	21	41
12	12	19	34	12	15	37	27	16	12	11	16	17	43
13	14	22	23	12	29	104	28	17	11	10	20	17	490
14	15	16	22	9	45	172	29	16	10	10	12	------	278
15	10	19	22	8	43	347	30	12	33	10	15	------	164
							31	16	------	16	13	------	118

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	41	8	14.5	0.103	0.12
November	33	10	15.3	.109	.12
December	59	10	23.3	.165	.19
January	56	6	20.1	.143	.16
February	45	10	24.7	.175	.18
March	490	9	89.0	.631	.73

MAD RIVER NEAR SPRINGFIELD, OHIO

LOCATION.—Water-stage recorder in NW. ¼ sec. 16, R. 9, T. 4, 150 feet below Rock Run and 3 miles west of Springfield. Zero of gage is 881.47 feet above mean sea level.

DRAINAGE AREA.—485 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1931. January, 1904, to March, 1906, and February, 1914, to February, 1924, at site 1¾ miles upstream.

EXTREMES.—Maximum discharge during year, 2,720 second-feet Sept. 17 (gage height, 4.77 feet); minimum, 86 second-feet Dec. 29 (gage height, 1.38 feet).

1914–1931: Maximum discharge, 18,000 second-feet Feb. 26, 1929 (gage height, 14.9 feet); minimum, that of Dec. 29, 1930.

Maximum stage known, 19.2 feet (original gage datum) and 16.9 feet (present gage datum) Mar. 25, 1913 (discharge at railway bridge, between the gage sites, estimated by Miami Conservancy District, 55,400 second-feet).

REMARKS.—Records good except those for estimated periods, Jan. 6–19, Feb. 26 to Mar. 4, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	189	173	264	383	158		366	303	173	205	200	194
2	184	163	200	430	163	180	442	280	173	231	246	242
3	184	179	194	308	163		1,120	270	168	205	158	221
4	179	173	189	242	158		1,140	253	184	173	142	194
5	184	179	189	210	153	184	657	248	189	168	128	184
6	194	168	237		163	179	496	237	158	168	128	173
7	210	168	221		189	222	436	242	179	163	128	158
8	280	168	210	180	189	286	400	231	168	153	124	158
9	407	168	205		200	275	360	258	163	147	132	153
10	221	173	200		200	242	354	253	153	147	402	153
11	205	194	200		179	242	326	242	153	147	297	153
12	194	242	194		179	242	292	231	158	142	275	147
13	184	226	200	170	260	275	286	231	163	137	398	142
14	184	205	189		400	308	270	221	163	142	395	142
15	184	200	184		270	286	248	210	168	142	253	147
16	179	194	168		248	264	242	200	173	147	210	184
17	179	189	168	190	242	248	242	210	158	181	184	393
18	153	184	173		248	258	231	210	153	780	173	428
19	147	184	173		264	270	221	200	153	427	270	173
20	153	179	173	194	270	270	221	210	153	237	312	142
21	158	173	163	163	253	253	258	194	198	785	275	124
22	158	179	168	168	231	242	550	200	320	896	216	119
23	163	173	168	163	231	253	502	200	315	389	179	206
24	163	179	163	163	216	253	366	184	221	270	168	248
25	158	168	173	163	205	242	337	179	184	216	173	182
26	158	168	179	173		242	753	173	168	184	243	308
27	179	124	184	173	190	237	614	173	173	168	442	205
28	168	142	173	173		855	454	173	158	158	466	173
29	168	179	147	168		607	377	173	241	147	303	153
30	173	242	163	168	------	424	331	173	242	147	226	147
31	168	------	231	163	------	360	------	184	------	132	200	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	407	147	187	0.386	0.44
November	242	124	181	.373	.42
December	264	147	188	.388	.45
January	430	----------	197	.406	.47
February	400	153	214	.441	.46
March	855	----------	282	.581	.67
April	1,140	221	430	.887	.99
May	303	173	218	.449	.52
June	320	153	184	.379	.42
July	896	132	249	.513	.59
August	466	124	240	.495	.57
September	428	119	192	.396	.44
The year	1,140	119	230	.474	6.44

MAD RIVER NEAR DAYTON, OHIO

LOCATION.—Water-stage recorder in SW. ¼ sec. 7, T. 2, R. 8, just below Huffman Dam and 6 miles northeast of Dayton. Zero of gage is 700.00 feet above mean sea level.

DRAINAGE AREA.—632 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1931. November, 1914, to September, 1921, at a site 1 mile upstream.

EXTREMES.—Maximum discharge during year, 2,020 second-feet Apr. 4 (gage height, 81.70 feet); minimum, 145 second-feet Dec. 31 (gage height, 79.05 feet).

1924–1931: Maximum discharge, about 15,900 second-feet Feb. 26, 1929 (gage height, 87.9 feet); minimum, 123 second-feet Sept. 6–12, 1925 (gage height, 79.4 feet).

Maximum stage known, 14.0 feet (former gage datum) Mar. 25, 1913 (discharge, estimated by Miami Conservancy District, 75,700 second-feet).

REMARKS.—Records good. Discharge estimated Nov. 27 to Dec. 1, Dec. 31 to Jan. 3, Jan. 5. Flow at high stages automatically regulated at Huffman retarding basin. Gage-height record and some discharge measurements furnished by Miami Conservancy District.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	184	214	280	148	214	234	430	386	258	214	220	229
2	191	206	248	154	214	230	543	371	245	226	255	254
3	184	202	226	160	214	226	1,140	355	233	222	218	254
4	184	198	214	177	214	226	1,540	340	233	196	199	233
5	184	198	214	226	206	226	833	330	254	186	186	222
6	180	194	248	418	210	226	639	326	229	186	179	214
7	184	194	234	309	234	222	543	340	237	179	166	203
8	222	194	210	252	239	270	490	335	229	172	157	199
9	375	198	198	239	248	318	451	340	222	166	151	196
10	248	187	194	226	252	280	424	350	214	163	284	192
11	234	198	191	222	234	271	413	321	210	163	320	192
12	226	222	187	226	226	266	376	312	210	163	288	186
13	218	214	187	226	239	285	366	307	203	157	322	186
14	214	198	184	218	404	328	350	302	214	157	391	182
15	218	194	180	214	364	333	335	288	222	157	288	186
16	210	194	180	222	314	309	326	275	218	154	241	230
17	218	191	180	214	299	285	312	297	214	157	222	210
18	218	191	187	214	294	275	307	288	203	730	210	700
19	210	187	194	234	299	285	293	279	196	832	392	294
20	206	187	194	262	304	285	293	288	192	340	384	233
21	210	191	194	222	304	280	307	284	192	597	368	218
22	210	194	194	222	294	275	493	271	375	1,230	275	206
23	210	198	198	218	285	262	627	284	316	562	237	217
24	214	198	194	214	275	266	451	271	262	376	218	307
25	210	214	191	214	266	275	391	266	222	302	210	237
26	206	222	194	218	248	266	736	266	203	271	206	352
27	210	184	194	226	248	262	768	258	203	241	401	297
28	226	160	191	218	243	851	549	254	192	233	448	245
29	214	160	184	218	------	750	468	254	222	222	390	226
30	210	248	177	218	------	513	418	254	262	214	275	210
31	214	------	154	214	------	430	------	258	------	203	237	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	375	180	214	0.339	0.39
November	248	160	198	.313	.35
December	280	154	200	.316	.36
January	418	148	225	.356	.41
February	404	206	264	.418	.44
March	851	222	316	.500	.58
April	1,540	293	520	.823	.92
May	386	254	302	.478	.55
June	375	192	230	.364	.41
July	1,230	154	302	.478	.55
August	448	151	269	.426	.49
September	700	182	244	.386	.43
The year	1,540	148	273	.432	5.88

BUCK CREEK AT SPRINGFIELD, OHIO

LOCATION.—Water-stage recorder at Plum Street Bridge in Springfield, Clark County.

DRAINAGE AREA.—137 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931. July, 1914, to September, 1921, at present site at datum 1 foot higher than present gage. May, 1924, to September, 1928, at site near Fountain Avenue Bridge, half a mile upstream.

EXTREMES.—Maximum discharge during year, 1,180 second-feet July 21 (gage height, 5.60 feet); minimum, 25 second-feet Dec. 31 (gage height, 2.28 feet). 1924–1931: Maximum discharge, 13,000 second-feet Feb. 26, 1929 (gage height, 14.3 feet); minimum, 13 second-feet July 10, 1925.

REMARKS.—Records good except those for Apr. 15 to July 8, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	49	65	43	48	47	77	70	49	65	47	59
2	50	49	54	44	50	48	85	67	48	55	47	79
3	50	52	52	46	54	47	198	64	47	54	44	69
4	52	49	52	51	49	48	239	63	55	45	42	60
5	49	50	59	97	51	50	126	63	50	48	37	61
6	50	49	64	86	51	48	91	63	47	48	39	53
7	50	48	58	65	59	64	81	66	55	46	36	49
8	65	48	55	56	52	66	74	64	52	45	37	50
9	51	48	55	55	59	61	69	82	51	43	46	50
10	49	52	53	52	58	56	73	71	48	43	67	49
11	48	55	54	51	49	58	66	65	48	43	79	48
12	48	62	53	54	49	56	60	63	48	44	87	46
13	49	54	51	49	76	57	59	65	47	43	99	46
14	50	51	51	48	71	57	57	62	48	40	83	47
15	49	51	52	47	61	56	56	58	47	40	65	46
16	49	51	49	46	58	57	55	57	52	41	57	57
17	52	51	48	47	62	54	55	64	43	102	53	162
18	50	48	49	47	63	54	55	63	42	350	50	208
19	50	49	49	62	65	57	52	59	42	125	83	65
20	51	48	48	51	63	54	54	61	41	141	117	55
21	51	48	47	48	58	53	70	55	60	525	108	53
22	52	49	48	49	57	52	114	55	147	331	74	50
23	53	48	47	47	56	52	138	53	159	133	61	68
24	53	49	46	47	56	57	95	50	81	93	57	75
25	52	50	46	48	52	57	96	51	63	73	57	78
26	51	52	52	49	52	54	239	51	55	63	57	88
27	58	44	51	49	50	56	144	49	51	60	55	74
28	54	47	52	49	49	101	103	47	48	56	152	62
29	53	51	52	49	------	84	86	48	92	52	91	56
30	52	78	46	49	------	70	76	48	73	50	63	53
31	52	------	44	49	------	67	------	51	------	47	58	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	65	48	51.4	0.375	0.43
November	78	44	51.0	.372	.42
December	65	44	51.7	.377	.43
January	97	43	52.6	.384	.44
February	76	48	56.4	.412	.43
March	101	47	58.0	.423	.49
April	239	52	94.8	.692	.77
May	82	47	59.6	.435	.50
June	159	41	59.6	.435	.49
July	525	40	95.0	.693	.80
August	152	36	66.1	.482	.56
September	208	46	67.2	.491	.55
The year	525	36	63.6	.464	6.31

TWIN CREEK NEAR GERMANTOWN, OHIO

LOCATION.—Water-stage recorder in NW. ¼ sec. 11, T. 3 N., R. 4 E., a quarter of a mile below Germantown Dam and 1½ miles northwest of Germantown. Zero of gage is 700.00 feet above mean sea level.

DRAINAGE AREA.—275 square miles.

RECORDS AVAILABLE.—December, 1926, to September, 1931. April, 1914, to December, 1923, at site 1 mile downstream.

EXTREMES.—Maximum discharge during year, 2,470 second-feet Apr. 3 (gage height, 23.39 feet); minimum, 6.9 second-feet Oct. 15 (gage height, 18.24 feet).

1914–1923, 1926–1931: Maximum discharge, 8,480 second-feet Apr. 21, 1920; minimum, 4.3 second-feet Aug. 13, 1930 (gage height, 18.16 feet).

Maximum stage known, 18.3 feet (original gage datum) Mar. 25, 1913 (discharge, estimated by Miami Conservancy District, 66,000 second-feet).

REMARKS.—Records good. Discharge estimated because of ice Jan. 9–10, 14–17. Flow at high stages automatically regulated at Germantown retarding basin. Gage-height record and some of discharge measurements furnished by Miami Conservancy District.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.3	15	25	16	18	28	248	111	52	216	18	22
2	9.3	14	30	15	16	28	449	101	42	113	16	25
3	9.3	13	21	14	15	27	1,350	94	37	75	18	27
4	9.3	14	20	14	16	27	1,520	83	42	54	18	24
5	8.9	15	20	28	15	28	690	77	38	50	16	18
6	8.9	14	24	46	15	28	419	74	29	40	14	14
7	8.9	13	25	48	20	31	296	75	32	35	14	14
8	13	13	24	36	24	64	237	70	64	30	12	12
9	19	13	23	28	30	98	192	65	40	26	11	11
10	22	13	21	24	34	77	162	65	34	24	13	10
11	18	15	20	23	32	68	141	67	28	21	30	9.6
12	15	16	19	21	29	72	122	61	26	19	76	9.6
13	13	21	18	19	37	132	108	63	24	17	30	9.6
14	12	21	18	18	57	220	102	61	67	15	19	9.3
15	10	20	16	15	56	228	96	55	163	30	15	9.3
16	10	19	17	15	51	142	86	49	74	19	12	9.3
17	11	18	16	14	46	110	80	107	54	29	10	9.5
18	10	16	15	16	45	89	78	56	40	348	10	14
19	9.8	16	16	20	41	84	71	48	33	323	56	12
20	9.8	16	16	24	40	98	67	50	27	110	79	9.6
21	9.8	15	15	32	39	89	74	51	99	308	21	9.6
22	12	15	14	25	38	78	111	48	574	262	14	9.3
23	12	14	15	23	36	68	120	49	191	104	12	12
24	12	14	16	22	34	64	109	43	96	67	9.6	11
25	13	13	15	21	33	62	94	41	62	49	9.3	37
26	12	13	17	21	30	61	262	48	48	38	12	129
27	13	14	17	22	30	58	345	35	37	30	31	51
28	15	14	16	21	29	888	237	31	33	26	59	28
29	15	14	16	19	------	731	168	58	238	24	76	22
30	15	17	16	18	------	350	129	53	501	21	36	20
31	15	------	15	18	------	229	------	66	------	19	27	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	22	8.9	12.3	0.045	0.05
November	21	13	15.3	.056	.06
December	30	14	18.6	.068	.08
January	48	14	22.5	.082	.09
February	57	15	32.4	.118	.12
March	888	27	141	.513	.59
April	1,520	67	272	.989	1.10
May	111	31	63.1	.229	.26
June	574	24	94.2	.343	.38
July	348	15	82.0	.298	.34
August	79	9.3	25.6	.093	.11
September	129	9.3	20.3	.074	.08
The year	1,520	8.9	66.5	.242	3.26

WEST FORK OF WHITEWATER RIVER NEAR ALPINE, IND.

LOCATION.—Water-stage recorder in sec. 23, T. 13 N., R. 12 E., 1¼ miles north of Alpine, Fayette County. Zero of gage is 750.25 feet above mean sea level.

DRAINAGE AREA.—528 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,580 second-feet Apr. 3 (gage height, 7.33 feet); minimum discharge, 14 second-feet Sept. 22 (minimum gage height, 1.86 feet Nov. 9, 25).

1928–1931: Maximum discharge, 20,900 second-feet Feb. 26, 1929 (gage height, 14.8 feet); minimum, that of Sept. 22, 1931.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	66	101	83	92	130	378	309	141	97	48	198
2	73	66	79	95	96	127	425	288	114	132	39	165
3	73	76	84	68	90	126	2,280	260	108	112	47	181
4	72	73	80	69	90	126	1,850	242	103	91	44	156
5	67	70	85	103	94	128	855	237	158	78	46	148
6	72	69	97	144	92	127	644	220	108	82	37	109
7	73	66	83	107	118	170	513	214	221	77	38	73
8	92	61	87	107	141	240	438	214	333	72	36	79
9	112	63	85	96	137	226	366	202	151	64	68	70
10	93	74	89	96	134	197	338	202	128	58	539	66
11	84	75	82	94	133	187	312	192	109	55	184	63
12	78	82	84	96	129	206	274	190	106	39	317	54
13	75	76	91	92	154	288	245	196	96	56	131	52
14	75	77	81	85	166	384	213	180	405	72	142	44
15	71	74	83	87	158	412	210	161	311	66	89	51
16	71	68	73	87	161	352	176	156	223	51	89	57
17	69	77	77	87	163	300	156	149	181	48	73	182
18	67	75	70	89	164	258	145	141	132	192	70	111
19	66	65	72	94	160	276	136	134	108	246	86	50
20	67	74	72	94	152	268	144	163	105	86	290	46
21	72	65	68	89	148	252	217	159	117	104	208	39
22	71	64	75	89	141	239	323	148	361	262	117	37
23	72	63	71	89	146	226	295	140	221	282	94	221
24	72	71	67	89	140	218	242	128	152	153	84	98
25	71	70	60	89	137	221	240	127	126	102	76	497
26	70	67	79	90	137	221	694	126	112	83	206	324
27	74	54	71	96	131	225	730	114	98	71	1,620	90
28	73	77	68	94	128	1,080	528	103	87	69	607	76
29	70	62	73	94	-------	856	434	236	117	63	1,110	66
30	70	84	64	96	-------	524	362	240	102	59	424	58
31	71	-------	76	96	-------	402	-------	168	-------	51	278	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	112	66	74.5	0.141	0.16
November	84	54	70.1	.133	.15
December	101	60	78.3	.148	.17
January	144	68	93.0	.176	.20
February	166	90	133	.252	.26
March	1,080	126	290	.549	.63
April	2,280	136	472	.894	1.00
May	309	103	185	.350	.40
June	405	87	161	.305	.34
July	282	39	99.1	.188	.22
August	1,620	36	233	.441	.51
September	497	37	115	.218	.24
The year	2,280	36	167	.316	4.28

WHITEWATER RIVER AT BROOKVILLE, IND.

LOCATION.—Water-stage recorder in sec. 32, T. 9 N., R. 2 W., three-quarters of a mile south of Brookville, Franklin County, and three-eighths of a mile below junction of East and West Forks. Zero of gage is 595.22 feet above mean sea level.

DRAINAGE AREA.—1,180 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931; June, 1915, to May, 1920.

EXTREMES.—Maximum discharge during year, 11,600 second-feet Apr. 4 (gage height, 9.65 feet); minimum, 75 second-feet Nov. 28 (gage height, 0.87 foot).

1927–1931: Maximum discharge, 69,200 second-feet Feb. 26, 1929 (gage height 25.56 feet); minimum, 71 second-feet Aug. 31, 1930 (gage height, 0.92 foot).

REMARKS.—Records good. Discharge for following periods determined from readings of chain gage at same site: Oct. 1–15, Jan. 12–24, Feb. 11–15, Apr. 3–9, 20–22, Apr. 27 to May 6, July 1–7, July 11 to Aug. 4, Aug. 12–16, Sept. 28–30.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	126	213	102	137	191	1,260	845	376	275	108	410
2	140	121	185	104	134	195	2,180	691	313	255	108	780
3	129	130	168	122	132	181	3,280	628	267	405	105	600
4	134	132	166	112	129	178	6,080	568	248	1,010	102	430
5	129	124	156	124	129	181	2,700	520	358	244	102	395
6	108	124	184	229	124	181	1,900	496	308	244	98	283
7	124	124	205	251	134	287	1,500	520	302	185	95	237
8	156	120	183	208	192	965	1,260	490	673	179	93	225
9	267	116	175	181	222	620	1,060	490	415	173	165	200
10	215	118	166	166	215	497	950	496	313	165	2,520	185
11	169	127	166	156	222	508	880	484	263	151	640	181
12	169	134	150	156	188	475	768	462	236	136	1,130	167
13	156	152	150	156	201	734	684	508	256	127	482	155
14	145	145	150	140	445	860	616	457	992	127	306	152
15	134	134	141	104	341	888	568	420	1,300	151	278	234
16	127	130	140	129	298	755	526	385	616	138	200	270
17	124	127	131	120	286	620	514	421	440	148	175	176
18	122	128	132	129	282	530	496	372	344	136	160	423
19	118	127	132	134	278	508	490	344	287	568	225	226
20	123	122	129	195	263	519	474	486	251	304	476	163
21	123	127	124	129	259	486	532	482	520	384	425	145
22	124	118	120	116	244	445	1,260	395	680	318	278	135
23	124	118	126	116	233	415	985	385	688	372	204	279
24	126	120	122	129	233	396	796	358	405	604	175	428
25	124	125	117	145	226	411	705	331	331	283	160	539
26	124	129	129	145	215	411	2,720	318	295	208	187	1,960
27	123	113	132	153	208	406	2,050	304	279	159	1,160	510
28	134	88	129	147	201	3,910	1,420	279	259	148	804	328
29	134	94	129	147	-------	2,540	1,100	278	248	129	1,260	241
30	131	119	120	145	-------	1,500	915	661	287	129	727	214
31	127	-------	100	134	-------	1,140	-------	474	-------	120	504	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	267	108	139	0.118	0.14
November	152	88	124	.105	.12
December	213	100	147	.125	.14
January	251	102	146	.124	.14
February	445	124	220	.186	.19
March	3,910	178	708	.600	.69
April	6,080	474	1,350	1.14	1.27
May	845	278	463	.392	.45
June	1,300	236	418	.354	.40
July	1,010	120	257	.218	.25
August	2,520	93	434	.368	.42
September	1,960	135	356	.302	.34
The year	6,080	88	397	.336	4.55

KENTUCKY RIVER BASIN

NORTH FORK OF KENTUCKY RIVER AT JACKSON, KY.

LOCATION.—Chain gage at highway bridge at Jackson, Breathitt County, 3 miles below mouth of Quicksand Creek.

DRAINAGE AREA.—1,100 square miles.

RECORDS AVAILABLE.—June, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 24,400 second-feet Apr. 22 (gage height, 26.5 feet); no flow Oct. 16 (gage height, 0.46 foot).

1928–1931: Maximum discharge, 55,900 second-feet Mar. 24, 1929 (gage height, 38.9 feet); no flow Oct. 16, 1930.

REMARKS.—Records good. Discharge estimated because of ice effect Nov. 26–28, Dec. 22, 23; because of backwater from temporary dam Oct. 17–23, Nov. 11–13.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	1.5	36	58	55	212	2,060	1,130	445	88	123	375
2	.9	1.5	28	64	53	307	2,760	935	428	69	97	307
3	.9	.9	31	82	47	375	2,550	845	392	172	121	710
4	.7	.9	33	90	42	392	4,600	755	324	242	258	1,380
5	.5	.7	40	111	36	358	3,460	630	242	159	480	1,230
6	.3	.5	105	227	34	358	2,480	590	198	340	445	630
7	.3	.3	307	630	40	324	1,990	550	184	462	935	445
8	.2	.3	258	670	55	532	1,860	935	172	324	670	324
9	.4	.2	242	515	134	980	1,620	1,500	154	324	550	258
10	.5	.1	159	392	550	845	1,380	2,620	141	290	375	184
11	.2	.1	115	307	670	710	3,110	1,740	134	172	274	152
12	.2	2.0	105	258	515	670	4,440	1,330	117	111	340	126
13	.2	3.5	97	212	410	590	3,110	1,380	107	82	480	105
14	.3	.2	91	184	445	498	1,990	1,440	136	60	445	88
15	.2	.5	86	172	550	550	1,380	1,330	130	45	340	75
16	.0	3.7	69	145	630	480	1,080	1,130	105	42	242	69
17	.2	8.2	57	128	710	410	845	1,030	88	37	172	63
18	.3	7.6	53	113	980	358	755	890	105	61	184	58
19	.2	26	45	109	980	324	630	670	130	184	227	58
20	.2	39	42	103	935	290	550	630	95	136	590	88
21	.5	132	42	97	755	274	550	890	74	590	1,740	128
22	1.5	121	42	93	532	410	13,300	845	55	1,030	3,460	258
23	2.8	75	43	88	445	800	19,800	800	55	2,760	4,300	150
24	4.1	69	51	79	392	845	5,720	710	128	3,110	2,270	91
25	2.5	66	54	75	324	890	3,110	755	101	1,990	1,230	69
26	2.5	57	57	72	274	800	3,040	890	88	845	800	184
27	2.1	48	60	67	242	670	3,040	1,230	82	550	550	392
28	2.9	39	64	64	212	6,520	2,410	1,080	107	358	670	462
29	2.5	31	66	63	-------	8,500	1,920	800	121	290	670	324
30	2.1	31	60	61	-------	4,600	1,330	710	115	227	590	212
31	2.1	-------	55	58	-------	2,480	-------	590	-------	154	532	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4.1	0	1.08	0.001	0.001
November	132	.1	25.6	.023	.03
December	307	28	83.6	.076	.09
January	670	58	174	.158	.18
February	980	34	394	.358	.37
March	8,500	212	1,170	1.06	1.22
April	19,800	550	3,230	2.94	3.28
May	2,620	550	1,010	.918	1.06
June	445	55	158	.144	.16
July	3,110	37	494	.449	.52
August	4,300	97	779	.708	.82
September	1,380	58	300	.273	.30
The year	19,800	0	651	.592	8.03

NORTH FORK OF KENTUCKY RIVER NEAR AIRDALE, KY.

LOCATION.—Water-stage recorder 1¼ miles above Airdale, Lee County, and 200 feet above Log Shoal Creek. Zero of gage is 634.83 feet above mean sea level.

DRAINAGE AREA.—1,290 square miles.

RECORDS AVAILABLE.—July, 1929, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge for year, 19,300 second-feet Apr. 23 (gage height, 27.85 feet); minimum, about 2.0 second-feet on several days in October (gage height, 0.08 foot).

1929–1931: Maximum discharge occurred Apr. 23, 1931; minimum, about 1.0 second-foot Sept. 6–10, 1930.

REMARKS.—Records fair except those for estimated periods, Oct. 1 to Dec. 10, June 4–13, Jan. 13 to Feb. 9, Feb. 11–23, Mar. 8–12, July 4, 5, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				148		296	2,540	1,410	582	103	229	448
2				148		332	2,820	1,210	496	114	198	440
3			45	148	82	392	3,040	1,060	464	142	180	780
4				138		440	4,340	920	456	300	208	1,120
5				152		428	4,860	762	428	250	299	1,250
6				198		400	3,150	650	400	282	740	800
7				356	75	460	2,270	605	340	360	605	590
8			250	672			1,940	650	296	428	762	404
9				628	176		1,880	1,440	268	328	628	313
10				488	605	900	1,660	2,600	240	306	605	257
11		3.0	152	392			2,760	2,540	215	282	432	208
12			152	336			3,990	1,940	200	204	436	180
13			134		594	830	3,930	1,780	190	156	536	166
14			120	257		785	2,540	1,720	218	114	540	145
15			100			920	1,830	1,660	246	82	444	162
16	2.5		82			785	1,410	1,460	246	75	356	110
17			75			628	1,110	1,180	218	62	285	100
18			65	173	860	532	898	965	212	86	282	92
19			62			516	762	830	184	166	360	106
20			62			416	650	695	180	212	628	134
21			59			368	582	672	180	542	1,310	120
22			53		693	356	5,550	808	180	1,140	2,100	148
23		115	49	123		480	17,800	808	170	2,220	3,810	222
24			43		504	920	12,800	830	240	2,600	3,390	194
25			46		432	1,040	5,260	808	159	2,600	1,780	170
26			62		380	1,040	3,450	1,010	138	1,360	1,110	257
27			82	102	372	1,020	3,390	1,460	131	785	740	285
28		55	96		296	4,800	2,820	1,460	114	524	544	372
29			110			9,470	2,220	1,140	114	384	560	384
30			145	90		7,210	1,780	852	128	310	560	302
31			152			3,660		672		260	456	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			2.5	0.0019	0.002
November			30.3	.023	.03
December			109	.084	.10
January	672		214	.166	.19
February			455	.353	.37
March	9,470	296	1,390	1.08	1.24
April	17,800	582	3,470	2.69	3.00
May	2,600	605	1,180	.915	1.05
June	582	114	254	.197	.22
July	2,600	62	541	.419	.48
August	3,810	180	810	.628	.72
September	1,250	92	342	.265	.30
The year	17,800		732	.567	7.70

KENTUCKY RIVER AT LOCK 14, AT HEIDELBERG, KY.

LOCATION.—Staff gage at Lock 14, at Heidelberg, Lee County, a quarter of a mile above mouth of Sturgeon Creek.

DRAINAGE AREA.—2,610 square miles.

RECORDS AVAILABLE.—October, 1925, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 35,600 second-feet Apr. 23 (gage height, 20.5 feet); minimum, about 4 second-feet Oct. 20 (minimum gage height, 4.8 feet Nov. 10–16).

1925–1931: Maximum discharge, 67,300 second-feet Mar. 24, 1929 (gage height, 33.6 feet); minimum, that of October, 1930.

REMARKS.—Records good except those for ordinary low water, which are fair, and those for extremely low water, which are poor. Regulation due to operation of lock affected low-water stages.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				175	175	490	6,040	2,900	970	175	400	745
2				175	125	640	6,980	2,320	855	208	315	800
3				240	125	745	7,620	1,920	800	240	315	1,160
4				240	125	800	12,300	1,560	800	1,640	358	1,920
5			35	208	125	800	11,200	1,310	640	910	590	2,110
6				278	125	800	7,300	1,100	[a]540	490	1,820	1,390
7				540	125	800	5,120	1,030	[a]470	690	1,310	970
8	14	7	33	1,240	125	910	3,960	1,160	400	855	1,390	690
9			208	1,240	445	3,960	3,960	3,150	358	590	1,100	590
10			240	855	1,240	3,150	3,150	7,300	315	490	1,100	445
11			175	690	1,820	2,540	6,980	6,660	315	490	745	315
12			240	590	1,560	2,110	10,200	4,530	315	315	800	315
13			175	490	1,240	1,560	8,930	3,960	[a]350	240	1,030	240
14			125	490	1,390	1,470	5,730	3,680	400	175	910	240
15			125	400	2,320	1,730	3,960	3,410	490	125	800	208
16			125	400	2,540	1,390	2,660	2,900	400	125	590	175
17			95	315	2,210	1,100	2,110	2,110	400	125	490	175
18			95	315	3,280	970	1,730	1,730	315	110	540	125
19			95	315	3,410	910	1,390	1,470	315	278	690	150
20			95	315	3,020	800	1,100	1,240	240	358	1,240	208
21			95	315	2,210	690	1,030	1,030	240	1,160	3,960	175
22			95	315	1,560	690	12,300	1,390	240	2,780	4,530	240
23	6	35	95	240	1,240	800	35,300	1,470	490	5,420	6,980	315
24			95	240	970	1,640	24,400	1,470	490	6,980	6,350	315
25			95	240	800	1,920	9,920	1,390	278	5,420	3,410	315
26			95	240	690	1,920	8,270	1,730	240	2,660	2,010	445
27			125	175	590	1,820	8,270	3,280	240	1,470	1,240	490
28			125	175	490	14,300	6,980	3,150	240	910	970	590
29			125	175	------	24,400	5,120	2,210	175	640	910	690
30			208	175	------	16,500	3,680	1,560	175	590	910	540
31			240	175	------	8,270	------	1,240	------	445	745	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	------	------	9.9	0.0038	0.004
November	------	------	21.0	.0080	.009
December	240	------	112	.043	.05
January	1,240	175	386	.148	.17
February	3,410	125	1,220	.467	.49
March	24,400	490	3,250	1.25	1.44
April	35,300	1,030	7,590	2.91	3.25
May	7,300	1,030	2,430	.931	1.07
June	970	175	417	.160	.18
July	6,980	110	1,200	.460	.53
August	6,980	315	1,570	.602	.69
September	2,110	125	570	.218	.24
The year	35,300	------	1,560	.598	8.12

[a] Estimated.

KENTUCKY RIVER AT LOCK 10, NEAR WINCHESTER, KY.

LOCATION.—Staff gage at Lock 10, in Madison County, 8 miles southwest of Winchester, Clark County. Zero of gage is 558.6 feet and crest of dam is 567.6 feet above mean sea level.

DRAINAGE AREA.—3,990 square miles.

RECORDS AVAILABLE.—October, 1909, to September, 1931.

EXTREMES.—Maximum discharge during year, 43,000 second-feet Apr. 24 (gage height, 20.2 feet); minimum estimated at less than 10 second-feet in October (minimum gage height, 7.62 feet Nov. 15).

1909–1931: Maximum discharge, about 68,500 second-feet Mar. 29, 1913 (gage height, 35.1 feet); minimum occurred in October, 1930.

REMARKS.—Records good except those for extremely low water, which are poor. Discharge estimated because of regulation by lock gates and sluices Oct. 1–31, Nov. 11 to Dec. 8, Dec. 13.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		14		328	230	1,090	8,740	4,350	1,520	252	530	900
2		20		345	215	1,370	10,100	3,910	1,230	230	444	960
3		16		482	185	1,440	10,500	3,480	1,020	200	372	1,520
4		23		530	185	1,440	11,200	2,860	960	1,230	680	1,910
5		20	20	399	185	1,370	14,700	2,320	840	1,830	680	2,320
6		20		363	172	1,300	10,800	1,990	730	1,230	960	1,990
7		23		482	159	1,990	7,440	1,910	630	840	2,150	1,520
8		20		840	192	4,580	5,770	1,670	610	900	1,520	1,020
9		18	22	1,600	900	6,560	4,810	2,670	473	960	1,520	630
10		20	42	1,440	2,320	5,520	4,810	7,440	454	785	1,440	610
11			76	1,160	2,670	4,580	8,080	8,740	399	680	1,370	464
12			152	900	2,670	3,910	10,800	6,840	345	530	1,160	426
13		150	150	730	2,320	3,270	11,600	5,770	381	444	1,600	345
14			146	630	3,060	2,670	8,740	5,280	336	302	1,520	.294
15			109	620	3,480	3,060	5,770	4,810	426	185	1,300	302
16	15		185	530	3,480	2,670	4,580	4,350	492	152	900	294
17			172	482	4,350	2,320	3,480	3,480	511	114	730	159
18			146	473	4,810	1,910	2,670	2,860	473	114	785	120
19			172	435	5,040	1,670	2,320	2,320	345	286	1,160	133
20			166	435	4,350	1,440	1,990	1,990	302	960	2,490	185
21			109	417	3,910	1,230	1,750	1,830	381	2,320	3,480	185
22			109	399	3,060	1,090	13,100	1,600	328	3,910	4,810	192
23		25	87	372	2,320	1,300	32,500	1,910	502	6,840	5,280	172
24			109	345	1,910	1,910	43,000	1,990	730	8,080	6,840	222
25			120	345	1,440	3,060	26,000	1,990	680	6,560	5,280	277
26			172	354	1,230	3,060	16,900	1,990	454	4,580	3,910	336
27			185	311	1,020	3,060	14,700	2,670	354	2,670	2,670	435
28			159	286	900	13,900	11,200	3,480	336	1,670	1,830	520
29			172	277	-------	27,200	8,080	3,060	328	1,090	1,300	620
30			185	268	-------	28,500	6,020	2,320	277	785	1,230	730
31		-------	200	260	-------	15,600	-------	1,990	-------	590	1,020	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	----------	----------	15.0	0.0038	0.004
November	----------	----------	44.0	.011	.01
December	200	----------	107	.027	.03
January	1,600	260	543	.136	.16
February	5,040	159	2,030	.509	.53
March	28,500	1,090	4,970	1.25	1.44
April	43,000	1,750	10,700	2.68	2.99
May	8,740	1,600	3,350	.840	.97
June	1,520	277	562	.141	.16
July	8,080	114	1,660	.416	.48
August	6,840	372	1,970	.494	.57
September	2,320	120	660	.165	.18
The year	43,000	----------	2,210	.554	7.52

KENTUCKY RIVER AT LOCK 6, AT WARWICK, KY.

LOCATION.—Staff gage at Lock 6, 1 mile northwest of Warwick, Woodford County.

DRAINAGE AREA.—5,140 square miles.

RECORDS AVAILABLE.—October, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 38,600 second-feet Apr. 25 (gage height, 18.2 feet); minimum, 25 second-feet on several days.

1925–1931: Maximum discharge, 75,400 second-feet Dec. 26, 1926 (gage height, 33.7 feet); minimum discharge, 25 second-feet several days during 1930 and 1931.

REMARKS.—Records good except those for ordinary low water, which are fair, and those for extremely low water, which are poor. For periods June 1, 1930, to Feb. 10, 1931, Sept. 1–30, 1931, discharge given is that at Lock 7, 21 miles upstream, determined from power-plant records. Flow at Lock 6 and at Lock 7 practically same during low water. Flow regulated slightly by operation of hydroelectric plants on Dix River and at Lock 7 on Kentucky River. Gage-height record furnished by Corps of Engineers, United States Army.

Daily and monthly discharge, in second-feet, 1929–1931

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1929-30												
1	1,560	7,470	2,390	9,120	6,700	4,630	4,020	1,020	581	303	108	25
2	1,120	8,280	2,260	7,470	5,620	4,020	3,880	1,020	608	131	192	192
3	920	8,280	2,140	7,470	4,630	4,630	3,590	1,020	442	186	158	358
4	1,020	10,900	2,020	7,470	9,120	4,020	3,730	1,020	303	233	25	164
5	820	16,600	2,390	7,080	32,300	4,020	4,020	820	468	164	303	131
6	415	11,800	1,670	6,700	30,800	5,280	4,950	820	317	164	25	247
7	1,020	6,700	2,140	5,970	25,400	7,080	5,280	730	469	25	691	275
8	1,020	4,020	2,140	5,970	17,600	7,470	5,280	730	247	358	80	44
9	1,230	3,310	3,040	17,100	10,900	9,550	4,630	640	386	69	303	25
10	560	5,970	4,630	10,400	7,470	9,120	4,020	640	414	275	386	192
11	1,450	2,020	5,280	8,280	6,330	9,120	3,880	640	414	114	164	219
12	1,120	1,780	4,630	5,970	5,620	10,000	3,730	640	317	175	247	25
13	820	1,780	4,020	5,280	5,970	10,900	3,310	2,020	289	206	219	317
14	560	2,770	3,590	6,700	13,300	10,900	2,900	3,730	192	136	275	103
15	560	8,700	2,770	9,120	20,400	10,400	2,520	3,730	181	158	219	247
16	560	9,550	2,640	7,470	22,600	7,870	2,640	3,040	247	219	192	25
17	920	10,900	3,040	5,970	14,900	6,700	2,640	2,640	25	164	247	219
18	730	19,800	4,630	5,280	10,000	5,970	2,640	3,170	206	192	192	192
19	730	27,000	8,280	3,880	8,280	5,280	2,390	5,970	158	358	219	25
20	295	26,400	10,400	3,450	6,700	8,700	1,450	8,280	28	206	247	247
21	640	14,400	9,120	3,450	5,280	11,800	1,450	9,120	142	142	164	206
22	1,020	7,470	7,470	3,450	4,020	10,900	1,450	7,870	158	331	219	192
23	1,670	5,280	5,970	3,310	4,020	9,120	1,670	5,280	119	344	164	233
24	1,900	3,880	5,280	3,170	4,020	7,080	1,450	3,730	136	469	53	442
25	2,020	3,310	4,020	2,900	4,630	5,970	1,340	2,770	164	303	247	247
26	2,640	3,170	3,730	2,900	5,280	6,330	1,020	2,520	261	206	275	103
27	2,640	3,040	3,880	3,170	6,330	7,470	1,120	1,450	181	233	219	247
28	1,780	2,770	6,700	10,400	5,970	7,470	1,020	1,450	261	169	275	206
29	1,230	2,390	14,900	13,800	-------	6,330	1,020	1,450	275	219	192	186
30	1,560	2,640	14,900	11,800	-------	5,280	1,020	820	219	247	275	206
31	5,280	-------	11,800	8,700	-------	4,630	-------	1,020	-------	175	136	-------

Daily and monthly discharge, in second-feet, of Kentucky River at Lock 6, at Warwick, Ky., 1929–1931—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	192	181	186	303	136	1,230	12,800	5,970	2,000	140	350	858
2	153	219	81	289	413	1,780	10,400	4,630	1,750	295	415	942
3	186	136	303	414	192	2,520	11,800	4,020	1,250	190	350	1,620
4	192	78	275	497	164	1,900	11,800	3,590	900	1,020	350	1,620
5	25	275	331	608	275	1,900	13,300	3,450	950	1,670	920	1,780
6	275	303	25	413	192	1,900	13,800	2,770	850	2,140	1,780	2,090
7	169	125	25	468	164	2,140	9,120	2,640	850	1,340	1,670	2,040
8	186	261	303	496	358	4,630	7,080	2,390	700	415	820	1,680
9	61	108	25	1,130	1,410	6,700	5,280	2,260	600	1,450	1,900	747
10	414	289	25	1,520	2,100	7,470	5,280	3,170	550	1,120	1,670	636
11	25	317	108	1,440	2,390	5,970	5,280	8,280	480	560	1,340	664
12	206	233	103	1,080	3,310	4,950	10,000	8,280	415	640	1,560	469
13	192	414	136	968	2,900	4,020	11,800	7,080	480	640	1,900	303
14	153	219	25	746	3,040	3,450	10,900	5,970	415	300	2,020	469
15	192	247	358	746	3,450	3,170	7,470	5,280	480	250	1,670	525
16	206	67	344	551	3,730	3,170	5,620	4,630	415	200	1,670	25
17	136	186	233	663	4,020	2,900	4,020	4,020	350	200	920	358
18	181	206	414	496	6,700	2,640	3,590	4,020	295	295	640	131
19	153	108	469	496	5,970	2,520	3,040	2,770	295	350	560	289
20	192	147	692	468	5,970	1,900	2,900	2,640	350	820	3,450	25
21	331	181	303	496	4,630	1,780	2,640	2,390	240	1,900	4,020	69
22	206	186	636	468	4,020	2,390	5,620	2,140	820	3,880	4,020	192
23	636	136	386	524	2,640	1,450	23,200	2,140	1,670	4,320	4,020	219
24	25	103	275	440	2,520	1,450	35,600	2,140	1,340	7,470	5,620	142
25	317	275	25	275	2,140	1,780	36,000	2,140	1,000	7,470	6,700	158
26	275	92	192	524	1,450	2,900	23,700	2,260	900	6,330	5,280	497
27	261	25	181	192	1,230	3,040	20,400	2,260	750	3,880	3,730	414
28	81	25	136	330	1,230	10,900	14,900	2,390	350	2,770	2,770	440
29	289	25	169	330	-------	23,700	10,900	2,390	480	1,780	2,390	413
30	358	136	275	247	-------	29,200	7,870	2,390	190	1,900	1,560	303
31	275	-------	147	247	-------	23,700	-------	2,390	-------	1,230	1,020	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
1929–30				1930–31			
October	5,280	295	1,280	October	414	25	211
November	27,000	1,780	8,080	November	414	25	177
December	14,900	1,670	5,220	December	692	25	232
January	17,100	2,900	6,880	January	1,520	192	576
February	32,300	4,020	10,900	February	6,700	136	2,380
March	11,800	4,020	7,360	March	29,200	1,230	5,460
April	5,280	1,020	2,800	April	36,000	2,640	11,500
May	9,120	640	2,570	May	8,280	2,140	3,640
June	608	25	274	June	2,000	190	737
July	469	25	215	July	7,470	140	1,840
August	691	25	216	August	6,700	350	2,160
September	442	25	185	September	2,090	25	671
The year	32,300	25	3,780	The year	36,000	25	2,460

NOTE.—Records for June 1 to Sept. 30, 1930, supersede those published in Water Supply Paper 698.

KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.

LOCATION.—Staff gage at Lock 4, at Frankfort, Franklin County, a quarter of a mile below Benson Creek.

DRAINAGE AREA.—5,480 square miles.

RECORDS AVAILABLE.—October, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 43,700 second-feet Apr. 25 (gage height, 16.2 feet); minimum, about 25 second-feet on several days.

1925–1931: Maximum discharge, 72,700 second-feet Dec. 26, 1926 (gage height, 34.9 feet); minimum stage, 4.6 feet Jan. 29, 1927 (discharge not determined).

RECORDS.—Records good. Discharge not determined for extreme low water periods because of effects of regulation at power plants upstream. Records previously published for period June 1 to Sept. 30, 1930, are considered doubtful. Flow regulated slightly by operation of hydroelectric plants on Dix River and at Lock 7 on Kentucky River. Gage-height record furnished by Corps of Engineers, United States Army.

Daily and monthly discharge, in second-feet, 1931

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			1,600	14,300	6,500	2,210	300	460	1,200
2			2,060	11,100	5,720	2,060	640	740	550
3			2,210	12,100	4,440	1,070	740	460	2,210
4			1,900	13,200	4,080	740	1,200	460	2,060
5			1,600	13,200	3,390	1,070	1,750	1,200	1,900
6			1,750	15,500	2,880	840	2,210	1,600	2,710
7			4,080	11,100	2,710	840	1,750	1,460	2,540
8			4,980	7,780	2,540	640	740	2,210	2,210
9	840	1,750	6,920	6,100	2,210	640	1,460	2,210	955
10	1,600	2,540	7,780	5,720	3,390	640	1,320	2,210	550
11	1,600	3,220	6,500	6,100	7,780	300	740	1,600	640
12	1,320	3,220	5,720	9,140	8,680	460	640	1,750	550
13	1,200	4,440	4,980	11,100	7,340	300	640	2,060	550
14	840	4,080	4,080	11,100	6,500	460	300	1,900	300
15	840	3,560	3,560	8,220	5,720	380	300	1,750	640
16		4,080	3,560	6,100	4,980	460	300	1,460	380
17		4,980	3,220	4,980	4,440	380	300	1,070	100
18		6,500	2,710	3,910	3,740	380	550	840	300
19		5,720	2,380	3,220	3,220	300	640	840	175
20		5,720	2,210	2,710	2,710	460	460	3,740	175
21		4,980	2,210	2,540	2,380	235	1,460	4,260	225
22		4,080	1,750	7,340	2,060	840	4,260	3,910	225
23		3,390	1,200	20,200	1,900	2,380	5,720	4,980	200
24		2,710	1,460	34,000	1,900	1,600	7,340	5,720	200
25		2,210	1,750	43,000	1,900	1,070	7,340	6,500	250
26		1,750	3,050	28,500	1,900	1,070	6,500	5,340	300
27		1,320	3,560	20,800	1,900	840	4,620	5,720	380
28		1,320	10,600	15,500	2,710	550	3,050	3,560	275
29			20,200	11,600	3,560	460	1,900	2,380	300
30			27,500	8,680	3,220	235	1,320	1,600	300
31			24,500		2,710		1,070	1,200	

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
January	1,600			June	2,380	235	797
February 9–28	6,500	1,320	3,580	July	7,340	300	1,990
March	27,500	1,200	5,530	August	6,500	460	2,430
April	43,000	2,540	12,300	September	2,710	100	778
May	8,680	1,900	3,840				

KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY.

LOCATION.—Staff gage at Lock 2, at Lockport, Henry County, just below mouth of Sixmile Creek.

DRAINAGE AREA.—6,310 square miles.

RECORDS AVAILABLE.—October, 1925, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 44,900 second-feet Apr. 25 (gage height, 19.9 feet); minimum, about 30 second-feet on several days.

1925–1931: Maximum discharge, 84,400 second-feet Jan. 23, 1927 (gage height, 41.7 feet); minimum, about 30 second-feet occurred in August and October, 1930.

REMARKS.—Records good. Gage-height record furnished by Corps of Engineers, United States Army. Discharge not determined for extreme low-water periods because of effects of regulation at power plants upstream. Records previously published for the period June 1 to Sept. 30, 1930, are considered doubtful.

Daily and monthly discharge, in second-feet, 1931

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	------	2,860	18,200	8,150	2,500	320	425	1,110
2	------	------	2,390	14,500	6,270	2,170	320	630	1,040
3	------	------	2,620	19,600	5,210	1,660	2,500	470	2,170
4	------	------	2,280	23,900	4,540	1,360	1,460	630	1,860
5	------	------	2,060	18,700	3,930	980	3,240	470	1,760
6	------	------	1,960	20,600	3,370	980	2,390	1,960	2,500
7	------	------	5,210	15,900	2,980	1,110	1,960	1,460	2,390
8	------	------	6,270	11,400	2,740	800	1,360	1,760	2,170
9	470	1,760	8,150	8,540	2,390	980	1,360	1,960	1,360
10	1,280	2,740	9,340	6,630	2,620	681	1,170	1,860	582
11	1,560	3,110	8,150	6,630	7,000	518	926	1,660	800
12	1,560	3,370	6,630	9,750	9,340	470	800	1,760	681
13	1,170	5,560	5,560	11,800	7,760	320	582	1,860	630
14	980	5,560	4,870	12,300	6,630	582	582	1,860	320
15	800	4,540	4,230	9,340	5,910	470	425	1,860	749
16	------	4,540	3,930	7,000	5,210	470	320	1,660	681
17	------	5,560	3,930	5,560	4,540	470	320	1,360	173
18	------	7,380	3,240	4,230	4,230	470	320	980	110
19	------	7,000	2,860	3,500	3,240	470	926	1,110	200
20	------	6,630	2,620	2,980	2,860	320	1,040	2,620	110
21	------	5,560	2,170	3,240	2,500	470	1,460	4,230	200
22	------	4,540	1,960	9,750	2,170	681	3,640	3,930	110
23	------	3,930	1,760	19,200	2,170	1,860	4,870	4,870	518
24	------	3,110	1,760	31,800	2,060	2,280	7,380	5,210	320
25	------	2,500	2,060	43,800	1,960	1,040	8,150	7,000	200
26	------	2,170	3,110	40,800	2,170	1,170	7,000	5,560	681
27	------	1,760	3,640	24,900	2,280	582	5,910	6,630	470
28	------	1,660	11,400	18,700	2,390	470	3,370	3,930	320
29	------	------	20,600	14,500	3,240	320	2,170	2,740	425
30	------	------	28,100	10,600	3,370	320	1,460	1,860	320
31	------	------	29,800	------	2,860	------	800	1,560	------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
January	1,560	------	------	June	2,500	320	899
February 9–28	7,380	1,660	4,150	July	8,150	320	2,210
March	29,800	1,760	6,310	August	7,000	425	2,450
April	43,800	2,980	14,900	September	2,500	110	832
May	9,340	1,960	4,070				

TROUBLESOME CREEK NEAR CLAYHOLE, KY.

LOCATION.—Staff gage 1½ miles southeast of Clayhole, Breathitt County, and 50 feet above Millers Branch.

DRAINAGE AREA.—191 square miles.

RECORDS AVAILABLE.—August, 1929, to September, 1931 (discontinued).

EXTREMES.—Maximum gage height during year, 13.0 feet Apr. 22 (discharge not determined); minimum discharge, 0.3 second-foot Oct. 16, 17 (gage height, 0.06 foot).

1929–1931: Maximum discharge, that of April, 1931; no flow Sept. 10, 1930.

REMARKS.—Records fair for low and medium stages, poor for high stages. Discharge affected by ice Nov. 26–29, Dec. 23–25. Discharge estimated May 27 to June 2, July 11–15.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	0.3	1.7	9.0	4.5	106	482	202	86	21	24	58
2	.4	.3	1.4	7.5	6.0	93	482	177	79	18	17	40
3	.4	.3	.9	7.5	6.0	72	380	146	70	32	20	650
4	.4	.4	.4	7.5	6.0	60	1,240	126	66	28	22	460
5	.4	.4	.9	13	5.1	56	650	109	60	14	42	177
6	.3	.4	62	104	4.8	54	505	96	49	64	33	106
7	.3	.4	54	189	4.5	66	321	106	44	70	810	91
8	.7	.3	42	88	4.5	195	209	100	42	40	229	78
9	.4	.3	29	74	42	189	157	120	27	34	202	28
10	.4	.3	17	48	215	100	131	138	21	20	138	21
11	.3	.3	8.4	23	180	44	420	131	20	15	88	11
12	.3	.3	7.2	28	126	36	600	122	19	10	136	9.0
13	.3	.4	4.8	21	154	36	284	212	17	7.5	93	10
14	.3	.4	3.6	17	189	48	247	321	14	6.0	69	12
15	.3	.9	3.0	14	60	67	195	168	14	5.1	44	10
16	.3	14	1.7	12	60	60	131	115	16	4.5	36	8.4
17	.3	69	.9	12	420	54	91	115	14	4.5	24	7.8
18	.4	72	.9	13	400	53	79	115	12	3.9	15	8.4
19	.4	65	1.2	12	189	36	39	107	9.0	143	13	11
20	.4	56	1.7	10	76	30	36	136	5.1	550	21	27
21	.3	39	1.4	7.5	60	28	34	177	3.3	600	870	16
22	.3	14	.9	8.7	54	89	6,000	162	2.2	650	2,370	12
23	.4	3.0	1.0	9.3	40	229	1,970	149	18	1,590	700	9.6
24	.4	2.5	1.2	9.0	36	195	700	129	55	1,170	247	9.0
25	.4	2.5	3.2	8.1	32	195	528	115	36	550	171	6.6
26	.3	2.0	12	7.8	30	171	575	115	19	229	133	30
27	.3	1.4	20	8.1	29	284	575	177	19	177	94	40
28	.3	1.2	22	6.9	29	2,610	505	152	45	113	86	23
29	.3	1.0	23	6.0	------	870	482	126	33	74	78	11
30	.3	.9	20	5.7	------	400	284	113	28	58	71	9.0
31	.3	------	10	4.8	------	202	------	102	------	43	65	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.7	0.3	0.36	0.0019	0.002
November	72	.3	11.6	.061	.07
December	62	.4	11.5	.060	.07
January	189	4.8	25.5	.134	.15
February	420	4.5	87.9	.460	.48
March	2,610	28	217	1.14	1.31
April	6,000	34	611	3.20	3.57
May	321	96	141	.738	.85
June	86	2.2	31.4	.164	.18
July	1,590	3.9	205	1.07	1.23
August	2,370	13	225	1.18	1.36
September	650	6.6	66.3	.347	.39
The year	6,000	.3	136	.712	9.66

QUICKSAND CREEK NEAR JACKSON, KY.

LOCATION.—Staff gage 5 miles northeast of Jackson, Breathitt County, and 6½ miles above mouth of creek.
DRAINAGE AREA.—152 square miles.
RECORDS AVAILABLE.—August, 1929, to September, 1931 (discontinued).
EXTREMES.—Maximum gage height during year, 16.2 feet Apr. 22 (discharge not determined); no flow Oct. 1–27.
1929–1931: Maximum discharge, that of April, 1931; no flow Sept. 10, Sept. 23 to Oct. 27, 1930.
REMARKS.—Records good below and fair above 400 second-feet.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	5.4	e17	6.4	28	365	146	46	1.8	11	21
2	0	.2	e 4.5	e 15	5.4	42	425	124	39	1.4	12	29
3	0	.2	e 5.1	e 14	5.1	57	345	117	30	2.4	14	46
4	0	.2	6.0	e 15	5.1	53	1,230	90	24	2.1	83	46
5	0	.2	7.6	18	4.2	49	785	74	21	7.6	58	30
6	0	.2	23	34	3.9	44	445	65	20	12	53	20
7	0	.2	49	83	4.8	52	288	71	18	22	31	14
8	0	.2	34	51	6.4	234	217	234	17	25	30	12
9	0	.2	21	33	34	217	176	288	16	14	23	9.6
10	0	.2	15	27	160	153	146	560	16	9.2	33	8.0
11	0	.2	13	21	90	146	635	345	12	6.8	25	6.8
12	0	.4	12	19	57	124	465	270	10	4.2	39	6.0
13	0	.4	10	18	44	97	326	234	9.2	3.0	200	5.4
14	0	.3	9.2	e 17	70	90	234	217	9.2	2.4	97	4.8
15	0	.3	8.4	e 16	97	176	176	176	9.2	2.7	47	4.2
16	0	.4	9.2	e 15	70	138	138	138	13	2.1	28	3.3
17	0	.6	8.4	e 15	97	110	117	117	8.8	1.2	20	2.7
18	0	1.0	8.4	14	176	90	97	97	6.0	2.4	20	2.4
19	0	.6	6.8	14	153	77	82	79	5.4	39	18	4.2
20	0	3.6	5.4	14	117	65	71	79	4.5	23	76	15
21	0	8.0	e 5.1	13	84	55	70	124	3.6	82	307	23
22	0	6.8	e 5.1	e 12	60	65	5,850	110	3.0	184	820	12
23	0	5.7	e 5.4	e 10	46	117	1,680	138	4.2	345	855	6.8
24	0	5.1	e 6.0	e 9	40	90	585	124	4.8	326	326	4.8
25	0	4.8	e 7.2	9.2	35	217	345	117	8.0	217	176	3.6
26	0	e 4.5	12	8.0	30	176	425	153	5.4	84	138	42
27	0	e 4.2	16	8.4	26	146	445	117	5.4	47	84	55
28	.2	e 4.2	20	8.4	23	2,100	326	90	3.3	30	61	31
29	.2	e 5.1	35	8.4	------	1,330	252	70	2.7	22	44	17
30	.2	6.8	25	8.4	------	485	184	57	2.7	17	33	12
31	.2	------	e 19	7.6	------	288	------	52	------	13	26	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.2	0	0.03	0.00020	0.0002
November	8.0	.2	2.17	.014	.02
December	49	4.5	13.5	.089	.10
January	83	7.6	18.5	.122	.14
February	176	3.9	55.4	.364	.38
March	2,100	28	229	1.51	1.74
April	5,850	70	564	3.71	4.14
May	560	52	151	.993	1.14
June	46	2.7	12.6	.083	.09
July	345	1.2	50.0	.329	.38
August	855	11	122	.803	.93
September	55	2.4	16.6	.109	.12
The year	5,850	0	103	.678	9.18

e Discharge estimated because of ice effect.

MIDDLE FORK OF KENTUCKY RIVER AT TALLEGA, KY.

LOCATION.—Chain gage at highway bridge three-quarters of a mile southwest of Tallega, Lee County.

DRAINAGE AREA.—536 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 14,400 second-feet Apr. 23 (gage height, 28.6 feet); minimum, 0.7 second-foot Oct. 16 (gage height, 0.73 foot).

REMARKS.—Records fair. Discharge estimated because of ice effect Nov. 28, 29, Dec. 23, 24.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	2.0	16	60	27	113	1,020	415	133	16	129	144
2	-------	2.0	16	68	25	170	1,180	335	88	24	142	182
3	-------	2.0	16	52	25	182	1,220	262	96	166	102	348
4	-------	2.0	16	35	24	182	2,850	181	63	485	102	348
5	-------	3.2	16	30	20	155	1,660	142	48	276	97	240
6	-------	2.6	29	62	18	133	1,060	101	39	88	153	169
7	-------	3.2	70	109	18	170	830	90	36	207	139	124
8	-------	3.2	54	413	18	620	760	157	34	111	139	97
9	-------	3.2	55	291	131	550	690	520	30	71	135	86
10	-------	3.2	52	195	320	690	585	1,150	28	55	144	73
11	-------	3.2	58	145	381	550	1,380	820	27	46	123	65
12	-------	3.8	58	118	366	445	2,580	700	27	36	248	57
13	-------	5.0	42	99	263	366	1,620	660	24	29	155	52
14	-------	5.0	32	86	320	335	940	590	55	23	115	46
15	-------	5.0	24	80	480	306	690	520	70	20	97	41
16	0.7	4.4	24	84	690	263	515	415	40	18	97	38
17	.9	6.6	24	78	585	222	413	320	25	17	94	35
18	.9	7.4	23	68	690	182	335	248	22	86	220	37
19	.9	8.2	19	57	690	182	277	194	22	290	262	38
20	.9	8.2	19	52	690	155	235	133	23	248	320	39
21	1.2	7.4	18	57	515	135	195	115	22	432	660	55
22	1.2	7.4	18	53	381	143	4,850	234	20	555	625	40
23	1.2	7.4	17	49	291	277	13,400	276	72	780	820	30
24	1.6	7.4	15	41	235	320	5,100	305	96	1,600	580	27
25	1.6	7.4	14	38	182	366	1,640	305	39	590	330	24
6	1.6	7.4	21	36	152	366	1,380	450	33	320	270	107
27	1.6	7.4	23	36	129	397	1,200	980	29	234	196	82
28	2.0	12	28	33	115	3,650	1,020	700	22	181	151	70
29	2.0	15	29	32	-------	6,160	780	415	19	137	144	68
30	2.0	18	29	31	-------	3,450	590	276	17	133	154	53
31	2.0	-------	26	30	-------	1,300	-------	181	-------	125	132	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 16–31	2.0	0.7	1.39	0.0026	0.002
November	18	2.0	6.01	.011	.01
December	70	14	29.1	.054	.06
January	413	30	84.5	.158	.18
February	690	18	278	.519	.54
March	6,160	113	727	1.36	1.57
April	13,400	195	1,700	3.17	3.54
May	1,150	90	393	.733	.85
June	133	17	43.3	.081	.09
July	1,600	16	239	.446	.51
August	820	94	228	.425	.49
September	348	24	93.8	.175	.20

SOUTH FORK OF KENTUCKY RIVER AT BOONEVILLE, KY.

LOCATION.—Water-stage recorder at Booneville, Owsley County, 400 feet below Buck Creek.

DRAINAGE AREA.—708 square miles.

RECORDS AVAILABLE.—October, 1929, to September, 1931 (discontinued). March, 1925, to September, 1929, at gage three-quarters of a mile upstream.

EXTREMES.—Maximum discharge during year, 16,000 second-feet Apr. 23 (gage height, 22.28 feet); minimum, 0.1 second-foot Oct. 1–7 (gage height, 0.60 foot).

1925–1931: Maximum discharge, 57,200 second-feet Mar. 23, 1929 (gage height 39.3 feet, present datum); minimum, 0.1 second-foot Sept. 30 to Oct. 7, 1930.

REMARKS.—Records good except those for Feb. 2–11, Sept. 8–28, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.4	1.0	74	37	158	1,730	780	188	19	95	89
2	.1	.4	1.2	58		208	1,970	668	173	18	70	126
3	.1	.4	1.2	47		228	2,060	555	154	91	58	584
4	.1	.4	1.0	41		220	4,290	422	120	600	126	690
5	.1	.4	1.9	43		194	2,280	363	95	312	292	390
6	.1	.4	10	80	30	187	1,500	318	81	209	1,070	244
7	.1	.4	20	471		346	1,120	310	70	305	791	162
8	.2	.4	17	458		1,530	870	504	66	204	560	
9	.4	.4	18	292		1,620	690	1,270	57	113	340	120
10	.4	.4	24	212		1,080	714	2,800	52	78	256	
11	.4	.4	49	162	880	825	2,410	1,970	52	58	275	
12	.4	.6	44	134	515	668	2,520	1,450	50	43	274	
13	.4	.7	37	118	390	535	1,670	1,250	52	34	326	75
14	.4	.7	31	122	740	440	1,200	1,120	62	28	222	
15	.4	1.0	25	128	1,590	372	915	915	84	23	166	
16	.6	1.3	22	118	964	315	712	735	129	20	116	
17	.6	2.2	18	101	864	266	535	555	129	17	88	
18	.6	2.2	16	86	1,560	226	440	458	102	29	84	55
19	.6	2.0	14	82	1,420	206	360	363	78	122	143	
20	.4	1.9	13	82	986	187	305	300	61	87	349	
21	.4	1.9	12	81	668	171	282	285	48	509	1,440	
22	.4	1.9	12	77	440	193	7,590	334	39	1,250	1,300	
23	.4	1.7	11	71	329	296	11,700	315	110	1,500	1,000	85
24	.4	1.6	10	64	261	375	3,100	310	52	1,790	780	
25	.4	1.6	9.8	58	218	458	1,670	337	32	982	475	
26	.4	1.6	12	54	187	440	1,830	536	26	825	340	
27	.4	1.3	23	51	158	952	2,090	938	34	458	256	100
28	.4	1.2	27	48	136	9,240	1,670	622	42	282	196	
29	.5	1.2	39	46	-------	9,070	1,280	390	32	198	169	77
30	.5	1.0	109	42	-------	2,650	1,000	282	22	150	145	63
31	.4	-------	96	40	-------	1,500	--------	220	-------	111	108	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.6	0.1	0.36	0.0005	0.0006
November	2.2	.4	1.07	.0015	.002
December	109	1.0	23.4	.033	.04
January	471	40	114	.161	.19
February	1,590	----------	481	.679	.71
March	9,240	158	1,130	1.60	1.84
April	11,700	282	2,020	2.85	3.18
May	2,800	220	699	.987	1.14
June	188	22	76.4	.108	.12
July	1,790	17	338	.477	.55
August	1,440	58	384	.542	.62
September	690	----------	139	.196	.22
The year	11,700	.1	449	.634	8.61

RED RIVER AT CLAY CITY, KY.

LOCATION.—Chain gage at highway bridge on State route 15, half a mile west of Clay City, Powell County.
DRAINAGE AREA.—363 square miles.
RECORDS AVAILABLE.—October, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 5,760 second-feet Mar. 29 (gage height, 12.22 feet); minimum, 3.7 second-feet July 16 (gage height, 1.06 feet).
REMARKS.—Records good except those for very low stages, which are fair. Discharge estimated because of ice effect Dec. 23, 24.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	12	16	24	25	108	820	430	62	14	29	59
2	------	10	17	20	20	167	1,400	370	61	15	24	94
3	------	7.4	29	18	20	157	1,290	320	59	9.9	20	345
4	------	6.4	27	18	18	148	930	282	55	16	41	162
5	------	7.4	28	18	17	148	970	234	50	36	54	100
6	------	7.4	32	55	14	131	680	212	41	87	43	72
7	------	5.5	84	108	16	460	490	181	36	45	35	53
8	------	6.1	85	86	31	1,520	400	201	40	27	129	42
9	------	7.8	53	64	308	1,240	320	370	47	22	81	35
10	------	7.0	41	55	680	680	308	1,090	40	17	201	29
11	------	7.0	32	47	460	645	1,240	715	37	15	212	26
12	------	7.8	26	44	258	580	1,090	550	31	13	258	23
13	------	12	26	53	232	490	680	610	29	9.1	201	22
14	------	16	27	68	820	460	520	610	26	6.7	282	19
15	------	24	25	58	580	490	460	490	33	4.8	172	18
16	------	25	18	39	345	490	370	400	31	4.8	100	16
17	------	25	20	44	550	400	282	345	28	9.1	71	16
18	------	26	17	41	750	308	232	270	29	10	81	14
19	------	24	14	38	550	282	198	222	23	17	75	13
20	------	28	16	50	370	270	177	181	19	17	430	13
21	7.8	20	14	55	282	209	167	154	15	320	520	10
22	9.5	18	12	39	220	209	2,280	154	94	490	370	14
23	10	17	12	47	177	430	5,040	137	50	1,090	520	32
24	5.2	12	9.0	36	139	580	2,350	129	68	610	400	27
25	7.0	13	7.8	31	123	680	820	122	56	234	191	23
26	7.0	13	12	30	116	580	2,210	122	39	129	201	28
27	17	16	25	33	101	520	2,490	114	28	87	308	34
28	10	17	55	31	86	3,520	1,090	100	22	65	191	38
29	13	18	54	31	------	5,680	750	81	18	50	129	26
30	28	16	37	30	------	2,140	550	81	15	39	100	23
31	17	------	26	27	------	820	------	67	------	34	75	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 21-31	28	5.2	12.0	0.033	0.01
November	28	5.5	14.3	.039	.04
December	85	7.8	28.9	.080	.09
January	108	18	43.2	.119	.14
February	820	14	261	.719	.75
March	5,680	108	792	2.18	2.51
April	5,040	167	1,020	2.81	3.14
May	1,090	67	301	.829	.96
June	94	15	39.4	.109	.12
July	1,090	4.8	114	.314	.36
August	520	20	179	.493	.57
September	345	10	47.5	.131	.15

EAGLE CREEK AT GLENCOE, KY.

LOCATION.—Chain gage at highway bridge half a mile south of Glencoe, Gallatin County.

DRAINAGE AREA.—445 square miles.

RECORDS AVAILABLE.—April, 1915, to September, 1920; May, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 14,200 second-feet Apr. 4 (gage height, 15.30 feet); no flow Oct. 1 to Jan. 13.

1915–1920, 1928–1931: Maximum gage height, 20.5 feet Apr. 20, 1920 (discharge not determined); no flow July 15, 1930, to Jan. 13, 1931.

Flood of 1913 reached a stage of approximately 23.0 feet.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1.6	34	190	134	9.8	14	16	12
2	0	1.3	780	2,670	115	8.7	11	11	18
3	0	1.1	345	3,780	99	7.8	8.4	9.8	412
4	0	1.0	178	11,000	92	7.2	124	55	412
5	0	1.0	124	1,550	80	5.5	178	92	178
6	0	.8	99	510	68	4.2	243	74	106
7	0	.8	315	330	64	4.5	134	34	64
8	0	1.4	2,250	243	61	5.0	64	20	41
9	0	2.1	880	203	56	8.4	36	80	28
10	0	92	360	166	69	8.1	20	31	20
11	0	271	345	124	74	6.0	12	22	14
12	0	190	300	106	69	5.2	7.8	16	8.1
13	0	257	230	99	62	4.5	5.0	13	6.6
14	5.2	3,350	203	92	54	315	3.8	9.0	7.8
15	11	730	190	92	46	550	3.1	7.8	8.1
16	9.4	230	144	80	38	74	4.2	4.5	7.8
17	8.7	203	92	74	33	36	4.5	3.4	8.4
18	6.9	880	99	69	28	20	2.8	3.2	7.5
19	7.5	470	74	61	28	11	2.9	8.7	6.3
20	6.6	216	69	59	25	8.4	3.2	510	4.5
21	4.5	155	65	63	25	5.5	330	271	3.2
22	4.2	47	60	2,090	27	115	155	144	2.7
23	3.8	86	52	1,880	34	271	395	86	286
24	3.5	67	52	412	37	124	286	54	550
25	3.8	55	46	257	31	144	144	37	286
26	3.1	45	44	1,260	27	92	69	62	980
27	2.7	45	48	980	22	67	39	47	510
28	2.1	35	1,610	595	15	44	24	33	178
29	1.6	----	1,430	216	12	29	16	30	99
30	1.7	----	378	166	9.8	20	10	25	56
31	2.0	----	203	----	8.1	----	12	16	----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
January	11	0	2.85	0.0064	0.007
February	3,350	0.8	266	.598	.62
March	2,250	34	358	.804	.93
April	11,000	59	981	2.20	2.46
May	134	8.1	49.8	.112	.13
June	550	4.2	67.0	.151	.17
July	395	2.8	76.2	.171	.20
August	510	3.2	58.9	.132	.15
September	980	2.7	144	.324	.36
The year	11,000	0	165	.371	5.03

NOTE.—No flow during months omitted.

SALT RIVER BASIN

BEECH FORK AT FREDERICKTOWN, KY.

LOCATION.—Chain gage at highway bridge at mouth of Cartright Creek half a mile west of Fredericktown, Washington County.
DRAINAGE AREA.—530 square miles.
RECORDS AVAILABLE.—October, 1930, to October, 1931.
EXTREMES.—Maximum discharge during year, 6,740 second-feet Mar. 28 (gage height, 8.54 feet); no flow Oct. 1 to Nov. 25.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	1.7	1.7	400	710	325	5.5	9.4	9.4	35
2	0	0	1.4	4.0	1,040	2,180	226	6.8	12	9.4	97
3	0	.1	1.1	4.0	650	1,390	174	4.7	12	5.5	2,360
4	0	.1	1.1	1.7	310	1,390	143	3.2	11	4.0	710
5	0	.1	16	1.7	204	740	121	4.0	9.4	32	272
6	0	1.4	114	1.7	158	565	101	3.2	5.5	111	111
7	0	1.1	33	1.4	1,460	400	76	3.2	4.0	91	50
8	0	.5	76	6.8	2,010	310	32	3.2	3.2	179	38
9	0	.2	40	1,770	1,180	235	64	5.5	12	166	28
10	0	.2	23	2,360	710	217	59	4.7	4.7	37	25
11	0	.2	19	710	538	226	121	4.0	5.5	108	20
12	0	.2	19	305	455	428	54	2.5	4.7	170	11
13	0	.2	14	400	340	244	33	3.2	3.2	375	6.2
14	0	.2	14	1,460	291	174	40	2.5	1.7	244	2.8
15	0	.2	14	920	191	136	37	1.7	1.7	82	2.1
16	0	.2	26	375	166	128	30	.8	1.7	42	8.8
17	0	.5	16	592	136	128	30	1.4	37	23	8.8
18		.8	16	1,690	121	94	14	1.4	14	30	6.2
19	0	1.4	16	740	88	40	12	.5	400	57	4.4
20	0	1.4	16	375	64	64	12	.5	258	2,090	3.6
21	0	1.1	14	253	70	136	12	.2	455	1,690	2.1
22	0	1.4	9.4	179	59	3,140	70	770	510	482	1.6
23	0	1.4	5.5	143	37	2,930	12	920	217	187	1.6
24	0	1.1	6.8	88	33	800	6.8	244	64	97	6.2
25	0	1.1	11	88	40	538	9.4	85	33	54	4.7
26	0.1	1.7	12	59	40	4,820	8.1	40	19	38	73
27	.1	3.2	14	54	121	3,470	9.4	33	12	1,250	222
28	.1	3.2	6.8	37	4,820	1,040	8.1	23	11	375	85
29	.1	3.2	4.7	------	2,930	620	8.1	11	11	155	26
30	.1	2.5	4.0	------	920	428	8.1	9.4	11	57	16
31	------	1.7	2.5	------	538	------	6.8	------	9.4	37	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	0.1	0	0.02	----------	----------
December	3.2	0	.99	0.0019	0.002
January	114	1.1	18.3	.035	.04
February	2,360	1.4	451	.851	.89
March	4,820	33	649	1.22	1.41
April	4,820	40	924	1.74	1.94
May	325	6.8	60.1	.114	.13
June	920	.2	73.3	.138	.15
July	510	1.7	69.8	.132	.15
August	2,090	4.0	267	.504	.58
September	2,360	1.6	141	.266	.30
The year	4,820	0	219	.413	5.59

NOTE.—No flow during October.

BLUE RIVER BASIN

BLUE RIVER NEAR WHITE CLOUD, IND.

LOCATION.—Staff gage in sec. 19, T. 3 S., R. 3 E., three-quarters of a mile north of White Cloud, Harrison County, and 400 feet below Spring Creek.
DRAINAGE AREA.—467 square miles.
RECORDS AVAILABLE.—April to September, 1931.
EXTREMES—Maximum discharge during period, 2,800 second-feet Sept. 3 (gage height, 6.14 feet); minimum, 42 second-feet July 16–18 (gage height, 1.60 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1931

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	------	400	78	310	52	83	16	------	131	96	43	53	378
2	------	355	78	167	50	1,090	17	------	121	85	42	60	246
3	------	332	78	740	157	1,520	18	------	114	78	42	68	137
4	------	290	75	1,300	223	545	19	------	100	75	146	100	96
5	------	266	68	332	355	332	20	------	134	67	100	290	98
6	------	250	71	246	290	183	21	------	148	60	770	140	98
7	------	238	682	146	176	143	22	------	151	520	1,090	111	93
8	------	223	355	106	143	104	23	------	134	290	310	96	65
9	------	223	230	83	143	87	24	710	111	310	186	73	61
10	------	190	143	78	890	80	25	572	116	173	131	62	82
11	------	180	111	68	186	73	26	655	108	128	96	50	445
12	------	176	91	64	121	64	27	830	98	118	78	600	682
13	------	160	93	58	83	60	28	628	96	106	64	246	262
14	------	154	106	53	76	52	29	520	89	102	60	190	143
15	------	148	100	48	62	60	30	445	71	290	58	226	104
							31	------	83	------	55	118	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
May	400	71	174	0.373	0.43
June	682	60	162	.347	.39
July	1,300	42	228	.488	.56
August	890	50	177	.379	.44
September	1,520	52	249	.533	.59

GREEN RIVER BASIN

GREEN RIVER NEAR CAMPBELLSVILLE, KY.

LOCATION.—Chain gage at highway bridge on State route 55, 8 miles south of Campbellsville, Taylor County.
DRAINAGE AREA.—720 square miles.
RECORDS AVAILABLE.—October, 1930, to September, 1931.
EXTREMES—Maximum discharge during period, 8,450 second-feet Mar. 29 (gage height, 11.40 feet); minimum, 2.4 second-feet Oct. 11–13 (gage height, 0.94 foot).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	8.3	12	43	36	418	1,430	730	113	42	21	66
2	-------	9.5	11	33	33	1,130	2,300	630	107	34	17	89
3	-------	9.5	9.5	39	30	930	2,060	530	101	35	14	163
4	-------	11	12	33	30	630	1,530	440	77	155	13	181
5	-------	12	14	37	27	485	1,180	372	64	124	17	148
6	-------	12	19	43	26	395	880	395	58	107	25	130
7	-------	11	23	50	24	780	680	350	62	70	83	101
8	-------	10	33	68	26	1,880	555	418	62	54	50	72
9	5.4	8.3	48	81	440	1,760	462	395	77	42	193	53
10	2.6	12	43	79	1,430	1,230	418	880	70	35	265	37
11	2.4	22	39	72	1,080	930	1,580	730	56	39	181	31
12	2.4	26	35	92	555	780	1,430	680	50	27	124	26
13	2.4	19	33	104	395	605	930	1,530	42	23	77	20
14	3.0	17	29	138	1,180	485	680	1,280	37	18	83	18
15	3.7	22	28	130	1,430	418	530	930	28	13	120	14
16	3.7	22	27	113	730	350	508	630	26	46	98	12
17	3.7	23	24	98	1,430	305	440	440	22	33	75	11
18	4.3	21	21	86	2,670	261	350	372	19	19	48	11
19	3.7	19	23	86	1,480	245	305	305	17	15	40	9.5
20	2.8	19	22	95	930	229	265	249	16	101	95	8.3
21	3.0	17	19	124	605	213	305	221	14	285	170	7.8
22	3.3	16	19	124	440	193	5,510	197	66	930	148	6.0
23	5.4	13	18	124	372	170	6,470	185	32	508	265	6.0
24	8.3	16	13	101	305	178	2,120	170	134	285	170	7.2
25	7.2	15	16	86	265	185	1,430	181	127	193	124	16
26	4.9	15	24	77	233	181	2,740	580	83	130	305	50
27	4.9	12	30	60	205	265	3,640	440	56	92	185	43
28	10	12	32	54	178	6,630	1,940	305	39	62	265	23
29	10	9.5	45	48	-------	7,770	1,330	225	31	40	181	21
30	8.3	12	54	46	-------	2,300	980	174	62	32	127	21
31	7.8	-------	37	42	-------	1,430	-------	141	-------	25	89	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 9–31	10	2.4	4.92	0.0068	0.006
November	26	8.3	15.0	.021	.02
December	54	9.5	26.2	.036	.04
January	138	33	77.6	.108	.12
February	2,670	24	592	.822	.86
March	7,770	170	1,090	1.51	1.74
April	6,470	265	1,500	2.08	2.32
May	1,530	141	487	.676	.78
June	134	14	58.3	.081	.09
July	930	13	117	.162	.19
August	305	13	118	.164	.19
September	181	6.0	46.7	.065	.07

GREEN RIVER AT MUNFORDVILLE, KY.

LOCATION.—Chain gage at highway bridge in Munfordville, Hart County.
DRAINAGE AREA.—1,790 square miles.
RECORDS AVAILABLE.—February, 1915, to December, 1922; October, 1927, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 12,000 second-feet Mar. 30 (gage height, 17.45 feet); minimum, about 80 second-feet Oct. 1–7, 16–20.
1915–1922, 1928–1931: Maximum discharge, 42,400 second-feet Dec. 18, 1915 (gage height, 44.5 feet); minimum, 39 second-feet Sept. 2, 1921 (gage height, 2.2 feet).
REMARKS.—Records fair to good except those for lowest stages and estimated periods, which are poor. Gage-height records furnished by United States Weather Bureau. Discharge estimated Oct. 1 to Nov. 13.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			120	193	206	1,020	3,740	2,450	354	210	168	256
2			120	176	193	2,590	3,820	1,960	304	189	168	233
3			123	193	193	2,520	4,720	1,750	280	168	132	720
4			120	193	185	2,170	4,500	1,540	256	210	132	940
5		110	123	176	181	1,680	3,440	1,280	256	1,200	150	488
6			143	193	176	1,280	2,730	1,150	256	405	150	380
7			168	380	168	1,750	2,170	1,020	210	304	660	329
8			228	405	161	3,080	1,820	1,020	256	256	1,880	256
9			210	344	334	3,740	1,540	955	405	256	542	233
10			206	319	2,160	3,600	1,340	1,020	329	210	875	189
11			193	334	2,370	2,800	1,820	1,150	280	189	780	168
12		175	193	339	2,160	2,170	2,660	1,410	256	168	600	168
13			193	380	1,330	1,820	2,870	1,610	256	150	405	168
14		215	176	488	1,740	1,540	2,100	2,310	210	132	720	150
15		228	176	405	2,230	1,280	1,680	2,380	189	132	600	132
16	95	215	164	380	2,440	1,150	1,410	1,740	210	102	329	132
17		181	168	334	2,020	955	1,220	1,330	168	102	280	117
18		164	161	324	4,520	835	1,150	1,070	168	102	256	102
19		157	154	334	4,680	775	955	842	168	117	210	150
20		143	154	405	3,380	715	835	720	168	117	256	189
21		132	146	488	2,160	655	835	600	168	660	2,300	150
22		143	146	405	1,530	595	2,870	542	233	1,810	1,070	132
23		136	139	380	1,200	595	8,400	515	600	1,070	515	150
24		129	150	344	1,000	540	9,920	460	432	842	380	168
25		120	132	319	875	540	5,800	460	405	515	354	150
26		120	139	299	940	540	4,120	515	233	405	354	150
27		126	168	285	875	540	7,980	600	210	329	542	432
28		117	256	256	780	4,420	7,890	750	210	233	405	304
29		114	285	242	-------	10,300	5,100	570	189	189	355	189
30		117	256	224	-------	12,000	3,220	460	168	168	306	168
31		-------	233	219	-------	7,800	-------	405	-------	168	256	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	----------	----------	95.0	0.053	0.06
November	----------	----------	139	.078	.09
December	285	120	172	.096	.11
January	488	176	315	.176	.20
February	4,680	161	1,440	.804	.84
March	12,000	540	2,450	1.37	1.58
April	9,920	835	3,420	1.91	2.13
May	2,450	405	1,120	.626	.72
June	600	168	261	.146	.16
July	1,810	102	358	.200	.23
August	2,300	132	520	.291	.34
September	940	102	250	.140	.16
The year	12,000	----------	872	.487	6.62

GREEN RIVER AT LOCK 6, AT BROWNSVILLE, KY.

LOCATION.—Staff gage above dam at Lock 6, 1 mile northeast of Brownsville, Edmonson County. Zero of gage is 413.16 feet above mean sea level.

DRAINAGE AREA.—2,740 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 12,000 second-feet Mar. 30, 31 (gage height, 14.2 feet); minimum, 176 second-feet Oct. 2–10, 12–27 (gage height, 8.42 feet).

1924–1931: Maximum discharge, 62,800 second-feet Jan. 24, 1927 (gage height, 34.3 feet); minimum, 165 second-feet on various dates in July, August, and September, 1930.

REMARKS.—Records good except those for lowest stages, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	214	209	276	460	379	1,450	7,140	4,150	725	460	290	520
2	198	209	255	379	370	2,430	5,690	3,160	659	460	262	780
3	176	209	255	370	370	3,160	5,920	2,790	615	460	234	1,300
4	176	209	234	370	370	2,970	6,190	2,430	604	460	248	1,840
5	176	209	255	424	354	2,430	5,460	2,180	560	615	330	1,840
6	176	209	306	480	354	2,000	4,360	2,000	540	1,300	615	965
7	176	209	330	540	354	3,350	3,540	1,840	540	725	725	769
8	176	209	370	714	354	5,230	3,160	1,760	540	550	1,920	615
9	176	209	370	780	1,450	5,460	2,610	1,680	550	470	1,840	540
10	176	227	370	736	2,430	5,230	2,260	1,600	615	460	1,160	470
11	192	234	388	670	2,970	4,570	2,430	1,600	571	388	1,380	415
12	176	276	388	736	2,790	3,540	2,970	1,840	500	370	1,230	370
13	176	283	370	780	2,430	2,970	3,540	1,920	460	338	1,230	370
14	176	406	370	780	2,790	2,430	3,160	2,260	460	290	840	338
15	176	442	370	840	3,160	2,090	2,610	2,970	460	290	1,160	298
16	176	442	354	780	3,160	1,840	2,180	2,610	442	283	840	290
17	176	415	354	670	3,350	1,680	1,840	2,090	406	276	615	290
18	176	362	338	648	4,150	1,450	1,760	1,680	370	276	560	290
19	176	298	306	670	5,230	1,380	1,600	1,380	370	370	626	290
20	176	290	298	659	5,010	1,230	1,450	1,230	370	370	965	290
21	176	290	290	780	3,540	1,160	1,450	1,100	415	615	2,180	560
22	176	290	290	780	2,430	1,030	3,540	965	725	1,920	4,150	415
23	176	283	290	692	2,000	1,030	7,650	900	1,160	2,090	1,840	510
24	176	255	290	670	1,600	1,030	10,000	840	1,760	1,450	965	1,230
25	176	255	276	626	1,380	900	9,230	900	1,680	1,100	780	840
26	176	255	330	571	1,300	900	8,690	1,160	1,030	758	725	670
27	176	234	370	560	1,300	900	9,770	1,160	615	604	725	840
28	209	234	415	500	1,230	6,160	10,300	1,160	560	480	900	1,230
29	220	234	500	460	-------	10,300	8,430	1,100	480	415	840	725
30	220	255	540	415	-------	12,000	5,690	965	460	370	648	510
31	214	-------	520	388	-------	11,400	-------	780	-------	306	560	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	220	176	184	0.067	0.08
November	442	209	271	.099	.11
December	540	234	344	.126	.15
January	840	370	611	.223	.26
February	5,230	354	2,020	.737	.77
March	12,000	900	3,350	1.22	1.41
April	10,300	1,450	4,820	1.76	1.96
May	4,150	780	1,750	.639	.74
June	1,760	370	641	.234	.26
July	2,090	276	623	.227	.26
August	4,150	234	1,010	.369	.43
September	1,840	290	680	.248	.48
The year	12,000	176	1,350	.493	6.71

GREEN RIVER AT LIVERMORE, KY.

LOCATION.—Staff gage at Louisville and Nashville Railroad bridge at Livermore, McLean County, 650 feet below Rough River. Zero of gage is 360.65 feet above mean sea level.

DRAINAGE AREA.—7,800 square miles.

RECORDS AVAILABLE.—March, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 28,100 second-feet Apr. 27 (gage height, 10.85 feet); minimum, 280 second-feet Oct. 5–9, 23–27, Feb. 2–4 (minimum gage height, 3.32 feet July 16).

1930–31: Maximum and minimum stages occurred as noted above.

REMARKS.—Records good except those estimated for Jan. 18, July 1, 2, 16–20, Sept. 11–23, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	375	320	430	864	320	4,210	26,800	14,800	1,940	1,160	550	1,280
2	375	320	430	1,060	304	5,530	22,100	9,750	1,580	1,040	542	1,440
3	375	320	430	1,100	280	6,330	18,300	7,740	1,400	930	542	2,380
4	375	320	430	1,100	280	9,300	17,400	6,240	1,270	2,360	542	4,020
5	304	320	456	1,320	430	9,750	16,000	5,510	1,200	2,510	561	4,550
6	280	320	534	1,370	592	9,750	13,800	4,810	1,160	1,940	616	4,200
7	280	320	560	1,610	756	12,000	12,000	4,280	1,690	2,220	716	3,030
8	280	320	560	1,820	940	22,100	10,200	4,110	2,220	1,680	786	1,890
9	304	320	560	1,820	2,390	22,600	8,850	3,940	2,220	1,490	1,210	1,280
10	320	320	534	1,820	4,760	21,700	8,850	3,940	1,940	1,210	2,020	1,010
11	320	320	495	1,960	6,330	19,200	8,850	3,940	1,580	1,160	1,890	800
12	320	408	592	1,960	7,980	15,600	7,980	3,770	1,310	1,030	1,580	758
13	375	430	756	1,960	7,150	11,100	7,150	3,770	1,230	912	1,510	730
14	320	430	864	1,960	7,150	7,980	5,530	4,110	1,160	832	1,630	660
15	320	640	900	2,100	7,980	6,330	4,760	4,450	1,060	816	1,530	616
16	320	810	864	2,240	8,410	5,140	4,760	5,150	1,030	790	1,440	572
17	320	810	810	2,100	8,410	4,030	4,390	4,800	995	760	1,300	526
18	320	720	810	1,960	8,410	3,510	3,860	4,450	943	730	1,890	508
19	320	720	756	1,820	10,200	3,010	3,010	3,770	876	700	1,580	510
20	320	720	720	1,770	12,000	2,690	2,390	3,280	824	670	1,560	502
21	320	720	592	1,820	10,600	2,540	2,240	2,810	804	638	4,020	494
22	320	720	560	2,100	8,410	2,390	4,760	2,360	816	1,440	5,850	534
23	280	720	560	2,390	5,530	2,240	10,200	2,220	858	3,030	8,220	572
24	280	720	560	2,100	4,210	2,100	15,600	2,080	1,400	4,020	5,100	800
25	280	720	560	1,820	3,510	1,960	18,700	2,080	3,600	3,350	2,730	851
26	280	720	560	1,610	3,010	1,790	24,500	2,220	4,110	2,020	1,760	1,580
27	280	720	560	1,370	3,340	1,740	28,100	2,510	3,100	1,350	1,440	1,530
28	320	534	560	1,100	4,030	5,140	28,100	2,510	2,080	1,210	1,890	1,760
29	320	456	560	810	-------	17,800	26,000	2,220	1,560	834	2,440	2,020
30	320	430	560	495	-------	25,300	21,300	2,220	1,270	649	2,020	2,020
31	320	-------	688	342	-------	27,500	-------	2,080	-------	583	1,630	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	375	280	318	0.041	0.05
November	810	320	522	.067	.07
December	900	430	607	.078	.09
January	2,390	342	1,600	.205	.24
February	12,000	280	4,920	.631	.66
March	27,500	1,740	9,430	1.21	1.40
April	28,100	2,240	12,900	1.65	1.84
May	14,800	2,080	4,260	.546	.63
June	4,110	804	1,570	.201	.22
July	4,020	583	1,420	.182	.21
August	8,220	542	1,970	.253	.29
September	4,550	494	1,460	.187	.21
The year	28,100	280	3,390	.435	5.91

GREEN RIVER AT LOCK 1, AT SPOTTSVILLE, KY.

LOCATION.—Staff gage above dam at Lock 1, at Spottsville, Henderson County. Zero of gage is 342.58 feet above mean sea level.

DRAINAGE AREA.—9,000 square miles.

RECORDS AVAILABLE.—January, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum stage during year, 23.0 feet Apr. 10, 11 (discharge not determined); minimum discharge, 280 second-feet Oct. 3–6, 9–17 (gage height, 6.80 feet).

1928–1931: Maximum gage height, 31.1 feet Mar. 10, 11, 1929 (discharge not determined); minimum discharge, that of October, 1930.

REMARKS.—Records fair. Backwater from Ohio River occurred during periods when daily discharge is not given.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	475	400	550	910	1,130	5,150	------	------	2,180	1,250	720	1,500
2	400	400	550	1,020	1,130	4,800	------	------	2,180	910	720	2,770
3	304	400	550	1,130	910	7,500	------	------	2,180	910	720	3,920
4	280	400	550	1,020	910	9,650	------	------	1,900	2,040	720	4,450
5	280	400	400	910	1,020	9,200	------	------	1,630	2,770	720	4,800
6	280	400	400	910	910	7,900	------	4,980	1,630	2,620	720	4,450
7	340	400	400	910	1,020	14,300	------	4,450	2,470	2,620	1,020	2,920
8	340	400	400	1,130	1,500	22,300	------	4,100	3,080	2,180	1,250	1,900
9	280	400	400	1,250	2,470	27,100	------	3,750	2,620	1,900	1,900	1,500
10	280	400	635	1,630	4,800	27,100	------	3,750	2,180	1,630	2,620	1,130
11	280	400	720	1,900	6,700	23,100	------	3,400	2,040	1,500	2,620	910
12	280	400	720	1,900	7,500	19,500	------	3,580	1,630	1,130	2,040	910
13	280	400	720	1,900	7,900	14,300	------	3,750	1,900	910	1,900	910
14	280	400	720	1,900	8,750	10,100	------	3,750	2,040	910	1,630	720
15	280	550	720	1,900	8,750	8,300	------	4,280	1,630	910	1,630	720
16	280	910	720	1,900	8,750	6,700	------	4,980	1,370	910	1,370	720
17	340	910	720	1,900	8,300	5,150	------	5,150	1,370	720	1,370	550
18	400	910	720	1,900	8,750	4,620	------	4,800	1,130	720	1,900	550
19	400	910	720	1,630	9,200	4,100	------	3,400	910	550	2,180	550
20	400	910	550	1,630	11,100	4,100	------	3,580	910	635	3,080	550
21	400	910	550	1,760	11,100	3,750	3,580	------	635	1,130	5,150	475
22	400	910	550	1,900	9,200	3,400	4,620	------	550	2,040	6,300	400
23	400	910	550	2,180	6,700	3,080	8,300	2,470	720	3,240	7,500	475
24	400	910	550	2,180	4,980	2,920	12,600	2,920	1,760	4,100	6,700	550
25	400	720	550	1,900	3,920	2,470	18,100	2,320	3,400	3,920	3,750	720
26	400	550	550	1,630	3,580	2,470	23,900	2,180	3,750	2,620	2,470	1,250
27	400	550	550	1,630	3,240	2,180	------	2,180	3,400	1,900	1,630	1,630
28	400	550	550	1,500	3,750	4,450	------	2,180	2,320	1,250	1,760	1,630
29	400	550	550	1,250	------	13,100	------	2,180	1,760	1,130	2,470	1,760
30	400	550	635	1,130	------	22,300	------	2,180	1,370	910	2,470	2,180
31	400	------	910	1,130	------	27,100	------	2,180	------	910	2,040	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	475	280	351	0.039	0.04
November	910	400	594	.066	.07
December	910	400	592	.066	.08
January	2,180	910	1,530	.170	.20
February	11,100	910	5,280	.587	.61
March	27,100	2,180	10,400	1.16	1.34
April 21–26	23,900	3,580	11,800	1.31	.29
May					
June	3,750	550	1,890	.210	.23
July	4,100	550	1,640	.182	.21
August	7,500	720	2,360	.262	.30
September	4,800	400	1,580	.176	.20

NOLIN RIVER NEAR KYROCK, KY.

LOCATION.—Staff gage 4 miles above Kyrock, Edmonson County, and 1¾ miles below Brier Creek. Zero of gage is 420.95 feet above mean sea level.

DRAINAGE AREA.—682 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,390 second-feet Apr. 27 (gage height, 9.96 feet); minimum, 42 second-feet Oct. 15, 17, 21, 22 (gage height, 0.38 foot).

Flood of March, 1913, reached a stage of 34.9 feet.

REMARKS.—Records for low stages good, for medium stages fair, for high stages poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	51	65	97	88	390	1,420	920	198	148	75	148
2	48	51	59	87	83	527	1,350	750	178	139	71	412
3	45	48	61	85	82	575	1,420	675	168	139	63	481
4	44	50	56	88	77	550	1,380	600	158	158	66	1,500
5	45	48	62	95	74	481	1,180	550	148	239	99	575
6	44	48	75	120	71	412	1,010	481	148	346	550	324
7	46	48	79	130	74	1,180	830	481	158	188	324	260
8	48	48	82	148	87	1,280	725	458	148	148	575	198
9	46	48	99	168	800	1,420	650	458	158	130	435	168
10	47	55	92	158	750	1,210	575	412	168	118	368	148
11	48	63	95	158	650	950	575	412	148	106	346	130
12	44	69	87	158	550	775	600	435	148	100	302	120
13	43	68	88	168	527	650	650	412	130	94	412	120
14	43	90	85	178	725	550	600	481	130	85	270	104
15	43	97	68	178	675	481	527	527	118	83	302	99
16	45	104	72	158	675	435	458	504	115	72	218	95
17	42	92	72	148	775	390	435	412	111	69	148	92
18	44	85	75	139	860	346	390	346	104	75	139	88
19	44	75	72	139	920	346	368	302	100	116	158	90
20	44	75	72	139	830	302	346	281	100	88	239	113
21	42	69	68	158	625	302	368	250	120	346	1,660	260
22	42	66	66	168	504	281	1,460	239	390	527	1,740	139
23	44	68	66	148	412	260	1,660	228	481	481	600	113
24	46	65	63	139	346	260	1,740	218	860	324	368	675
25	46	66	62	130	302	250	1,500	346	980	228	250	368
26	48	61	75	120	281	239	3,120	412	390	178	228	435
27	51	59	95	130	281	260	3,020	390	228	148	208	458
28	53	61	99	118	260	2,720	2,470	346	188	120	260	458
29	54	59	111	99	------	2,470	1,700	281	158	102	250	228
30	53	65	109	95	------	2,270	1,180	239	148	88	188	158
31	52	------	106	92	------	1,860	------	218	------	82	158	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	54	42	46.3	0.068	0.08
November	104	48	65.1	.095	.11
December	111	56	78.6	.114	.13
January	178	85	133	.195	.22
February	920	71	442	.648	.67
March	2,720	239	788	1.16	1.34
April	3,120	346	1,120	1.64	1.83
May	920	218	421	.617	.71
June	980	100	226	.331	.37
July	527	69	170	.249	.29
August	1,740	63	357	.523	.60
September	1,500	88	285	.418	.47
The year	3,120	42	343	.503	6.82

BARREN RIVER AT LOCK 1, AT GREENCASTLE, KY.

LOCATION.—Staff gage above dam at Lock 1, half a mile southwest of Greencastle, Warren County. Zero of gage is 404.79 feet above mean sea level.
DRAINAGE AREA.—1,950 square miles.
RECORDS AVAILABLE.—October, 1924, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 11,300 second-feet Mar. 30 (gage height, 12.2 feet); minimum, 55 second-feet Oct. 5–10 (gage height, 7.2 feet).
1924–1931: Maximum discharge, 37,500 second-feet Dec. 24, 1926 (gage height, 27.0 feet); minimum, 55 second-feet Aug. 13, Sept. 4–12, Oct. 5–10, 1930.
REMARKS.—Records good except those for low stages, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	165	165	430	380	2,580	4,270	2,300	430	240	165	330
2	100	165	165	380	330	6,030	4,040	2,020	430	285	132	430
3	100	165	165	330	330	6,030	4,500	1,840	430	330	100	660
4	100	100	165	330	330	4,270	4,040	1,670	380	330	100	1,350
5	55	100	165	330	330	3,180	3,390	1,430	330	240	100	845
6	55	100	240	330	330	2,390	2,780	1,350	600	240	100	600
7	55	100	240	380	240	2,780	2,390	1,280	1,200	240	165	380
8	55	100	240	720	240	6,030	2,300	1,280	1,350	430	285	330
9	55	100	540	780	485	7,200	1,930	1,200	1,050	330	330	240
10	55	100	430	780	980	5,490	1,840	1,200	720	330	330	202
11	165	165	330	910	2,780	4,270	1,840	1,350	540	240	430	165
12	240	165	330	910	2,200	3,180	2,110	1,350	430	202	430	165
13	240	380	240	910	1,590	2,780	2,110	1,350	330	165	380	165
14	202	540	240	1,050	1,350	2,300	1,760	2,300	330	165	430	165
15	132	485	240	1,050	2,110	1,930	1,510	2,200	330	165	330	100
16	100	430	240	980	2,580	1,670	1,430	1,840	330	165	330	132
17	100	330	240	780	2,200	1,510	1,280	1,430	330	240	240	165
18	100	330	240	660	3,180	1,350	1,200	1,280	240	240	330	165
19	100	330	240	660	4,500	1,200	1,050	1,050	240	202	240	132
20	100	285	165	980	3,390	1,120	1,050	910	240	165	660	100
21	100	240	165	1,280	2,580	1,050	980	910	430	380	980	132
22	100	240	165	1,120	2,020	980	1,510	845	330	1,590	1,760	165
23	100	240	165	980	1,590	910	4,500	780	330	2,020	1,050	165
24	100	165	165	780	1,350	910	4,500	780	980	1,280	600	132
25	100	165	165	720	1,200	845	3,820	720	1,590	660	430	100
26	100	165	240	660	1,930	780	3,820	660	980	485	485	132
27	165	165	240	540	2,980	780	4,980	540	600	330	1,430	285
28	165	165	330	485	2,390	2,200	4,980	540	540	285	1,590	380
29	165	165	485	430	-------	9,170	3,820	540	380	240	845	285
30	165	165	540	540	-------	11,000	2,780	485	285	202	600	165
31	165	-------	540	485	-------	6,600	-------	430	-------	165	485	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	240	55	117	0.060	0.07
November	540	100	217	.111	.12
December	540	165	265	.136	.16
January	1,280	330	700	.359	.41
February	4,500	240	1,640	.841	.88
March	11,000	780	3,310	1.70	1.96
April	4,980	980	2,750	1.41	1.57
May	2,300	430	1,220	.626	.72
June	1,590	240	557	.286	.32
July	2,020	165	406	.208	.24
August	1,760	100	512	.263	.30
September	1,350	100	292	.150	.17
The year	11,000	55	994	.510	6.92

ROUGH RIVER AT DUNDEE, KY.

LOCATION.—Chain gage at Louisville & Nashville Railroad bridge at Dundee, Ohio County. Zero of gage is 391.99 feet above mean sea level.
DRAINAGE AREA.—775 square miles.
RECORDS AVAILABLE.—April, 1930, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 5,170 second-feet Apr. 28 (gage height, 19.22 feet); minimum discharge, 10 second-feet Oct. 21–23, 25–27; minimum gage height, 2.19 feet Aug. 11.
1930–31: Maximum discharge occurred Apr. 28, 1931; minimum occurred in October, 1930.
REMARKS.—Records poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	19	52	58	55	170	1,300	515	100	33	58	52
2	34	18	55	61	49	325	1,830	427	88	33	61	86
3	29	15	58	61	43	325	2,080	371	80	46	58	500
4	23	14	58	61	43	260	1,750	315	67	900	52	430
5	21	16	58	61	46	200	1,400	287	70	261	61	325
6	19	19	61	69	46	260	980	287	88	202	61	170
7	17	22	58	86	43	885	500	287	108	145	41	96
8	14	25	58	260	86	3,300	360	287	108	113	43	81
9	13	27	58	170	675	5,110	325	261	104	76	41	65
10	12	28	58	119	1,800	4,630	360	261	92	58	39	55
11	12	28	55	119	1,250	2,340	394	261	61	52	35	49
12	12	27	55	119	465	1,010	325	261	55	49	46	46
13	12	25	58	119	395	395	260	287	52	43	43	46
14	12	26	55	108	1,860	290	200	287	64	35	28	40
15	12	27	52	102	1,750	260	170	261	58	49	12	32
16	11	33	46	102	885	230	170	222	49	58	16	34
17	12	40	46	102	850	170	140	202	43	55	19	37
18	12	43	46	102	780	170	119	185	37	55	17	37
19	12	52	46	96	640	140	108	177	37	55	58	37
20	12	55	46	91	430	170	102	170	37	58	1,750	37
21	10	52	43	91	290	140	119	128	37	92	3,410	34
22	10	52	37	86	260	119	675	96	37	113	2,480	27
23	10	52	36	86	200	119	1,070	84	37	80	1,150	28
24	11	52	36	86	170	119	640	88	67	73	96	52
25	10	49	37	81	140	108	395	139	52	70	61	230
26	10	46	40	81	119	102	1,600	371	41	67	43	260
27	10	43	46	77	108	119	4,870	287	35	61	40	465
28	11	40	55	73	108	1,180	5,170	222	35	52	26	230
29	19	43	58	69	------	2,480	3,520	170	33	55	81	108
30	19	46	49	69	------	3,250	1,350	118	31	58	61	91
31	20	------	52	65	------	1,890	------	92	------	61	52	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	43	10	15.6	0.020	0.02
November	55	14	34.5	.045	.05
December	61	36	50.6	.065	.07
January	260	58	94.5	.122	.14
February	1,860	43	485	.626	.65
March	5,110	102	976	1.26	1.45
April	5,170	102	1,080	1.39	1.55
May	515	84	239	.308	.36
June	108	31	60.1	.078	.09
July	900	33	102	.132	.15
August	3,410	12	324	.418	.48
September	500	27	126	.163	.18
The year	5,170	10	297	.383	5.19

POND RIVER NEAR WHITE PLAINS, KY.

LOCATION.—Chain gage at Illinois Central Railroad bridge 3 miles northeast of White Plains, Hopkins County. Zero of gage is 375.98 feet above mean sea level.

DRAINAGE AREA.—315 square miles.

RECORDS AVAILABLE.—June, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,750 second-feet Apr. 28 (gage height, 12.19 feet); minimum, 0.2 second-foot Oct. 14 (gage height, 0.55 foot).

1928–1931: Maximum discharge, 7,850 second-feet Jan. 10, 1930 (gage height, 16.26 feet); minimum, 0.1 second-foot Sept. 20, 1928.

REMARKS.—Records fair except those for lowest stages, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	1.7	2.5	3.0	6.0	18	645	630	14	11	11	19
2	1.7	1.7	2.5	5.6	6.0	60	850	367	13	10	9.8	37
3	1.5	1.7	2.3	5.2	6.0	224	910	207	13	17	9.6	124
4	1.4	1.7	2.5	5.2	6.0	172	690	131	13	233	9.4	215
5	1.2	1.6	3.0	5.6	5.8	103	570	90	13	355	103	103
6	0.9	1.5	3.4	5.4	5.8	69	428	72	13	145	730	27
7	0.8	1.4	3.6	4.8	5.4	333	280	66	17	117	1,160	18
8	1.0	1.3	3.4	4.8	6.2	1,330	188	55	18	117	1,140	15
9	0.8	1.5	3.2	4.8	30	1,480	132	48	55	35	510	14
10	0.6	2.3	3.0	6.8	630	1,650	140	41	45	14	117	13
11	0.5	2.7	3.0	6.2	810	1,600	403	33	19	12	24	13
12	0.4	2.9	3.0	6.2	415	1,160	510	31	15	11	18	12
13	0.4	3.0	2.7	6.4	164	690	333	27	14	10	17	12
14	0.2	3.0	2.7	6.2	300	379	197	25	14	12	16	11
15	0.4	2.5	2.7	6.0	810	197	132	24	12	12	15	11
16	0.6	3.0	2.7	6.6	615	117	96	22	12	11	14	10
17	0.5	4.0	2.7	6.8	290	82	72	20	11	11	41	9.4
18	1.1	3.2	2.7	7.4	206	60	57	20	11	15	58	9.0
19	1.4	3.0	2.7	7.6	311	48	54	19	11	14	131	8.6
20	1.3	2.9	2.3	7.4	233	40	40	19	11	14	207	8.4
21	1.0	2.9	2.3	7.8	140	34	63	19	29	191	145	8.2
22	1.0	2.9	2.3	9.2	75	30	355	18	233	191	25	8.0
23	1.3	2.7	2.3	10	57	25	830	18	96	183	18	8.2
24	1.0	2.5	2.5	10	40	22	660	18	58	58	16	10
25	0.8	2.5	2.7	8.9	29	19	355	18	52	19	15	10
26	0.8	2.7	2.9	8.3	22	14	1,120	18	41	15	15	10
27	1.0	2.5	4.0	7.4	16	17	1,600	16	18	14	14	12
28	1.7	2.5	3.8	7.2	13	333	1,700	15	14	12	35	13
29	1.7	2.5	3.2	6.8	-------	1,190	1,600	15	13	12	29	13
30	1.7	2.5	3.0	6.8	-------	1,360	1,090	16	12	12	29	12
31	1.9	-------	2.9	6.4	-------	970	-------	14	-------	11	41	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.2	0.2	1.06	0.0034	0.004
November	4.0	1.3	2.43	.0077	.009
December	4.0	2.3	2.85	.0090	.01
January	10	3.0	6.67	.021	.02
February	810	5.4	188	.597	.62
March	1,650	14	446	1.42	1.64
April	1,700	40	537	1.70	1.90
May	630	14	68.8	.218	.25
June	233	11	30.3	.096	.11
July	355	10	61.1	.194	.22
August	1,160	9.4	152	.483	.56
September	215	8.0	26.5	.084	.09
The year	1,700	.2	126	.400	5.43

WABASH RIVER BASIN

WABASH RIVER AT BLUFFTON, IND.

LOCATION.—Chain gage in sec. 4, T. 26 N., R. 12 E., at Main Street highway bridge in Bluffton, Wells County.

DRAINAGE AREA.—500 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, about 1,600 second-feet Apr. 4 (gage height not determined); minimum, 8.2 second-feet July 18, Sept. 14 (gage height, 0.96 foot).

REMARKS.—Records June to September good; records October to May fair for medium stages, poor for low stages. Discharge estimated Oct. 1 to Dec. 8, Dec. 10–12, Dec. 17 to Jan. 3, Jan. 29 to Feb. 5, Feb. 8–10, Mar. 14–24, Apr. 1 to May 6.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	10	30	11	15	34	475	85	15	605	11	9.7
2	10	10	27	11	14	34	400	80	15	360	9.5	47
3	10	10	25	11	13	34	750	80	15	143	9.5	50
4	10	10	30	10	12	23	1,600	75	14	134	9.2	83
5	10	10	35	10	12	23	1,100	70	13	99	13	76
6	10	10	32	10	15	23	830	80	13	93	11	52
7	12	10	29	10	23	23	575	97	22	119	10	46
8	17	10	26	10	30	23	375	97	24	161	9.9	44
9	23	10	23	10	35	47	285	79	23	93	10	30
10	17	10	20	10	30	47	235	62	17	62	11	18
11	14	12	18	10	23	47	315	62	16	23	10	13
12	12	15	16	10	15	47	260	62	14	21	10	12
13	11	17	15	10	23	62	210	62	10	14	10	8.5
14	10	17	15	10	34	80	185	62	9.7	11	9.7	8.2
15	13	16	15	10	34	500	160	62	9.7	10	14	9.2
16	20	15	15	10	34	400	135	62	9.6	9.9	13	20
17	17	14	14	10	34	275	110	62	235	8.5	12	9.5
18	14	14	14	10	34	185	105	47	128	8.2	11	9.7
19	12	14	14	10	62	135	95	47	74	9.7	10	11
20	11	13	14	10	97	185	95	34	59	10	9.7	14
21	11	13	14	10	97	185	95	34	33	10	9.5	16
22	10	13	13	10	97	135	105	34	38	92	9.6	30
23	10	13	13	10	62	115	95	34	70	185	8.5	20
24	10	12	13	10	62	95	90	34	35	330	8.3	30
25	10	12	13	10	62	79	80	34	17	161	8.5	53
26	10	12	13	10	34	79	95	34	14	93	8.5	32
27	12	12	12	10	34	79	115	34	12	53	8.8	134
28	12	12	12	15	34	405	115	23	9.5	46	9.7	375
29	10	12	12	22	------	910	95	15	14	21	10	272
30	10	20	12	19	------	675	90	15	173	19	9.7	117
31	10	------	12	17	------	535	------	15	------	14	9.6	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	23	10	12.2	0.024	0.03
November	20	10	12.6	.025	.03
December	35	12	18.3	.037	.04
January	22	10	11.2	.022	.03
February	97	12	38.2	.076	.08
March	910	23	178	.356	.41
April	1,600	80	309	.618	.69
May	97	15	54.0	.108	.12
June	235	9.5	38.4	.077	.09
July	605	8.2	97.4	.195	.22
August	14	8.3	10.1	.020	.02
September	375	8.2	55.0	.110	.12
The year	1,600	8.2	69.4	.139	1.88

WABASH RIVER AT WABASH, IND.

LOCATION.—Chain gage in sec. 14, T. 27 N., R. 6 E., at Wabash Street Bridge, in Wabash, Wabash County.
DRAINAGE AREA.—1,740 square miles.
RECORDS AVAILABLE.—April, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 6,220 second-feet Apr. 18–19, 1930 (gage height, 9.95 feet); minimum, 39 second-feet Aug. 24–25, 1931 (gage height, 1.94 feet).
A gage height of 22.65 feet occurred Jan. 16, 1930.
REMARKS.—Records good. Discharge estimated because of ice effect Nov. 27 to Dec. 4, Dec. 24, 1930, to Jan. 25, 1931.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1	1,670	1,050	128	117	87	87	16	470	265	165	49	93	73
2	1,510	380	139	93	73	79	17	540	248	217	49	101	67
3	1,190	615	109	86	67	63	18	6,220	248	360	54	109	73
4	1,050	492	109	79	63	63	19	6,220	248	217	57	73	79
5	730	425	113	77	61	57	20	5,070	282	492	49	63	87
6	700	402	124	79	790	67	21	3,050	360	360	43	57	79
7	642	360	202	79	492	63	22	2,150	248	265	67	67	79
8	590	320	188	72	730	57	23	1,830	232	188	188	67	85
9	565	320	146	67	615	63	24	1,050	217	188	93	67	79
10	492	282	188	67	565	63	25	910	188	175	72	67	79
11	448	265	188	67	300	65	26	760	188	155	57	67	79
12	402	282	175	62	202	63	27	790	175	162	300	57	188
13	380	320	139	61	165	65	28	850	188	170	320	57	188
14	402	248	128	61	128	67	29	590	150	128	175	65	162
15	448	248	139	53	109	87	30	540	139	118	165	74	150
							31	------	175	------	101	79	------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	117	61			113	150	1,050	428	88	600	58	76
2	61	65	100		106	155	850	360	85	428	48	70
3	73	72			101	132	1,190	280	91	575	67	78
4	79	74			82	141	5,980	262	91	450	62	213
5	86	67	146		90	120	4,520	229	94	360	88	229
6	79	65	175		96	109	3,520	245	85	262	74	179
7	85	67	175		90	109	1,510	275	875	229	77	142
8	93	57	175		101	146	1,120	213	600	184	65	125
9	128	57	141		150	132	875	213	382	140	158	110
10	57	61	146		141	120	720	213	245	158	142	96
11	63	63	146	95	150	132	980	213	174	131	111	78
12	67	67	132		150	113	1,590	213	135	97	108	66
13	63	69	113		160	175	1,120	213	123	91	85	53
14	77	72	109		248	232	810	184	198	82	67	50
15	74	72	117		282	790	630	158	320	67	62	64
16	77	74	61		360	2,240	525	158	300	65	54	66
17	74	77	82		380	1,590	475	144	175	56	51	146
18	67	74	82		300	1,120	405	127	111	51	58	405
19	62	59	79		320	980	382	123	133	88	45	280
20	57	67	82		340	1,050	300	168	168	428	53	181
21	53	72	87		380	1,510	300	174	140	198	51	121
22	52	63	85		320	1,190	320	174	127	262	55	84
23	57	67	82	120	300	910	320	149	174	213	41	73
24	67	74			265	730	300	149	245	575	39	70
25	69	65			232	615	280	135	213	262	39	68
26	65	65		146	202	540	360	135	168	280	42	280
27	63			150	188	470	690	127	119	133	51	750
28	61	63	80	141	160	790	910	115	131	129	77	600
29	57			137	------	2,690	780	115	158	111	85	320
30	62			109	------	2,870	575	108	810	97	85	382
31	69	------		128	------	1,670	------	127	------	74	86	------

Monthly discharge, in second-feet, of Wabash River at Wabash, Ind., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
April	6,220	380	1,410	0.810	0.90
May	1,050	139	308	.177	.20
June	492	109	186	.107	.12
July	320	43	95.5	.055	.06
August	790	57	181	.104	.12
September	188	57	85.2	.049	.05
1930–31					
October	128	52	71.4	.041	.05
November	77	57	66.6	.038	.04
December	175	61	105	.060	.07
January	150	----------	107	.062	.07
February	380	82	207	.119	.12
March	2,870	109	765	.440	.51
April	5,980	280	1,110	.638	.71
May	428	108	191	.110	.13
June	875	85	225	.129	.14
July	600	51	222	.128	.15
August	158	39	70.5	.040	.05
September	750	50	182	.105	.12
The year	5,980	39	276	.159	2.16

WABASH RIVER AT LOGANSPORT, IND.

LOCATION.—Chain gage in sec. 35, T. 27 N., R. 1 E., at Cicott Street Bridge, at Logansport, 1,000 feet below Eel River. Zero of gage is 573.80 feet above mean sea level.

DRAINAGE AREA.—3,830 square miles.

RECORDS AVAILABLE.—April, 1903, to July, 1906; May, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,950 second-feet Apr. 4, 5 (gage height, 7.10 feet); minimum, 189 second-feet July 18, 19, Aug. 18, 19 (gage height, 2.70 feet).

1923–1931: Maximum discharge, 61,400 second-feet Jan. 15, 1930 (gage height, 17.8 feet); minimum, 189 second-feet in 1931 (previously published figure of 111 second-feet Oct. 22, 1924, appears to be in error).

Maximum known stage, 25.5 feet Mar. 26, 1913.

REMARKS.—Records good except those for extreme low stages, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	520	228	855	520	502	620	2,920	1,320	430	1,500	228	855
2	520	228	1,690	520	502	580	2,290	995	430	995	228	855
3	520	228	995	350	466	540	3,130	995	520	1,150	250	855
4	520	228	855	350	430	520	9,950	925	502	1,150	250	925
5	520	282	730	350	430	520	9,950	792	350	995	260	995
6	430	350	620	430	430	520	6,250	792	350	855	260	1,070
7	430	430	620	430	466	520	3,780	730	520	664	260	780
8	430	430	620	430	466	484	2,920	730	1,500	520	260	730
9	520	430	620	430	466	520	2,500	792	1,150	350	430	570
10	430	350	620	350	600	600	1,890	730	855	336	620	484
11	430	350	620	282	560	560	2,290	730	620	220	620	350
12	430	350	520	282	520	520	3,130	995	620	430	620	282
13	430	350	520	282	600	620	2,710	730	520	350	430	282
14	430	350	520	282	560	995	2,500	730	430	282	282	282
15	430	350	520	282	484	1,890	2,090	730	430	228	282	430
16	430	350	520	282	730	4,000	1,150	675	[a] 480	228	282	1,150
17	430	350	520	282	792	4,000	1,150	620	[a] 520	228	228	5,450
18	350	282	430	282	855	2,920	1,150	620	520	189	189	2,500
19	350	282	430	282	855	2,290	1,150	620	430	189	189	1,690
20	350	282	430	282	855	2,090	995	730	430	620	228	1,320
21	282	282	430	855	855	2,290	995	730	430	1,150	228	855
22	282	282	430	855	855	2,920	995	730	430	925	250	730
23	228	282	430	520	855	2,290	995	620	620	1,150	260	730
24	228	282	520	520	730	1,890	995	520	730	3,340	260	620
25	228	282	520	520	730	1,890	995	520	730	1,690	260	570
26	228	282	520	520	675	1,500	995	350	730	855	[a] 400	855
27	228	282	520	502	675	1,500	995	282	1,150	855	580	2,090
28	228	282	520	502	620	1,500	1,690	282	520	620	580	1,890
29	228	730	520	502	------	4,950	1,890	282	520	520	1,150	1,500
30	228	730	520	502	------	6,850	1,500	430	1,690	350	995	995
31	228	------	520	502	------	4,230	------	430	------	282	925	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	520	228	371	0.097	0.11
November	730	228	340	.089	.10
December	1,690	430	603	.157	.18
January	855	282	428	.112	.13
February	855	430	627	.164	.17
March	6,850	484	1,840	.480	.55
April	9,950	995	2,530	.661	.74
May	1,320	282	682	.178	.21
June	1,690	350	639	.167	.18
July	3,340	189	749	.196	.23
August	1,150	189	396	.103	.12
September	5,450	282	1,090	.285	.32
The year	9,950	189	857	.224	3.05

[a] Estimated.

WABASH RIVER AT LAFAYETTE, IND.

LOCATION.—Chain gage in sec. 20, T. 23 N., R. 4 W., at Brown Street Bridge, at Lafayette. Zero of gage is 504.14 feet above mean sea level.

DRAINAGE AREA.—7,200 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931; May, 1901, to May, 1903.

EXTREMES.—Maximum discharge during year, 13,100 second-feet Apr. 5 (gage height, 7.78 feet); minimum, 538 second-feet Jan. 15 (gage height, 0.82 foot).

1927–1931: Maximum discharge, 74,600 second-feet Jan. 16, 1930 (gage height, 24.07 feet); minimum occurred in 1931.

Maximum stage known, 32.9 feet Mar. 26, 1913.

REMARKS.—Records good. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	810	[a]1,500	[a] 700	1,380	1,250	5,880	2,750	1,650	4,550	910	1,650
2	910	910	[a]2,000	[a] 750	910	1,130	4,930	2,090	1,380	3,820	910	1,510
3	1,020	910	[a]2,750	[a] 900	1,250	1,020	4,360	1,720	1,650	2,920	910	1,510
4	1,020	910	2,920	965	1,020	1,020	5,120	1,580	1,250	2,090	710	1,380
5	810	910	2,410	965	910	1,130	13,100	1,580	1,380	2,090	910	1,860
6	810	910	2,250	1,580	910	1,020	11,000	1,580	1,380	2,250	910	1,860
7	910	810	1,650	1,580	910	1,130	7,800	2,250	3,280	1,650	910	1,860
8	1,130	810	1,380	965	1,130	1,380	5,880	2,090	3,640	1,510	810	1,580
9	1,020	810	2,090	1,080	1,130	1,130	4,360	1,860	4,740	1,250	1,130	1,320
10	1,020	810	2,090	1,190	1,130	1,650	4,360	1,860	4,360	1,250	1,380	1,190
11	1,130	810	1,130	965	1,130	1,020	3,640	2,250	2,580	1,130	1,250	1,020
12	1,130	810	1,130	965	1,020	1,020	3,460	2,580	2,410	1,020	1,380	1,020
13	710	810	1,380	[a]1,000	1,790	910	4,740	2,580	2,090	1,020	1,380	910
14	1,020	810	1,650	547	1,250	1,250	4,180	2,250	2,090	1,020	1,020	1,080
15	1,020	810	1,130	538	1,020	1,650	3.280	2,250	1,940	810	1,020	1,720
16	910	810	[a]1,000	810	1,250	4,360	3,460	2,250	1,790	810	1,020	1,650
17	1,250	1,020	690	810	1,380	5,880	2,580	2,250	1,790	910	910	8,290
18	910	910	690	910	1,940	5,120	2,580	1,790	1,650	810	910	5,880
19	910	810	[a] 750	[a]1,000	1,650	5,120	2,580	1,380	1,380	1,020	810	3,460
20	810	810	[a]1,000	[a]1,250	1,940	4,000	2,580	2,410	1,380	1,020	1,020	2,750
21	1,380	810	[a]1,000	[a]1,100	1,940	3,640	2,250	2,410	1,380	1,790	1,130	1,940
22	910	810	[a]1,000	910	2,090	4,360	2,750	2,410	1,380	2,920	910	1,790
23	1,380	810	760	910	1,790	4,360	2,090	2,090	2,580	2,410	910	1,510
24	910	810	680	1,020	2,090	4,360	2,250	1,790	2,250	2,250	910	1,380
25	810	810	860	1,130	1,510	3,640	2,250	1,510	2,410	3,640	810	2,920
26	810	910	965	1,510	1,650	3,100	2,580	2,090	3,640	2,580	1,020	1,790
27	810	910	965	1,130	1,250	2,750	2,410	1,790	3,100	1,940	1,130	2,410
28	810	610	1,190	1,380	1,020	3,280	2,580	1,250	2,580	1,650	1,580	3,100
29	810	810	760	1,380	-------	4,360	3,280	1,510	1,940	1,380	2,250	3,100
30	810	[a]1,000	[a] 750	910	-------	8,800	3,280	1,380	2,750	1,130	2,090	2,580
31	810	-------	660	1,250	-------	8,800	-------	1,510	-------	1,130	1,720	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,380	710	962	0.134	0.15
November	1,020	610	843	.117	.13
December	2,920	660	1,330	.185	.21
January	1,580	538	1,040	.144	.17
February	2,090	910	1,370	.190	.20
March	8,800	910	3,020	.419	.48
April	13,100	2,090	4,190	.582	.65
May	2,750	1,250	1,970	.274	.32
June	4,740	1,250	2,260	.314	.35
July	4,550	810	1,800	.250	.29
August	2,250	710	1,120	.156	.18
September	8,290	910	2,200	.306	.34
The year	13,100	538	1,840	.256	3.47

[a] Discharge estimated because of ice effect.

WABASH RIVER AT MONTEZUMA, IND.

LOCATION.—Chain gage in sec. 35, T. 16 N., R. 9 W., at highway bridge at Montezuma. Zero of gage is 458.49 feet above mean sea level.
DRAINAGE AREA.—11,100 square miles.
RECORDS AVAILABLE.—October, 1927, to September, 1931.
EXTREMES.—Maximum discharge during year, 10,400 second-feet Apr. 5 (gage height, 7.44 feet); minimum, 910 second-feet Nov. 28 (gage height, 1.98 feet). 1927–1931: Maximum discharge, 100,000 second-feet Jan. 16, 1930 (gage height, 27.0 feet); minimum occurred in November, 1930.
REMARKS.—Records good. Discharge estimated Dec. 3, 4, Dec. 22 to Jan. 4 because of ice effect.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,580	1,190	1,580	1,050	1,510	2,040	7,580	3,710	2,040	2,520	1,440	2,690
2	1,580	1,190	1,310	1,100	1,440	1,730	6,240	3,540	2,200	4,050	1,380	2,360
3	1,510	1,260	2,700	1,200	1,580	1,730	5,310	3,030	1,880	4,590	1,310	2,040
4	1,440	1,260	2,900	1,400	1,580	1,580	4,950	2,860	2,040	5,310	1,190	2,200
5	1,440	1,190	3,030	1,580	1,510	1,510	10,400	2,690	3,030	4,770	1,140	2,200
6	1,380	1,190	2,860	1,730	1,510	1,440	10,400	2,520	3,540	4,230	1,140	2,040
7	1,380	1,190	2,520	1,580	1,510	1,730	10,200	2,520	3,880	2,690	1,080	2,200
8	1,440	1,190	2,360	1,800	1,510	1,880	8,380	2,860	4,230	2,520	1,040	2,040
9	1,580	1,190	2,040	1,800	1,510	1,800	5,860	3,200	4,410	2,520	1,040	1,880
10	1,730	1,190	1,880	1,380	1,510	1,800	5,130	3,540	4,770	2,040	5,310	1,660
11	1,730	1,260	2,360	1,380	1,440	1,730	4,590	3,710	4,950	1,730	3,880	1,440
12	1,730	1,310	2,040	1,440	1,440	1,730	4,410	4,050	3,880	1,660	3,370	1,310
13	1,660	1,260	1,730	1,580	1,660	1,730	4,050	3,880	3,540	1,660	2,860	1,310
14	1,580	1,260	1,730	1,080	1,730	1,730	4,230	3,880	3,370	1,510	2,360	1,260
15	1,440	1,260	1,730	1,140	1,800	1,800	4,590	3,880	3,200	1,380	1,800	5,490
16	1,440	1,310	1,380	1,190	1,880	2,200	4,230	3,710	2,860	1,310	1,580	6,050
17	1,380	1,440	1,260	1,440	2,040	4,050	3,880	3,540	2,690	1,260	1,310	8,980
18	1,380	1,580	1,310	1,510	2,040	5,310	3,540	3,200	2,520	1,080	1,260	10,400
19	1,380	1,440	1,440	1,580	2,200	5,130	3,200	2,860	2,360	1,080	1,190	9,390
20	1,510	1,380	1,310	1,440	2,200	4,590	3,200	2,690	2,200	1,260	1,580	6,240
21	1,440	1,310	1,510	990	2,040	4,230	3,030	2,860	2,040	1,310	1,510	4,770
22	1,310	1,310	1,400	1,580	2,040	4,050	3,200	3,880	1,580	5,670	1,440	3,540
23	1,660	1,310	1,000	1,580	2,200	4,230	3,880	3,880	2,860	4,770	1,310	3,030
24	1,580	1,260	1,000	1,880	2,360	4,230	3,710	3,540	2,690	3,880	1,140	3,710
25	1,440	1,260	1,150	1,880	2,040	4,410	3,540	3,370	3,030	3,200	1,140	3,200
26	1,380	1,310	1,350	1,730	2,040	4,050	3,370	2,690	2,860	3,200	2,360	2,690
27	1,380	1,140	1,600	1,660	1,880	3,710	3,200	2,690	3,540	2,690	2,200	2,860
28	1,310	910	1,450	1,660	1,880	3,880	3,200	2,520	3,370	2,360	2,040	3,200
29	1,310	1,080	1,300	1,580	-------	4,410	3,200	2,200	3,200	2,200	2,860	3,540
30	1,260	1,440	1,050	1,580	-------	4,590	3,540	2,040	2,690	1,730	2,690	3,710
31	1,260	-------	1,050	1,510	-------	7,190	-------	2,040	-------	1,580	3,200	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,730	1,260	1,470	0.132	0.15
November	1,580	910	1,260	.114	.13
December	3,030	----------	1,720	.155	.18
January	1,880	990	1,480	.133	.15
February	2,360	1,440	1,790	.161	.17
March	7,190	1,440	3,100	.279	.32
April	10,400	3,030	4,940	.445	.50
May	4,050	2,040	3,150	.284	.33
June	4,950	1,580	3,050	.275	.31
July	5,670	1,080	2,640	.238	.27
August	5,310	1,040	1,910	.172	.20
September	10,400	1,260	3,580	.323	.36
The year	10,400	910	2,510	.226	3.07

WABASH RIVER AT TERRE HAUTE, IND.

LOCATION.—Water-stage recorder in sec. 21, T. 12 N., R. 9 W., at Wabash Avenue Bridge, at Terre Haute. Zero of gage is 442.90 feet above mean sea level.

DRAINAGE AREA.—12,200 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931; at Vandalia Railway bridge 2,600 feet upstream, February, 1905, to July, 1906.

EXTREMES.—Maximum discharge during year, 19,400 second-feet Sept. 16 (gage height, 12.94 feet); minimum, 896 second-feet Dec. 24, Jan. 21 (gage height, 2.58 feet).

1927–1931: Maximum discharge, 104,000 second-feet Jan. 16, 1930 (gage height, 25.63 feet); minimum occurred in 1931.

Maximum stage known, about 33.0 feet on present gage Mar. 27, 1913.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,780	1,420	1,780	1,100	1,700	1,990	8,150	3,970	2,280	2,800	1,790	3,100
2	1,710	1,400	1,360	1,250	1,710	1,990	7,120	3,390	2,360	3,490	1,700	3,030
3	1,710	1,430	2,060	1,380	1,780	1,990	5,930	3,570	2,360	4,930	1,570	3,030
4	1,710	1,460	2,880	1,610	1,680	1,920	5,420	3,180	2,280	5,420	1,470	2,730
5	1,640	1,440	3,180	1,750	1,650	1,850	5,590	2,960	3,030	5,420	1,440	2,730
6	1,570	1,430	3,030	1,810	1,700	1,840	9,050	2,880	3,890	4,930	1,390	2,500
7	1,570	1,430	2,880	1,820	1,740	1,990	10,700	2,880	3,490	4,050	1,330	2,500
8	1,650	1,420	2,660	1,840	1,750	2,130	9,230	3,100	3,570	3,940	1,300	2,580
9	1,780	1,420	2,360	1,920	1,750	2,130	7,290	3,490	4,450	2,960	1,260	2,430
10	1,920	1,460	2,130	1,740	1,740	2,060	6,100	3,570	4,930	2,580	2,460	2,200
11	1,990	1,500	2,280	1,680	1,810	2,060	5,250	4,050	5,420	2,280	4,610	1,990
12	1,920	1,470	2,280	1,700	1,850	2,200	4,930	4,290	4,770	2,130	3,810	1,850
13	1,850	1,440	2,060	1,600	1,990	2,060	4,610	4,290	4,050	1,990	3,330	1,640
14	1,820	1,440	1,920	1,360	1,990	2,060	4,770	4,290	3,730	1,920	2,800	1,630
15	1,750	1,460	1,920	1,130	2,130	2,130	5,090	4,290	3,730	1,850	2,360	12,000
16	1,720	1,490	1,920	1,270	1,990	2,360	4,610	3,970	3,330	1,710	1,990	16,700
17	1,720	1,510	1,710	1,290	2,130	2,960	4,450	3,650	3,030	1,570	1,750	13,200
18	1,650	1,570	1,580	1,630	2,130	4,770	4,130	3,330	2,800	1,490	1,610	12,000
19	1,650	1,650	1,600	1,750	2,280	5,420	3,730	3,180	2,580	1,430	1,640	11,800
20	1,630	1,570	1,580	1,530	2,360	5,090	3,650	3,100	2,500	1,540	1,750	9,590
21	1,600	1,530	1,570	1,040	2,280	4,770	3,490	3,100	2,360	2,500	1,920	6,780
22	1,600	1,500	1,500	1,390	2,360	4,450	3,490	3,970	2,130	4,450	1,770	5,250
23	1,740	1,470	1,430	1,630	2,500	4,290	3,890	4,290	3,330	5,250	1,680	4,290
24	1,720	1,440	1,040	1,820	2,430	4,610	4,290	3,890	4,050	4,450	1,630	3,650
25	1,750	1,430	1,300	1,990	2,360	4,610	3,970	3,570	3,330	3,730	1,840	4,130
26	1,610	1,440	1,610	1,920	2,430	4,450	3,810	3,260	3,410	3,490	1,920	3,410
27	1,530	1,420	1,810	1,850	2,200	4,130	3,730	2,880	3,490	3,730	2,660	3,410
28	1,470	1,090	1,810	1,920	2,130	4,050	3,650	2,800	3,890	3,260	2,880	3,490
29	1,440	1,260	1,720	1,840	-------	4,290	3,650	2,660	3,650	2,730	3,100	3,650
30	1,430	1,700	1,270	1,820	-------	4,770	3,730	2,430	3,490	2,280	3,260	4,130
31	1,430	-------	1,270	1,840	-------	6,610	-------	2,360	-------	1,990	3,260	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,990	1,430	1,680	0.138	0.16
November	1,700	1,090	1,460	.120	.13
December	3,180	1,040	1,920	.157	.18
January	1,990	1,040	1,620	.133	.15
February	2,500	1,650	2,020	.166	.17
March	6,610	1,840	3,290	.270	.31
April	10,700	3,490	5,250	.430	.48
May	4,290	2,360	3,460	.284	.33
June	5,420	2,130	3,390	.278	.31
July	5,420	1,430	3,110	.255	.29
August	4,610	1,260	2,170	.178	.21
September	16,700	1,630	5,050	.414	.46
The year	16,700	1,040	2,860	.234	3.18

WABASH RIVER AT VINCENNES, IND.

LOCATION.—Chain and staff gages at highway bridge at Vincennes, Knox County. Zero of both gages is 396.43 feet above mean sea level.

DRAINAGE AREA.—14,000 square miles.

RECORDS AVAILABLE.—December, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 18,800 second-feet Sept. 17 (gage height, 7.72 feet); minimum, 1,530 second-feet Jan. 23, 24 (gage height, −0.19 foot).

1929–1931: Maximum discharge, about 114,000 second-feet Jan. 17, 1930 (gage height, 25.25 feet); minimum, that of Jan. 23, 24, 1931.

REMARKS.—Records good. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,850	1,630	1,630	1,730	1,850	2,350	4,570	3,630	2,490	3,450	2,490	3,450
2	1,850	1,630	1,630	1,630	1,850	2,220	5,570	3,810	2,490	3,280	2,220	7,040
3	1,850	1,630	1,850	1,730	1,850	2,220	7,260	3,810	2,490	3,110	1,970	7,040
4	1,850	1,630	1,850	1,630	1,730	1,970	6,400	3,810	2,490	4,180	2,790	7,260
5	1,850	1,630	1,630	1,630	1,850	2,090	5,770	3,450	2,490	6,610	2,090	4,970
6	1,850	1,630	3,280	1,630	1,850	1,970	5,370	3,280	2,640	6,190	1,730	3,810
7	1,850	1,630	3,280	1,730	1,730	2,220	5,370	3,110	3,630	5,370	1,970	3,280
8	1,850	1,630	3,280	1,970	1,850	3,280	7,700	3,110	3,810	4,570	1,730	2,950
9	1,850	1,630	2,790	1,970	1,850	4,180	9,310	3,280	3,450	3,810	1,730	2,640
10	1,850	1,630	2,640	1,970	1,970	4,370	7,920	3,450	3,810	3,280	1,730	2,640
11	1,850	1,630	2,490	1,850	1,850	2,950	6,820	3,450	4,370	2,950	1,630	2,640
12	1,970	1,730	2,220	1,850	1,730	2,640	5,770	3,810	4,970	2,490	1,630	2,490
13	1,970	1,630	2,090	1,730	1,730	2,490	5,370	4,370	5,170	2,350	4,180	2,220
14	1,970	1,630	2,220	1,850	1,970	2,350	4,970	4,370	4,570	2,220	3,810	1,970
15	1,970	1,630	2,350	1,850	1,970	2,490	4,770	4,370	3,990	2,090	3,280	1,850
16	1,970	1,630	2,090	1,630	1,970	2,350	5,170	3,990	3,810	2,090	2,950	3,280
17	1,970	1,630	1,970	1,730	2,090	2,220	5,170	4,180	3,450	1,970	2,490	18,800
18	1,850	1,630	1,970	1,730	2,220	2,350	4,970	3,810	3,110	1,850	2,220	16,900
19	1,850	1,630	1,970	1,630	2,220	2,640	4,570	3,630	2,950	1,850	2,220	14,300
20	1,850	1,730	1,970	1,630	2,220	4,570	4,180	3,630	2,790	1,730	2,640	12,800
21	1,850	1,730	1,850	1,630	2,220	5,170	3,990	3,450	2,640	2,090	2,490	11,300
22	1,730	1,730	1,730	1,850	2,350	5,170	3,810	3,450	2,490	2,090	2,220	9,070
23	1,730	1,730	1,730	1,530	2,350	5,170	3,630	3,450	2,490	2,790	1,970	7,040
24	1,730	1,730	1,730	1,530	2,220	3,990	3,630	3,990	2,640	4,370	1,970	5,770
25	1,850	1,730	1,730	1,630	2,350	4,370	3,630	3,810	3,990	4,570	2,090	4,770
26	1,850	1,730	1,730	1,630	2,490	4,370	4,570	3,810	3,630	3,810	2,220	4,570
27	1,850	1,730	1,730	1,970	2,350	4,370	4,970	3,450	3,280	3,450	2,350	4,370
28	1,730	1,730	1,730	1,970	2,350	4,370	4,370	3,280	3,280	3,810	2,350	4,180
29	1,730	1,630	1,850	1,970	-------	4,370	3,990	2,950	3,450	3,450	3,110	3,990
30	1,730	1,630	1,850	1,850	-------	4,770	3,810	2,950	3,630	3,280	3,280	4,180
31	1,630	-------	1,730	1,970	-------	4,570	-------	2,790	-------	2,790	3,450	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,970	1,630	1,840	0.131	0.15
November	1,730	1,630	1,660	.119	.13
December	3,280	1,630	2,080	.149	.17
January	1,970	1,530	1,760	.126	.15
February	2,490	1,730	2,040	.146	.15
March	5,170	1,970	3,370	.241	.28
April	9,310	3,630	5,250	.375	.42
May	4,370	2,790	3,600	.257	.30
June	5,170	2,490	3,350	.239	.27
July	6,610	1,730	3,290	.235	.27
August	4,180	1,630	2,420	.173	.20
September	18,800	1,850	6,050	.432	.48
The year	18,800	1,530	3,060	.219	2.97

WABASH RIVER AT MOUNT CARMEL, ILL.

LOCATION.—Water-stage recorder at Southern Railway bridge at Mount Carmel, Wabash County. Zero of gage is 372.45 feet above mean sea level.

DRAINAGE AREA.—28,600 square miles.

RECORDS AVAILABLE.—January, 1908, to September, 1913; October, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 30,500 second-feet Apr. 8 (gage height, 8.50 feet); minimum, 2,260 second-feet Dec. 5 (minimum gage height, 0.52 foot Nov. 7).

1908–1913, 1927–1931: Maximum gage height, 31.0 feet Mar. 30, 1913 (discharge not determined); minimum, 0.3 foot Sept. 12, 1908 (discharge not determined).

REMARKS.—Records good. Discharge determined on basis of slope as obtained by use of an auxiliary chain gage on Cleveland, Cincinnati, Chicago & St. Louis Railway bridge 3 miles downstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,050	2,570	2,450	e2,350	3,140	3,930	20,400	15,000	5,270	6,680	5,160	7,650
2	2,990	2,660	2,570	2,270	3,110	3,760	21,700	13,400	4,900	6,470	4,820	15,300
3	2,930	2,660	3,000	2,600	3,080	3,750	20,500	12,800	4,920	5,820	4,170	24,000
4	2,850	2,630	2,780	2,820	2,850	3,670	21,300	11,500	4,860	6,020	4,000	27,500
5	2,820	2,540	2,260	2,630	2,940	3,410	23,800	10,300	5,000	10,400	3,780	24,500
6	2,880	2,480	3,590	2,720	2,350	3,440	25,600	9,020	4,790	11,600	3,590	22,700
7	2,850	2,450	4,490	2,820	2,910	5,050	27,100	8,640	5,050	14,600	3,780	15,400
8	2,910	2,480	4,390	2,820	2,850	10,700	29,800	8,260	6,120	15,400	3,780	12,200
9	2,790	2,540	4,390	3,030	3,050	17,500	28,400	8,180	6,430	13,800	3,630	10,100
10	2,760	2,600	4,150	3,320	3,220	19,700	25,800	8,260	6,620	11,200	3,610	8,500
11	2,820	2,540	4,060	3,590	3,150	19,400	22,900	8,260	7,090	8,580	3,540	7,110
12	2,880	2,570	3,950	3,530	3,410	17,400	20,100	7,860	8,080	7,420	3,400	6,420
13	3,050	2,570	3,760	3,410	3,360	15,100	17,400	8,180	8,730	6,280	5,050	5,680
14	2,990	2,570	3,860	e3,200	3,620	13,500	14,800	8,540	8,260	5,620	5,410	5,080
15	2,990	2,570	3,620	e3,000	4,050	11,400	13,700	8,400	7,180	5,160	5,050	4,660
16	2,860	2,910	3,450	e2,900	4,220	10,400	13,200	8,400	6,460	4,820	4,940	5,160
17	3,260	2,720	e3,350	2,850	4,460	9,680	12,500	8,000	6,220	4,490	4,490	18,200
18	3,460	2,570	e3,300	2,820	4,630	8,880	11,800	7,860	6,280	4,280	4,220	25,800
19	3,190	2,660	e3,250	2,880	4,870	8,610	11,300	7,460	6,280	4,000	4,020	28,900
20	2,940	2,660	3,220	2,820	4,870	9,920	11,000	6,980	5,720	4,000	4,380	29,000
21	2,790	2,910	3,020	e2,800	4,690	10,200	10,300	7,300	5,350	5,250	4,660	27,700
22	2,850	2,820	2,940	e2,800	4,850	9,960	10,100	7,370	4,850	8,450	4,570	21,700
23	2,780	2,820	e2,850	2,730	4,350	9,400	9,990	7,680	4,720	10,500	4,710	16,200
24	2,850	2,690	e2,800	2,630	4,010	9,120	9,950	8,500	4,540	9,540	4,320	13,200
25	2,850	2,760	2,780	2,760	4,220	8,610	10,800	8,450	5,530	9,350	4,070	10,500
26	2,820	2,630	2,750	2,850	4,150	8,610	12,800	8,000	4,440	8,970	4,350	9,520
27	2,940	e2,550	2,810	3,190	4,150	8,610	13,900	7,900	7,300	8,970	5,430	8,910
28	2,880	e2,500	2,660	3,190	4,150	9,120	15,000	7,150	7,400	9,250	5,900	8,480
29	2,600	e2,600	e2,550	3,060	-------	12,500	15,400	6,280	7,280	8,730	6,470	8,180
30	2,420	2,720	e2,500	3,280	-------	16,000	15,700	5,980	7,180	7,480	7,070	8,400
31	2,480	-------	e2,400	3,220	-------	17,200	-------	5,580	-------	6,100	7,260	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,460	2,420	2,890	0.101	0.12
November	2,910	2,450	2,630	.092	.10
December	4,490	2,260	3,220	.113	.13
January	3,590	2,270	2,930	.102	.12
February	4,870	2,850	3,760	.131	.14
March	19,700	3,410	10,300	.360	.42
April	29,800	9,950	17,200	.601	.67
May	15,000	5,580	8,560	.299	.34
June	8,730	4,440	6,100	.213	.24
July	15,400	4,000	8,040	.281	.32
August	7,260	3,400	4,630	.162	.19
September	29,000	4,660	14,600	.510	.57
The year	29,800	2,260	7,060	.247	3.36

e Estimated because of ice.

SALAMONIE RIVER AT DORA, IND.

LOCATION.—Chain gage in sec. 18, T. 27 N., R. 8 E., at highway bridge at Dora, Wabash County, 4 miles above mouth.
DRAINAGE AREA.—504 square miles.
RECORDS AVAILABLE.—April, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 2,960 second-feet Apr. 4, 1931 (gage height, 6.21 feet); minimum, 12 second-feet Aug. 26, 1931 (gage height, 1.15 feet).
REMARKS.—Records fair.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930													
1	218	715	31	122	26	23	16	74	74	30	23	53	36
2	198	625	28	109	26	23	17	1,080	74	24	23	157	33
3	185	558	28	88	23	21	18	2,070	74	185	23	185	33
4	160	157	28	76	23	26	19	2,350	154	625	23	125	22
5	142	142	26	76	31	28	20	2,160	142	580	23	91	21
6	142	137	31	74	580	24	21	1,800	76	188	23	31	19
7	142	122	31	74	580	31	22	1,140	72	188	23	23	19
8	137	125	31	43	580	31	23	1,080	72	205	23	23	18
9	131	103	31	23	166	31	24	670	66	166	23	23	21
10	140	103	36	23	125	27	25	310	66	160	23	23	31
11	131	98	26	23	125	27	26	239	61	208	23	23	27
12	109	137	26	23	57	31	27	239	61	350	28	21	21
13	88	142	26	23	61	31	28	236	61	185	66	21	19
14	76	76	26	23	61	46	29	410	36	157	74	19	19
15	74	74	31	23	61	50	30	580	39	166	35	23	21
							31	-------	31	------	26	23	------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	21	a23	50		27	51	625	a110	35	140	28	55
2	23	a21	46		22	51	310	a105	22	55	18	51
3	22	24	46		17	38	490	a100	27	272	33	151
4	21	22	66		17	35	2,960	93	24	350	19	370
5	21	22	70		17	36	2,070	84	19	176	61	310
6	19	22	66		15	36	760	84	43	151	46	208
7	a25	a21	57		a25	39	715	103	330	112	33	112
8	a35	a20	57	a30	a40	39	430	84	125	81	31	68
9	a32	a20	43		a55	41	330	88	84	70	148	38
10	a30	a21	43		a45	51	253	74	57	59	57	44
11	a28	a24	39		a35	55	a350	66	46	48	28	41
12	a26	a25	39		a25	55	a250	53	33	30	39	27
13	a24	a25			a35	66	a200	61	21	32	46	22
14	a26	a24			a55	72	a150	61	19	18	36	20
15	a28	a22			68	960	131	64	125	33	21	20
16	32	a22			106	860	117	51	88	14	36	48
17	36	a21			91	512	148	51	46	12	39	134
18	a32	a20			109	430	a140	68	28	14	18	670
19	a29	a20			117	370	a125	51	19	28	16	330
20	a27	a19		a28	122	330	a135	55	15	160	18	157
21	a26	18	a28		122	490	145	51	30	253	18	106
22	a26	18			101	330	140	48	41	218	18	76
23	a25	15			101	131	125	44	55	1,080	18	51
24	a25	17			46	46	117	41	81	670	14	41
25	a25	16		41	46	185	114	38	38	290	14	55
26	a25	16		44	46	202	a125	35	24	166	12	272
27	a26	16		41	51	182	a200	35	17	103	17	860
28	a28	16		38	51	390	a150	32	21	70	27	580
29	a28	16		38	------	1,800	a125	32	41	46	48	310
30	a27	50		38	------	1,800	a115	30	330	31	44	215
31	a25	------		36	------	860	-------	41	-------	21	91	-------

a Estimated.

Monthly discharge, in second-feet, of Salamonie River at Dora, Ind., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
April	2,350	74	550	1.09	1.22
May	715	31	144	.286	.33
June	625	24	128	.254	.28
July	122	23	42.1	.084	.10
August	580	19	109	.216	.25
September	50	18	27.0	.054	.06
1930–31					
October	36	19	26.5	.053	.06
November	50	15	21.2	.042	.05
December	70		37.2	.074	.09
January	44		31.5	.062	.07
February	122	15	57.4	.114	.12
March	1,800	35	340	.675	.78
April	2,960	114	402	.798	.89
May	110	30	62.3	.124	.14
June	330	15	62.8	.125	.14
July	1,080	12	155	.308	.36
August	148	12	35.2	.070	.08
September	860	20	181	.359	.40
The year	2,960	12	118	.234	3.18

MISSISSINEWA RIVER AT MARION, IND.

LOCATION.—Chain gage in sec. 31, T. 25 N., R. 7 E., at Highland Avenue Bridge, in Marion, Grant County.

DRAINAGE AREA.—762 square miles.

RECORDS AVAILABLE.—August, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period of record, 2,970 second-feet Apr. 4, 1931 (gage height, 5.0 feet); minimum, 22 second-feet Aug. 21, 1931 (gage height, 0.10 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1930			1930			1930		
1		46	11		43	21		38
2		57	12		43	22		38
3		69	13		43	23		38
4		65	14		41	24	60	38
5		60	15		43	25	46	107
6		60	16		225	26	65	245
7		57	17		113	27	57	95
8		46	18		60	28	53	107
9		43	19		53	29	43	57
10		43	20		46	30	43	53
						31	43	

Daily and monthly discharge, in second-feet, of Mississinewa River at Marion, Ind., 1930–31—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	50	46	62	43	65	86	513	257	57	645	46	450
2	50	43	72	43	65	81	471	233	50	645	57	366
3	50	46	104	43	65	78	1,980	186	46	578	50	513
4	41	46	98	43	65	74	2,970	163	107	326	43	785
5	36	53	86	50	69	74	2,060	163	46	163	43	450
6	41	60	86	65	74	69	950	171	43	89	38	285
7	65	57	116	89	74	74	645	186	60	65	43	167
8	57	53	104	74	86	78	534	171	78	50	41	104
9	53	53	92	60	110	107	429	178	89	36	60	86
10	50	53	86	60	110	148	429	171	107	41	83	48
11	46	50	76	74	104	141	785	156	65	43	120	39
12	46	50	86	69	104	127	600	148	60	36	78	35
13	46	57	76	60	130	600	429	148	53	36	50	42
14	50	65	62	53	206	1,210	366	194	43	36	89	45
15	53	69	55	50	167	1,070	387	134	74	36	53	285
16	53	67	55	50	130	735	346	127	107	31	43	2,870
17	50	62	55	41	159	556	265	107	46	43	43	890
18	43	58	58	41	182	429	233	95	53	57	36	429
19	41	58	58	46	213	492	178	83	46	50	43	245
20	43	55	55	50	198	513	209	101	43	107	24	152
21	43	48	55	53	167	450	233	107	41	1,580	22	81
22	46	45	52	60	144	429	241	134	57	534	31	72
23	57	45	52	57	130	346	225	107	89	2,420	33	130
24	50	45	52	57	144	257	217	95	835	890	36	124
25	46	48	52	60	124	233	209	43	492	387	38	138
26	46	48	58	60	110	217	366	69	429	241	43	690
27	46	42	58	53	92	194	556	120	156	163	36	890
28	43	42	57	57	86	1,140	513	107	178	95	241	600
29	43	45	57	57	-------	1,820	513	74	202	83	534	253
30	50	52	43	60	-------	1,140	326	57	156	50	690	198
31	50	-------	46	65	-------	645	-------	57	-------	50	513	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
August 24–31	65	43	51.2	0.067	0.02
September	245	38	69.1	.091	.10
1930–31					
October	65	36	47.9	.063	.07
November	69	42	52.0	.068	.08
December	116	43	68.5	.090	.10
January	89	41	56.2	.074	.09
February	213	65	120	.157	.16
March	1,820	69	439	.576	.66
April	2,970	178	606	.795	.89
May	257	43	134	.176	.20
June	835	41	130	.171	.19
July	2,420	31	310	.407	.47
August	690	22	106	.139	.16
September	2,870	35	382	.501	.56
The year	2,970	22	204	.268	3.63

EEL RIVER AT NORTH MANCHESTER, IND.

LOCATION.—Chain gage in sec. 5, T. 29 N., R. 7 E., at Second Street Bridge, in North Manchester, Wabash County.
DRAINAGE AREA.—399 square miles.
RECORDS AVAILABLE.—April, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 1,720 second-feet Apr. 18, 1930 (gage height, 5.70 feet); minimum, 22 second-feet Sept. 10, 1931 (gage height, 1.92 feet).
REMARKS.—Records fair except those for extreme low stages and for estimated periods, which are poor.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1	455	255	95	47	38	61	16	930	145	72	43	56	
2	455	255	89	43	38	56	17	1,130	126	72	43	72	
3	355	217	83	38	38	47	18	1,720	145	83	38	67	
4	315	195	83	38	47	47	19	1,180	217	89	34	67	
5	295	180	75	34	43	38	20	1,130	217	72	38	67	
6	255	145	145	34	680	56	21	1,130	152	67	34	56	[a] 55
7	232	152	132	34	1,000		22	930	145	72	38	56	
8	217	152	335	38	295		23	780	152	67	47	56	
9	195	145	95	47	126		24	500	145	75	43	56	
10	195	159	83	61	275		25	415	145	72	43	52	
11	187	152	83	56	132	[a] 55	26	355	126	61	38	56	
12	180	152	83	49	89		27	295	119	56	113	61	
13	180	145	72	49	67		28	295	126	56	56	61	[a] 100
14	180	145	83	47	61		29	275	119	56	43	61	
15	180	145	83	43	56		30	275	113	47	43	56	
							31		101		43	61	

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	187		295	78	67	89	[a] 350	95	78	92	52	52
2	113		232	67	67	83	[a] 400	95	61	116	101	38
3	83		139	78	67	78	[a] 475	83	56	75	78	47
4	61		107	72	56	72	545	83	83	59	72	67
5	52		107	89	56	[a] 72	545	95	61	59	61	31
6	56		126	83	52	72	295	83	251	59	67	22
7	61		139	67	83	83	251	101	435	59	47	31
8	180		113	56	173	78	232	101	295	70	52	28
9	139		107	67	173	95	202	83	173	54	78	38
10	45		95	72	159	95	195	126	126	162	126	22
11	56		95	78	107	83	210	132	101	54	89	43
12	56		78	72	89	95	195	101	83	45	67	43
13	47		67	56	139	107	176	89	72	54	56	34
14	56		72		159	159	152	83	78	45	43	52
15	61	[a] 60	72		145	247	126	101	145	45	56	101
16	56		56		113	522	126	78	101	41	52	107
17	67		72		139	455	132	59	67	41	43	38
18	52		89	[a] 60	180	395	132	61	67	54	43	52
19	56		89		139	355	139	78	56	59	52	52
20	52		78		95	455	119	113	61	116	43	47
21	52		67		139	478	145	113	43	52	38	47
22	43		56		132	500	132	101	61	43	31	38
23	61		72	72	119	375	145	83	83	38	28	47
24	56		78	78	132	355	152	83	78	38	56	47
25	67		83	107	139	315	166	72	67	34	52	83
26			78	119	101	240	145	56	43	31	52	72
27			78	107	78	355	139	61	56	38	28	61
28	[a] 60		72	89	89	635	132	61	47	52	56	56
29			72	78	-------	635	107	61	217	47	78	47
30		101	67	72	-------	478	101	56	145	38	38	47
31		-------	47	72	-------	[a] 400	-------	83	-------	47	31	-------

[a] Discharge estimated.

Monthly discharge, in second-feet, of Eel River at North Manchester, Ind., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
April	1,720	180	507	1.27	1.42
May	255	101	158	.396	.46
June	335	47	87.9	.220	.25
July	113	34	45.0	.113	.13
August	1,080	38	130	.326	.38
September			61.7	.155	.17
1930-31					
October	187	43	70.2	.176	.20
November			61.4	.154	.17
December	295	47	96.7	.242	.28
January	119	56	73.2	.183	.21
February	180	52	114	.286	.30
March	635	72	273	.684	.79
April	545	101	212	.531	.59
May	132	56	86.1	.216	.25
June	435	43	110	.276	.31
July	162	31	58.6	.147	.17
August	126	28	57.0	.143	.16
September	107	22	49.7	.125	.14
The year	635	22	105	.263	3.57

TIPPECANOE RIVER AT PULASKI, IND.

LOCATION.—Chain gage in sec. 9, T. 29 N., R. 2 W., at highway bridge at Pulaski.
DRAINAGE AREA.—1,100 square miles.
RECORDS AVAILABLE.—October, 1927, to September, 1931.
EXTREMES.—Maximum discharge during year, 800 second-feet Mar. 30 (gage height, 2.26 feet); minimum, 232 second-feet Oct. 2 (gage height, 1.16 feet). 1927–1931: Maximum discharge, 7,410 second-feet Dec. 3, 1927 (gage height, 8.23 feet); minimum, 232 second-feet Sept. 22, Oct. 2, 1930.
REMARKS.—Records good except those for low water, which are fair. No record May 1 to July 19. Discharge estimated Apr. 26–30.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	July	Aug.	Sept.
1	238	236	440	500	350	320	740	--------	252	295
2	232	240	460	590	335	320	740	--------	252	312
3	240	236	400	640	335	320	740	--------	252	295
4	240	236	440	545	335	320	715	--------	252	295
5	240	236	400	402	335	320	740	--------	252	295
6	240	236	382	420	335	320	715	--------	252	280
7	242	236	365	402	350	320	665	--------	252	280
8	262	236	365	385	350	320	640	--------	252	265
9	250	236	330	385	335	320	615	--------	265	265
10	260	236	312	420	335	335	615	--------	280	265
11	255	236	295	402	335	335	590	--------	295	252
12	255	236	295	385	350	350	590	--------	280	240
13	255	236	312	368	368	385	568	--------	265	240
14	252	236	312	368	368	460	545	--------	265	240
15	245	236	312	350	350	522	522	--------	265	252
16	245	240	283	350	335	545	500	--------	265	265
17	240	245	286	368	335	568	500	--------	265	280
18	240	240	289	385	335	590	480	--------	265	265
19	240	240	295	385	335	590	480	--------	295	265
20	236	240	295	368	335	615	480	280	295	265
21	236	240	295	385	335	640	545	280	280	252
22	234	240	295	385	320	665	590	280	265	252
23	236	238	312	402	320	690	590	280	265	240
24	236	238	312	420	320	690	568	280	252	240
25	236	236	365	440	320	640	568	280	252	240
26	236	236	382	402	320	640		280	240	240
27	236	238	400	385	320	615		265	240	240
28	236	240	400	368	320	715	600	252	240	240
29	236	268	400	368	--------	740		265	240	240
30	238	440	400	350	--------	800		252	240	240
31	238	--------	440	350	--------	740	--------	252	252	--------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	262	232	242	0.220	0.25
November	440	236	245	.223	.25
December	460	283	349	.317	.37
January	640	350	409	.372	.43
February	368	320	336	.305	.32
March	800	320	508	.462	.53
April	740	480	601	.546	.61
July 20–31	280	252	270	.245	.11
August	295	240	261	.237	.27
September	312	240	261	.237	.26

VERMILION RIVER NEAR DANVILLE, ILL.

LOCATION.—Chain gage in sec. 22, T. 19 N., R. 11 W., at Chicago & Eastern Illinois Railway bridge 2 miles southeast of Danville, Vermilion County. Zero of gage is 503.99 feet above mean sea level.

DRAINAGE AREA.—1,280 square miles.

RECORDS AVAILABLE.—November, 1914, to August, 1921; June, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,420 second-feet July 21 (gage height, 9.72 feet); minimum, 8.7 second-feet Oct. 22 (gage height, 1.85 feet). 1914–1921, 1928–1931: Maximum discharge, 12,800 second-feet Apr. 21, 1920 (gage neight, 19.7 feet); minimum, 2.0 second-feet Oct. 14, 1920, Aug. 10, 1930.

REMARKS.—Records good. Flow regulated at times by storage reservoir on North Fork of Vermilion River 4 miles above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	31	88	26	35	42	84	262	228	505	91	208
2	15	31	262	35	39	41	86	245	204	338	76	166
3	14	34	1,080	35	42	37	86	204	171	242	89	134
4	17	32	43	30	39	33	91	180	165	1,020	76	112
5	17	32	47	42	39	32	89	171	1,660	1,020	70	91
6	37	22	49	30	42	34	109	245	630	630	70	95
7	44	27	210	35	51	63	95	755	505	382	64	86
8	35	29	40	39	40	38	88	805	555	245	52	54
9	35	27	43	35	41	40	73	970	530	177	50	54
10	42	34	40	35	40	45	88	1,360	455	128	1,290	70
11	44	34	41	35	40	53	79	1,420	405	109	1,410	40
12	32	36	34	35	34	44	79	1,240	298	86	998	54
13	30	32	38	33	32	54	82	1,190	280	74	543	38
14	39	34	32	35	31	64	73	1,080	805	59	330	54
15	39	24	24	39	31	67	76	915	505	56	238	70
16	40	31	32	44	44	70	79	755	360	47	188	3,860
17	21	36	32	37	43	65	79	605	201	45	154	3,860
18	21	41	26	37	42	67	67	530	174	45	125	2,850
19	17	31	35	44	43	65	67	455	145	36	112	2,150
20	23	29	32	37	41	65	64	555	128	382	103	1,130
21	25	36	32	44	40	63	262	805	104	3,860	108	888
22	8.7	36	37	44	40	68	1,140	860	100	1,540	108	498
23	14	45	33	35	44	65	1,020	630	135	888	86	588
24	10	22	26	26	39	63	630	505	338	683	84	783
25	18	24	30	35	38	64	382	430	480	400	80	633
26	19	40	48	42	40	63	480	360	338	313	151	733
27	18	27	37	42	40	65	530	298	224	223	123	683
28	18	29	30	44	40	86	505	262	214	188	188	588
29	27	21	35	39	-------	93	405	228	153	164	171	418
30	27	63	35	39	-------	100	430	242	130	127	123	313
31	27	-------	35	39	-------	98	-------	238	-------	103	141	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	44	8.7	25.5	0.020	0.02
November	63	21	32.3	.025	.03
December	1,080	24	84.1	.066	.08
January	44	26	37.0	.029	.03
February	51	31	39.6	.031	.03
March	100	32	59.6	.047	.05
April	1,140	64	247	.193	.22
May	1,420	171	606	.473	.55
June	1,660	100	354	.277	.31
July	3,860	36	455	.355	.41
August	1,410	50	242	.189	.22
September	3,860	38	710	.555	.62
The year	3,860	8.7	242	.189	2.57

EMBARRASS RIVER AT STE. MARIE, ILL.

LOCATION.—Chain gage in sec. 30, T. 6 N., R. 14 W., at highway bridge at Ste. Marie, Jasper County. Zero of gage is 447.14 feet above mean sea level.

DRAINAGE AREA.—1,540 square miles.

RECORDS AVAILABLE.—October, 1909, to December, 1912; August, 1914, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,320 second-feet Sept. 19 (gage height, 11.17 feet); minimum, 14 second-feet Feb. 3, 4 (gage height, 0.78 foot).

1909–1912, 1914–1931: Maximum discharge, 39,000 second-feet May 30, 1927 (gage height, 24.3 feet); minimum, 1.0 second-foot Sept. 5–9, Oct. 19, 1914 (gage height, 1.1 feet).

REMARKS.—Records good except those for periods affected by ice, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	18	54	e 30	19	42	163	146	92	77	26	178
2	21	18	108	e 32	16	40	138	130	88	98	25	2,040
3	21	18	48	e 34	14	38	124	115	82	80	29	1,720
4	18	18	42	e 36	14	37	118	101	87	77	37	1,300
5	18	15	60	37	16	37	102	91	94	636	55	804
6	21	15	114	34	19	42	91	170	113	203	42	303
7	187	15	83	30	132	664	83	328	528	203	34	228
8	34	15	63	27	81	1,400	76	378	453	190	64	115
9	37	15	50	24	61	776	74	290	453	190	52	95
10	40	21	47	19	45	553	74	216	428	143	60	83
11	63	24	43	25	35	692	71	240	353	98	42	71
12	53	27	43	28	35	608	68	303	328	80	34	68
13	40	24	40	28	112	453	68	303	266	71	41	61
14	34	24	37	e 28	124	328	65	316	228	62	38	57
15	30	24	34	e 28	76	253	62	316	203	52	32	54
16	30	34	e 34	e 28	68	178	86	278	190	49	28	266
17	34	42	e 34	e 28	114	163	66	266	176	44	26	2,540
18	27	48	e 32	28	141	156	101	228	146	40	25	3,020
19	27	38	30	22	110	120	95	216	124	41	38	3,270
20	27	35	30	19	94	122	72	240	101	42	107	3,220
21	24	35	e 30	e 19	81	122	76	240	91	60	203	2,820
22	24	32	30	e 22	70	106	72	240	83	61	148	2,100
23	21	28	30	28	61	95	128	190	77	51	95	1,410
24	21	28	e 30	28	60	87	107	176	95	51	67	1,020
25	18	25	e 30	28	56	83	98	190	111	38	68	952
26	18	22	30	25	53	80	303	166	128	37	266	752
27	18	19	30	22	50	84	403	143	111	33	146	662
28	18	e 17	30	22	47	328	303	122	124	37	378	578
29	18	e 33	30	22	-------	608	216	113	111	31	664	525
30	18	48	e 30	22	-------	378	166	106	92	31	303	450
31	18	-------	e 30	19	-------	216	-------	98	-------	28	124	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	187	18	32.2	0.021	0.02
November	48	15	25.8	.017	.02
December	114	-------	43.7	.028	.03
January	-------	19	26.5	.017	.02
February	141	14	64.4	.042	.04
March	1,400	37	287	.186	.21
April	403	62	122	.079	.09
May	378	91	208	.135	.16
June	528	82	185	.120	.13
July	636	28	94.6	.061	.07
August	664	25	106	.069	.08
September	3,270	54	1,030	.669	.75
The year	3,270	14	184	.119	1.62

e Estimated because of ice.

EMBARRASS RIVER AT LAWRENCEVILLE, ILL.

LOCATION.—Chain gage in SW. ¼ sec. 5, T. 3 N., R. 11 W., at highway bridge on United States route 50 1 mile east of Lawrenceville, Lawrence County, and 11 miles above mouth of river. Elevation of zero of gage is 399.20 feet above mean sea level.

DRAINAGE AREA.—2,260 square miles.

RECORDS AVAILABLE.—March, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,240 second-feet Sept. 3 (gage height, 15.88 feet); minimum, about 30 second-feet Nov. 29.

1930–31: Maximum discharge, that of Sept. 3, 1931; minimum, that of Nov. 29, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 50	35	55	a 33	36	74	494	322	143	122	62	614
2	a 45	34	55	a 32	36	65	348	260	136	110	53	3,400
3	42	34	52	a 34	36	61	284	219	129	96	51	4,970
4	42	34	57	38	35	57	272	201	129	284	57	4,880
5	39	34	60	42	35	54	260	183	129	143	87	3,120
6	38	33	85	48	35	57	219	183	129	494	71	1,640
7	39	33	120	50	38	300	192	238	210	434	73	856
8	50	33	156	52	41	2,640	174	554	584	228	70	524
9	52	34	116	52	210	3,380	158	674	524	201	60	335
10	48	35	88	48	165	2,580	238	524	464	192	85	238
11	46	36	73	46	129	1,670	219	404	434	174	77	192
12	52	41	65	a 42	92	1,480	192	404	434	150	70	166
13	60	42	60	a 37	88	1,200	166	494	644	129	62	158
14	60	42	52	a 32	106	918	150	524	524	a 115	56	122
15	51	42	48	a 32	300	674	143	494	376	a 105	54	110
16	47	44	a 44	a 36	228	494	136	434	309	90	54	103
17	69	42	a 42	a 40	192	376	158	362	210	84	55	296
18	74	42	a 40	42	228	322	201	322	192	76	55	2,220
19	56	41	a 40	44	300	284	166	296	174	82	75	2,730
20	43	41	a 40	42	264	260	260	362	166	72	110	2,920
21	37	46	a 38	41	210	248	219	434	143	260	376	3,000
22	36	44	a 37	a 38	165	238	210	404	136	434	434	2,660
23	36	42	a 35	a 36	138	219	192	434	122	192	219	2,290
24	37	41	a 31	36	118	201	219	335	116	143	158	1,610
25	36	38	34	38	107	183	238	260	110	158	129	1,170
26	35	a 35	39	38	92	174	734	248	129	116	116	1,040
27	35	a 32	39	39	84	166	887	228	143	90	183	887
28	36	a 30	44	39	79	322	856	201	150	73	376	764
29	35	a 30	41	38	-------	980	674	183	143	64	524	674
30	35	35	a 35	38	-------	1,290	434	174	136	60	887	614
31	35	-------	a 33	38	-------	856	-------	158	-------	55	614	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	74	35	45.0	0.020	0.02
November	46	----------	37.5	.017	.02
December	156	----------	56.6	.025	.03
January	52	----------	40.0	.018	.02
February	300	35	128	.057	.06
March	3,380	54	704	.312	.36
April	887	136	303	.134	.15
May	674	158	339	.150	.17
June	644	110	246	.109	.12
July	494	55	162	.072	.08
August	887	51	173	.077	.09
September	4,970	103	1,480	.655	.73
The year	4,970	----------	308	.136	1.85

a Discharge estimated.

WEST FORK OF WHITE RIVER AT MUNCIE, IND.

LOCATION.—Chain gage in sec. 10, T. 20 N., R. 10 E., at Walnut Street highway bridge at Muncie, Delaware County. Elevation of zero of gage is 925.10 feet above mean sea level.
DRAINAGE AREA.—233 square miles.
RECORDS AVAILABLE.—November, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 1,100 second-feet Apr. 3, 4 (gage height, 4.0 feet); minimum, 1.8 second-feet June 5, 20, July 17 (gage height, 0.58 foot).
REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	51	•22	16	29	189	69	4.5	64	4.0	39
2	-------	47	•21	18	32	196	64	3.0	152	4.0	47
3	-------	31	•20	20	41	1,100	49	2.0	55	4.0	171
4	-------	18	20	22	47	1,100	28	14	21	2.5	103
5	-------	18	22	22	51	580	55	1.8	7.6	4.0	55
6	24	22	22	26	57	320	59	36	7.2	2.5	8.1
7	18	23	20	31	22	272	55	14	11	3.0	4.0
8	18	21	18	18	97	174	51	13	9.0	3.0	21
9	20	17	19	25	115	208	45	11	8.1	3.0	15
10	22	17	19	25	130	152	47	13	5.4	3.0	13
11	26	17	21	23	152	152	43	3.5	7.2	5.4	13
12	26	19	21	25	155	121	43	7.2	8.1	13	10
13	24	19	21	23	224	91	31	5.4	4.0	12	8.1
14	38	19	23	26	288	134	29	11	3.0	7.6	10
15	26	17	23	29	288	134	36	7.2	2.5	5.4	7.2
16	23	13	21	29	272	80	5.4	10	3.0	5.4	9.6
17	25	13	21	32	224	94	6.3	13	1.8	5.4	9.6
18	23	11	19	32	162	69	7.2	10	2.8	5.0	8.6
19	23	15	19	35	127	23	13	10	7.2	10	5.4
20	21	19	17	38	112	47	51	1.8	5.4	183	6.8
21	19	21	17	38	88	47	31	7.2	64	31	7.6
22	14	22	19	38	82	23	31	158	91	15	5.4
23	2.5	20	21	35	77	25	25	75	47	8.1	24
24	6.3	20	21	32	94	33	31	55	25	10	72
25	17	18	17	29	112	82	23	19	14	7.2	67
26	17	20	15	26	152	320	11	9.6	15	112	62
27	19	20	16	26	208	370	19	13	10	224	29
28	19	20	18	24	256	208	36	11	5.0	510	20
29	21	22	20	-------	337	140	8.1	9.6	4.0	388	19
30	47	24	18	-------	240	208	15	19	3.0	152	14
31	-------	22	16	-------	177	-------	15	-------	2.8	103	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November 6–30	47	2.5	21.6	0.093	0.09
December	51	11	21.2	.091	.10
January	23	15	19.6	.084	.10
February	38	16	27.6	.118	.12
March	337	29	145	.622	.72
April	1,100	23	223	.957	1.07
May	69	5.4	33.3	.143	.16
June	158	1.8	18.9	.081	.09
July	152	1.8	21.5	.092	.11
August	510	2.5	59.5	.255	.29
September	171	4.0	29.5	.127	.14

• Estimated.

WEST FORK OF WHITE RIVER NEAR NOBLESVILLE, IND.

LOCATION.—Chain gage in sec. 4, T. 19 N., R. 5 E., at highway bridge 1 mile west of Strawtown and 7 miles northeast of Noblesville, Hamilton County.
DRAINAGE AREA.—800 square miles.
RECORDS AVAILABLE.—July to September, 1922; October, 1927, to September, 1931. May, 1915, to June, 1922, at station 2 miles downstream.
EXTREMES.—Maximum discharge during year, 2,540 second-feet Apr. 4 (gage height, 7.98 feet); minimum, 70 second-feet Dec. 30 (gage height, 4.30 feet). 1915–1922, 1927–1931: Maximum discharge, 20,800 second-feet Mar. 21, 1927 (gage height, 16.05 feet); minimum, that of Dec. 30, 1930.
REMARKS.—Records good. Discharge estimated Dec. 16, 24, 25, 31, Jan. 21, 22.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	120	264	120	120	152	610	520	158	230	84	365
2	90	120	233	135	115	146	580	492	146	230	174	415
3	110	115	365	110	110	140	640	465	143	268	128	1,460
4	100	120	177	110	110	140	2,540	465	138	252	98	1,060
5	100	120	164	115	110	140	1,640	440	146	188	92	640
6	95	120	164	135	110	135	1,220	415	143	152	82	440
7	105	110	184	164	130	146	840	415	138	146	78	300
8	120	110	170	170	177	198	705	390	146	130	74	233
9	164	110	164	146	177	256	580	365	146	125	86	198
10	140	115	158	135	177	256	520	365	130	115	105	164
11	130	120	158	130	158	240	770	344	130	105	120	152
12	125	125	152	125	146	264	640	320	125	90	100	140
13	115	125	146	130	158	415	550	320	125	86	164	130
14	110	125	135	140	212	770	465	256	125	90	120	130
15	110	125	120	135	272	1,060	1,300	233	125	90	100	177
16	110	130	120	170	226	840	415	226	125	82	95	164
17	110	125	120	158	219	640	550	205	130	74	82	140
18	110	125	125	105	212	520	465	212	125	74	86	152
19	105	120	125	125	212	465	390	219	125	74	86	130
20	100	115	120	120	226	440	365	248	120	74	152	125
21	105	115	120	130	219	440	415	344	108	132	640	110
22	105	110	120	135	205	415	415	280	252	840	344	105
23	110	110	120	135	191	365	415	256	390	390	198	158
24	110	110	120	125	184	344	415	233	344	244	140	233
25	115	110	120	120	177	320	415	212	244	194	120	170
26	115	110	115	115	164	300	492	205	202	149	130	320
27	110	105	130	120	158	415	910	184	149	122	300	390
28	115	82	125	115	158	738	910	177	138	108	640	272
29	125	105	120	120	------	1,550	705	170	132	98	1,730	205
30	115	140	70	120	------	1,140	580	158	252	92	1,300	164
31	115	------	95	115	------	805	------	158	------	88	610	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	164	90	112	0.140	0.16
November	140	82	116	.145	.16
December	365	70	149	.186	.21
January	170	105	130	.162	.19
February	272	110	173	.216	.22
March	1,550	135	458	.572	.66
April	2,540	365	715	.894	1.00
May	520	158	300	.375	.43
June	390	108	163	.204	.23
July	840	74	166	.208	.24
August	1,730	74	266	.332	.38
September	1,460	105	295	.369	.41
The year	2,540	70	254	.318	4.29

WEST FORK OF WHITE RIVER NEAR NORA, IND.

LOCATION.—Water stage recorder in sec. 20, T. 17 N., R. 4 E., at highway bridge 2 miles east of Nora, Marion County.

DRAINAGE AREA.—1,180 square miles.

RECORDS AVAILABLE.—April, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,950 second-feet Apr. 4 (gage height, 6.15 feet); minimum discharge, 72 second-feet Aug. 8 (minimum gage height, 1.37 feet July 20).

1930–31: Maximum discharge, 5,640 second-feet Apr. 18, 1930 (gage height, 8.5 feet); minimum, that of 1931.

REMARKS.—Records good. Backwater from dam and intakes of Indianapolis Water Co. 3¾ miles below gage affects stage-discharge relation during most periods of low and medium stage. Daily discharge during periods of backwater determined by slope computed from stages at gage and at dam. Gage-height records furnished and some discharge measurements made by Indianapolis Water Co.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1	1,580	1,030	359	329	181	148	16	891	610	359	242	115	450
2	1,440	969	355	300	132	216	17	2,070	569	395	227	142	373
3	1,320	886	325	294	146	302	18	5,000	564	409	221	143	304
4	1,220	826	336	274	174	228	19	4,600	575	413	215	135	234
5	1,080	762	314	261	174	180	20	2,680	539	563	204	137	165
6	1,010	785	351	533	171	151	21	2,420	547	424	196	142	159
7	954	781	375	453	170	145	22	2,680	522	378	193	138	149
8	916	744	395	460	179	141	23	2,180	506	314	190	125	142
9	855	686	431	308	174	153	24	1,740	486	748	193	133	144
10	776	635	355	267	150	143	25	1,440	472	1,790	187	125	245
11	776	640	344	277	130	139	26	1,290	440	1,060	141	121	454
12	740	635	336	245	120	141	27	1,150	426	731	138	118	380
13	731	673	332	245	124	146	28	1,080	422	513	216	114	235
14	789	632	321	233	129	157	29	1,070	409	433	284	166	178
15	863	614	307	230	132	318	30	1,030	379	390	248	96	161
							31		363		215	142	

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	158	125	356	e 180	144	234	925	619	227	203	103	465
2	148	126	545	e 200	146	212	845	545	233	e 230	100	365
3	153	126	394	200	148	202	1,000	525	218	e 250	127	1,080
4	148	123	274	160	154	199	2,520	499	212	e 220	109	1,160
5	140	127	228	157	147	196	2,500	478	207	e 190	110	831
6	138	126	218	162	145	196	1,650	479	198	e 160	100	606
7	142	132	220	174	165	200	1,240	479	204	148	91	434
8	148	134	222	214	196	279	1,010	479	196	157	83	322
9	170	134	227	195	229	325	876	455	196	138	83	274
10	188	134	222	175	228	355	799	474	185	138	123	236
11	168	140	219	164	225	380	915	440	232	132	141	214
12	151	143	195	168	206	384	954	464	116	124	123	187
13	140	155	185	170	212	521	807	417	163	114	124	141
14	143	151	185	e 175	250	874	701	431	173	114	135	112
15	145	147	186	e 185	301	1,240	1,020	398	157	114	111	234
16	149	151	178	e 185	332	1,120	1,010	340	157	110	105	205
17	158	149	193	161	324	891	753	329	152	110	94	180
18	151	142	146	152	293	744	656	307	159	98	102	147
19	142	139	153	144	282	678	573	294	148	90	121	146
20	143	136	157	148	320	620	544	325	136	83	149	146
21	142	131	e 160	e 150	297	586	521	340	155	98	420	134
22	143	134	e 165	e 155	292	566	568	344	209	685	487	126
23	150	129	e 160	156	268	521	610	336	272	620	274	124
24	146	129	e 155	160	270	494	556	304	421	400	175	294
25	139	129	e 180	144	259	470	529	280	338	280	141	328
26	134	127	e 180	122	253	447	586	274	256	176	142	281
27	136	e 125	176	177	244	408	930	261	214	162	156	514
28	136	e 130	162	142	237	701	1,070	248	166	137	366	435
29	134	133	174	144		1,660	871	242	145	105	1,130	342
30	132	157	e 175	146		1,580	736	233	156	94	1,200	250
31	130		e 165	145		1,160		233		88	748	

e Estimated.

Monthly discharge, in second-feet, of West Fork of White River near Nora, Ind., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off, in inches
1930					
April	5,000	731	1,550	1.31	1.46
May	1,030	363	617	.523	.60
June	1,790	307	472	.400	.45
July	533	138	259	.219	.25
August	181	96	141	.119	.14
September	454	139	216	.183	.20
1930–31					
October	188	130	147	.125	.14
November	157	123	135	.114	.13
December	545	146	211	.179	.21
January	214	122	165	.140	.16
February	332	144	235	.199	.21
March	1,660	196	595	.504	.58
April	2,520	521	942	.798	.89
May	619	233	383	.325	.37
June	421	116	200	.169	.19
July	685	83	186	.158	.18
August	1,200	83	241	.204	.24
September	1,160	112	344	.292	.33
The year	2,520	83	315	.267	3.63

WEST FORK OF WHITE RIVER AT INDIANAPOLIS, IND.

LOCATION.—Prior to July 20, 1931, float gage at Indianapolis sanitation plant in sec. 22, T. 15 N., R. 3 E., at southwest limits of city; after July 20, 1931, staff gage in sec. 14, T. 15 N., R. 3 E., at Morris Street Bridge, in Indianapolis, Marion County. Zero of both gages is at mean sea level.

DRAINAGE AREA.—1,610 square miles.

RECORDS AVAILABLE.—April, 1930, to September, 1931; May, 1904, to July, 1906, at Cleveland, Cincinnati, Chicago & St. Louis Railway bridge three-quarters of a mile above Morris Street.

EXTREMES.—Maximum discharge during year, 3,510 second-feet Apr. 4 (gage height, 664.30 feet); minimum, 67 second-feet Nov. 13, 14 (gage height, 659.08 feet).

1930–31: Maximum discharge, 5,990 second-feet Apr. 18, 1930 (gage height, 666.50 feet); minimum, that of November, 1931.

REMARKS.—Records good. Water supply of City of Indianapolis diverted 15 miles above; sewage returned just above sanitation plant gage. Discharge includes sewage flow. Discharge Nov. 9–15, 1930, affected by impounding and release of water in improved channel above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1	1,890	1,260	355	580	233	269	16	1,470	742	355	269	223	520
2	1,680	1,190	355	520	162	380	17	2,880	612	380	269	203	520
3	1,540	1,120	355	460	150	405	18	5,860	645	405	269	251	355
4	1,400	1,050	355	355	310	332	19	4,760	775	380	290	251	310
5	1,260	980	355	290	173	290	20	3,240	678	490	269	233	290
6	1,260	980	380	332	233	269	21	3,420	645	490	269	233	216
7	1,190	980	380	775	207	226	22	3,330	612	550	269	233	269
8	1,120	980	380	550	213	233	23	2,630	580	520	290	220	226
9	980	840	405	460	210	251	24	2,170	550	742	380	194	269
10	980	775	380	355	203	233	25	1,820	460	2,240	*300	213	310
11	980	808	355	269	233	220	26	1,680	460	1,470	220	203	490
12	910	742	355	269	233	233	27	1,400	432	1,120	223	207	490
13	840	808	432	269	233	226	28	1,400	405	808	355	207	380
14	980	775	355	290	269	490	29	1,400	405	710	380	191	290
15	1,050	775	310	269	233	520	30	1,260	380	678	355	230	290
							31	-------	380	-------	840	910	------

Daily and monthly discharge, in second-feet, of West Fork of White River at Indianapolis, Ind., 1930–31—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	251	230	355	203	226	290	1,610	1,000	292	359	184	289
2	233	220	380	216	251	310	1,130	870	292	383	147	501
3	226	233	490	203	251	290	1,610	838	272	610	e 180	765
4	220	251	405	207	233	290	3,150	708	292	435	211	1,690
5	207	251	405	269	213	290	3,060	675	272	435	180	1,180
6	226	251	380	251	269	290	2,240	675	272	383	140	e 850
7	355	233	310	251	310	580	1,820	610	335	292	134	e 650
8	332	233	380	251	251	490	1,470	632	292	249	125	446
9	269	210	355	332	332	580	1,260	610	272	231	e 140	395
10	269	114	355	310	355	580	1,330	580	335	211	197	325
11	269	99	310	251	355	645	1,330	610	292	185	213	292
12	251	99	290	290	355	678	1,400	550	314	182	217	264
13	233	75	290	251	460	840	1,260	550	272	217	188	e 243
14	251	104	269	251	355	1,260	1,130	520	246	195	162	222
15	233	520	269	233	380	1,750	1,330	490	292	185	158	378
16	251	251	251	216	550	1,750	1,330	490	314	175	e 148	336
17	269	251	230	223	520	1,330	1,200	435	272	164	139	291
18	230	226	233	210	405	1,120	1,060	435	253	165	192	290
19	210	233	251	269	432	1,050	1,000	435	253	170	178	282
20	216	220	251	251	460	910	935	550	221	185	180	e 270
21	226	223	233	210	460	910	1,130	435	228	240	179	257
22	213	213	251	220	405	840	870	490	462	198	556	277
23	233	200	251	251	432	840	935	435	632	1,230	e 413	322
24	233	226	251	233	355	910	870	435	580	697	270	205
25	203	216	213	251	380	710	1,000	462	740	533	183	512
26	216	216	210	269	355	678	1,000	359	550	304	294	362
27	251	179	269	251	332	980	1,260	359	435	354	179	e 500
28	251	203	233	233	332	980	1,540	314	359	249	542	647
29	233	213	251	251	-------	2,310	1,330	314	314	188	866	471
30	230	380	203	251	-------	2,240	1,130	335	272	188	e 1,250	446
31	230	-------	223	226	-------	1,750	-------	253	-------	176	1,080	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
April	5,860	840	1,890	1.17	1.30
May	1,260	380	736	.457	.53
June	2,240	310	562	.349	.39
July	840	220	364	.226	.26
August	910	150	242	.150	.17
September	520	216	327	.203	.23
1930–31					
October	355	203	243	.151	.17
November	520	75	219	.136	.15
December	490	203	292	.181	.21
January	332	203	245	.152	.18
February	550	213	358	.222	.23
March	2,310	290	918	.570	.66
April	3,150	870	1,390	.863	.96
May	1,000	253	531	.330	.38
June	740	221	341	.212	.24
July	1,230	164	315	.196	.23
August	1,250	125	298	.185	.21
September	1,690	205	465	.289	.32
The year	3,150	75	467	.290	3.94

e Estimated.

WEST FORK OF WHITE RIVER AT MARTINSVILLE, IND.

LOCATION.—Chain gage in sec. 32, T. 12 N., R. 1 E., at highway bridge 1 mile west of Martinsville, Morgan County. Zero of gage is 577.72 feet above mean sea level.

DRAINAGE AREA.—2,390 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,610 second-feet Apr. 5 (gage height, 5.50 feet); minimum discharge, 131 second-feet Nov. 15 (minimum gage height, 1.48 feet Aug. 8).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	335	265	421	260	230	374	1,920	1,240	463	575	216	920
2	299	281	456	260	220	335	1,740	1,160	449	610	194	1,160
3	281	293	470	250	230	348	2,100	1,000	463	920	184	920
4	270	281	470	240	240	348	2,460	920	421	2,280	172	1,880
5	250	240	505	230	260	400	3,610	840	645	1,830	198	1,480
6	230	287	540	250	270	470	2,910	840	645	880	202	1,080
7	275	299	470	281	329	575	2,370	840	680	645	176	920
8	400	275	435	260	394	610	1,920	800	610	575	148	720
9	335	270	428	270	368	920	1,740	760	505	505	156	540
10	329	250	442	311	329	800	1,740	720	505	449	505	470
11	270	230	414	348	380	840	1,560	760	470	387	394	414
12	260	180	380	323	400	880	1,650	800	449	380	287	380
13	270	134	368	311	435	1,040	1,560	720	540	348	265	348
14	287	134	354	287	505	1,240	1,480	680	645	380	240	407
15	270	131	342	265	463	1,320	1,560	645	421	361	220	1,830
16	281	449	329	240	449	1,830	1,740	610	435	342	180	880
17	270	305	305	225	575	1,650	1,480	575	407	275	172	680
18	293	281	317	216	575	1,560	1,320	645	380	250	212	575
19	281	255	293	225	505	1,320	1,240	760	329	207	220	505
20	270	265	305	235	540	1,160	1,160	1,160	305	240	265	407
21	281	255	311	255	505	1,080	1,320	720	354	225	323	335
22	270	260	299	225	470	1,080	1,240	680	540	329	449	348
23	260	240	299	235	505	1,000	1,160	680	394	1,320	421	335
24	287	220	311	245	470	1,160	1,160	645	880	1,080	387	449
25	275	255	299	245	456	1,000	1,160	610	2,190	800	275	380
26	287	265	299	235	442	920	1,740	540	1,040	610	505	760
27	281	245	311	260	414	920	1,480	540	880	505	354	456
28	342	202	305	250	400	2,100	1,650	505	720	414	361	442
29	293	184	281	240	-------	2,100	1,650	505	575	317	414	505
30	287	281	293	240	-------	2,550	1,400	505	575	250	880	540
31	275	-------	260	230	-------	2,190	-------	505	-------	216	1,160	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	400	230	287	0.120	0.14
November	449	131	250	.105	.12
December	540	260	365	.153	.18
January	348	216	256	.107	.12
February	575	220	406	.170	.18
March	2,550	335	1,100	.460	.53
April	3,610	1,160	1,710	.715	.80
May	1,240	505	739	.309	.36
June	2,190	305	597	.250	.28
July	2,280	207	597	.250	.29
August	1,160	148	327	.137	.16
September	1,830	335	701	.293	.33
The year	3,610	131	611	.256	3.49

WEST FORK OF WHITE RIVER AT SPENCER, IND.

LOCATION.—Chain gage in sec. 29, T. 10 N., R. 3 W., at highway bridge at Spencer, Owen County.

DRAINAGE AREA.—2,910 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,770 second-feet July 4 (gage height, 8.55 feet); minimum, 225 second-feet Aug. 18, 19 (gage height, 1.70 feet).

1927–1931: Maximum discharge, 41,000 second-feet Jan. 15, 1930 (gage height, 22.3 feet); minimum, that of Aug. 18, 19, 1931.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	372	300	345	345	280	430	2,530	1,720	525	782	345	1,060
2	345	300	345	345	280	400	2,260	1,470	525	820	280	1,300
3	345	300	400	300	280	345	2,170	1,300	492	940	260	1,560
4	300	300	460	300	280	345	3,120	1,220	492	6,770	260	1,140
5	260	300	460	300	280	345	3,930	1,220	1,640	5,810	260	1,470
6	260	300	525	300	280	345	4,040	1,060	1,060	3,120	260	1,380
7	400	300	525	300	345	1,060	3,520	1,060	670	1,220	260	1,140
8	460	300	525	300	400	1,810	2,720	940	595	820	242	820
9	400	300	525	345	400	1,990	2,260	940	525	670	242	745
10	345	300	460	345	400	1,900	2,080	900	460	560	242	595
11	345	300	460	345	372	1,900	1,990	900	460	460	242	460
12	322	322	460	345	372	1,900	1,900	900	670	460	280	345
13	300	280	400	345	400	1,470	1,810	860	782	430	300	300
14	300	300	400	300	460	1,300	1,720	860	860	400	260	300
15	280	300	345	345	460	1,060	1,640	860	670	372	242	3,420
16	280	300	345	345	460	1,720	1,900	820	525	345	242	5,360
17	260	280	345	300	492	1,810	1,810	860	492	300	225	2,260
18	260	280	345	300	560	1,720	1,470	745	460	300	225	1,300
19	300	300	400	322	525	1,720	1,300	745	372	300	225	632
20	260	300	400	322	525	1,380	1,300	980	345	300	225	460
21	280	300	400	345	525	1,300	1,720	1,300	345	300	280	460
22	280	280	372	345	525	1,220	1,560	1,220	430	260	345	430
23	300	280	372	345	525	1,140	1,380	1,060	400	300	372	400
24	300	280	345	300	525	1,060	1,300	820	372	670	372	372
25	300	280	345	300	492	1,060	1,220	782	632	1,300	345	345
26	300	260	322	300	460	1,020	1,720	745	1,220	708	430	560
27	280	300	322	300	460	980	3,220	670	1,060	595	560	708
28	280	300	322	300	460	1,560	2,820	595	860	492	560	460
29	300	300	300	280	-------	3,420	2,080	595	820	460	460	460
30	300	345	300	280	-------	3,120	1,900	560	820	460	430	400
31	300	-------	300	280	-------	2,820	-------	525	-------	400	940	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	460	260	310	0.106	0.12
November	345	260	296	.102	.11
December	525	300	393	.135	.16
January	345	280	317	.109	.13
February	560	280	422	.145	.15
March	3,420	345	1,410	.485	.56
April	4,040	1,220	2,150	.739	.82
May	1,720	525	943	.324	.37
June	1,640	345	653	.224	.25
July	6,770	260	1,000	.344	.40
August	940	225	329	.113	.13
September	5,360	300	1,020	.350	.39
The year	6,770	225	770	.264	3.59

WEST FORK OF WHITE RIVER AT NEWBERRY, IND.

LOCATION.—Water-stage recorder in sec. 25, T. 6 N., R. 6 W., at highway bridge at Newberry, Greene County.

DRAINAGE AREA.—4,670 square miles.

RECORDS AVAILABLE.—September, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,400 second-feet Sept. 16 (gage height, 11.02 feet); minimum, 366 second-feet Oct. 26 (minimum gage height, 1.03 feet Aug. 11, 12).

1927–1931: Maximum discharge, 60,700 second-feet Jan. 15, 1930 (gage height, 23.1 feet); minimum, 345 second-feet Aug. 30, 1930.

Flood of January, 1913, reached a stage of 26.2 feet.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	522	377	528	477	468	740	3,620	2,390	803	1,030	560	1,270
2	474	377	504	565	468	726	3,220	2,110	768	915	528	5,170
3	439	383	624	522	463	698	3,120	1,870	726	1,070	498	4,020
4	422	377	605	480	468	684	4,020	1,690	713	4,180	474	2,820
5	411	394	644	480	463	670	4,220	1,560	691	8,900	463	2,300
6	394	394	713	474	468	691	4,520	1,470	1,180	8,310	463	1,960
7	383	394	677	463	480	1,500	4,320	1,430	1,960	4,220	463	1,600
8	400	394	677	480	516	4,520	3,620	1,430	1,310	2,340	463	1,270
9	411	394	644	486	618	4,420	3,120	1,430	1,150	1,640	434	1,070
10	445	405	605	474	691	3,320	2,920	1,430	1,020	1,310	411	894
11	492	411	592	468	638	2,390	3,020	1,510	887	1,150	388	782
12	457	422	592	516	624	2,160	2,820	1,560	810	1,820	480	719
13	451	422	572	534	698	2,110	2,630	1,600	747	866	657	650
14	439	394	534	540	845	2,160	2,440	1,560	845	796	553	605
15	439	377	522	492	901	2,210	2,300	1,430	1,010	733	510	2,300
16	463	372	510	540	922	2,250	2,210	1,310	1,070	698	474	9,950
17	486	372	486	540	866	2,440	2,060	1,230	859	677	434	10,600
18	434	528	474	516	894	2,390	2,250	1,110	740	638	416	8,870
19	422	504	480	492	929	2,250	2,210	1,070	684	605	597	5,200
20	439	463	468	480	915	2,060	1,960	1,470	638	572	670	2,390
21	416	463	451	474	859	1,920	1,870	1,600	618	677	546	1,510
22	394	451	439	504	831	1,780	2,160	1,740	638	657	534	1,230
23	383	434	457	528	810	1,640	2,160	1,510	740	657	553	1,190
24	372	439	463	486	796	1,600	1,960	1,270	1,960	835	586	1,070
25	377	428	492	468	803	1,560	1,820	1,190	3,620	1,390	650	982
26	372	439	510	468	796	1,600	3,190	1,110	2,440	1,230	644	1,110
27	377	405	510	468	761	1,600	4,020	998	1,920	990	638	1,190
28	383	394	510	463	761	2,820	3,820	922	1,430	859	922	1,150
29	372	434	522	474	-------	4,520	3,020	866	1,190	754	974	966
30	388	468	466	474	-------	4,840	2,630	838	1,030	677	768	887
31	388	------	505	474	-------	4,020	-------	817	-------	605	831	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	522	372	421	0.090	0.10
November	528	372	417	.089	.10
December	713	439	541	.116	.13
January	565	463	494	.106	.12
February	929	463	705	.151	.16
March	4,840	670	2,200	.471	.54
April	4,520	1,820	2,910	.623	.70
May	2,390	817	1,400	.300	.35
June	3,620	618	1,140	.244	.27
July	8,900	572	1,670	.358	.41
August	974	388	567	.121	.14
September	10,600	605	2,520	.540	.60
The year	10,600	372	1,250	.268	3.62

WHITE RIVER AT HAZLETON, IND.

LOCATION.—Chain gage in sec. 24, T. 1 N., R 11 E., at highway bridge at Hazleton, Gibson County. Zero of gage is 383.63 feet above mean sea level.
DRAINAGE AREA.—11,200 square miles.
RECORDS AVAILABLE.—October, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 18,600 second-feet Apr. 8 (gage height, 11.98 feet); minimum, 635 second-feet Oct. 31 (gage height, 1.66 feet).
1928–1931: Maximum discharge, 139,000 second-feet Jan. 17, 1930 (gage height, 30.2 feet); minimum, that of Oct. 31, 1930.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	870	870	[a]950	980	1,540	13,100	10,100	2,160	2,290	2,030	2,290
2	1,140	870	820	[a]960	980	1,540	12,600	8,620	2,030	2,160	1,660	4,500
3	1,140	980	870	[a]970	1,040	1,480	10,500	7,360	2,160	1,900	1,540	10,500
4	1,200	980	925	980	1,090	1,540	11,200	6,320	1,900	1,900	1,480	13,900
5	1,090	870	870	1,040	980	1,260	14,500	5,640	1,900	3,110	1,420	12,400
6	1,040	820	1,200	[a]1,010	1,040	1,310	17,300	4,820	1,780	4,340	1,420	9,890
7	980	1,140	1,200	980	980	1,310	18,600	4,500	1,780	8,260	1,660	8,620
8	1,090	820	1,310	925	1,040	1,420	18,600	4,180	2,160	9,700	1,660	7,360
9	980	870	1,310	925	980	1,900	17,100	3,710	2,290	8,080	1,540	5,980
10	870	870	1,360	1,260	1,040	6,660	15,500	3,860	2,550	6,320	1,540	4,660
11	1,040	925	1,420	1,090	1,040	11,600	11,800	3,560	2,550	4,500	1,360	3,710
12	980	980	1,420	1,140	1,040	10,600	10,800	3,410	2,690	3,560	1,260	2,970
13	980	925	1,360	1,200	1,090	8,800	9,890	3,560	2,690	2,690	1,140	2,420
14	980	870	1,360	1,260	1,200	7,360	8,260	3,560	2,160	2,290	925	2,160
15	980	980	1,360	1,200	1,360	6,150	7,360	3,410	1,780	1,900	1,260	2,030
16	925	925	1,420	1,260	1,540	5,300	6,830	3,260	1,780	1,900	1,200	1,540
17	1,090	980	1,420	1,200	1,780	4,340	6,660	3,110	1,780	1,780	1,200	2,030
18	920	870	1,420	1,200	2,030	4,660	5,980	2,970	2,420	1,780	1,040	10,100
19	980	870	1,140	1,200	2,030	4,500	5,810	2,830	2,420	1,540	980	13,300
20	980	870	870	1,260	2,030	4,500	5,810	2,970	2,030	1,420	1,310	13,300
21	980	870	980	1,200	1,900	4,180	5,470	3,110	1,900	2,970	1,140	10,800
22	980	820	925	1,200	1,900	4,020	5,300	3,260	1,660	6,660	1,140	7,360
23	870	870	980	1,260	1,780	3,860	5,140	3,560	1,660	7,720	1,140	5,140
24	980	870	820	980	1,660	3,560	5,140	3,710	1,660	5,300	1,200	3,860
25	980	770	980	980	1,660	3,260	5,810	3,560	1,540	3,860	1,200	3,260
26	980	820	1,040	980	1,660	2,970	6,830	3,710	1,900	3,860	1,540	3,110
27	1,040	870	925	1,090	1,540	2,970	7,720	3,560	3,410	4,820	1,660	3,110
28	980	925	870	1,090	1,480	3,260	8,620	3,110	3,410	5,300	2,030	3,110
29	870	925	980	1,040	-------	5,810	9,700	2,690	3,260	4,500	2,160	3,110
30	770	870	925	1,090	-------	8,260	10,800	2,550	2,830	4,020	2,420	4,340
31	635	-------	[a]940	1,040	-------	9,340	-------	2,420	-------	2,550	2,550	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,260	635	991	0.088	0.10
November	1,140	770	896	.080	.09
December	1,420	820	1,110	.099	.11
January	1,260	925	1,100	.098	.11
February	2,030	980	1,390	.124	.13
March	11,600	1,260	4,490	.401	.46
April	18,600	5,140	9,960	.889	.99
May	10,100	2,420	4,100	.366	.42
June	3,410	1,540	2,210	.197	.22
July	9,700	1,420	3,970	.354	.41
August	2,550	925	1,480	.132	.15
September	13,900	1,540	6,030	.538	.60
The year	18,600	635	3,140	.280	3.79

[a] Estimated.

FALL CREEK AT MILLERSVILLE, IND.

LOCATION.—Water-stage recorder in sec. 9, T. 16 N., R. 4 E., at highway bridge just south of Millersville, Marion County, and 8.5 miles above mouth.

DRAINAGE AREA.—306 square miles.

RECORDS AVAILABLE.—April, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 1,760 second-feet Apr. 18, 1930 (gage height, 6.52 feet); minimum, 25 second-feet Aug. 17, 1931 (gage height, 1.00 foot).

REMARKS.—Records good. Gage heights furnished and 16 discharge measurements made by Indianapolis Water Co.

Discharge estimated because of ice effect Dec. 17 to Jan. 7, Jan. 12–17, 19–23.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1	345	255	94	67	44	91	16	198	168	75	55	44	59
2	318	236	94	63	43	75	17	820	159	81	51	43	53
3	300	220	88	59	43	55	18	1,610	150	75	51	43	45
4	272	198	84	58	41	51	19	1,240	154	69	50	43	44
5	243	198	81	57	41	45	20	740	154	69	48	*41	42
6	236	198	84	198	41	43	21	800	141	67	45	*39	40
7	225	198	91	209	44	44	22	800	132	64	45	38	40
8	209	182	91	101	44	44	23	590	124	61	45	38	39
9	192	172	84	75	43	44	24	460	119	64	45	38	41
10	182	161	81	66	41	42	25	387	113	178	44	38	48
11	182	159	81	61	40	41	26	332	108	198	44	38	50
12	178	178	81	59	39	40	27	310	108	124	46	39	48
13	172	220	81	60	38	39	28	280	104	94	57	36	43
14	176	188	75	58	39	43	29	267	98	79	55	37	41
15	178	178	69	59	42	51	30	255	94	69	47	37	39
							31	-------	94	------	44	41	------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	39	44	116	43	45	54	190	131	51	48	30	31
2	38	44	178	43	45	53	196	120	48	69	29	34
3	39	45	131	44	45	53	296	113	46	125	28	35
4	39	45	90	46	45	53	505	102	45	60	28	38
5	40	49	75	48	44	51	373	95	45	47	28	37
6	40	45	67	50	44	51	277	95	46	41	27	34
7	42	45	65	51	51	63	225	95	51	38	26	32
8	45	45	62	51	63	108	194	93	68	36	26	30
9	51	45	60	48	69	131	172	93	62	34	26	30
10	51	45	57	47	62	113	178	91	51	34	30	29
11	45	47	57	46	57	114	202	91	47	33	34	28
12	44	49	53	46	54	119	190	90	44	32	30	27
13	43	48	51	46	58	139	165	86	43	32	29	27
14	42	51	51	45	69	200	148	93	44	32	28	26
15	42	51	50	45	82	227	145	85	108	32	27	30
16	43	51	47	45	81	190	157	76	85	30	26	42
17	44	51	46	45	74	157	141	70	62	30	25	38
18	40	51	46	45	73	141	131	67	52	30	28	34
19	42	48	47	45	71	127	116	67	46	30	64	31
20	42	46	48	45	71	119	114	79	43	31	59	30
21	41	44	48	46	69	108	122	94	40	34	58	29
22	42	43	48	47	66	104	141	95	202	265	43	28
23	42	41	46	48	62	97	143	80	137	66	36	30
24	45	40	45	47	62	97	129	71	113	123	32	34
25	45	38	46	46	59	93	124	66	100	76	34	37
26	44	38	47	45	59	88	181	63	71	55	37	36
27	45	38	48	47	56	85	274	60	56	45	34	38
28	45	37	47	45	54	234	231	55	51	39	38	36
29	45	37	46	44	-------	379	186	53	48	36	37	34
30	45	51	44	45	-------	284	154	50	47	34	36	32
31	44	-------	43	45	-------	214	-------	51	-------	32	33	-------

* Estimated.

Monthly discharge, in second-feet, of Fall Creek at Millersville, Ind., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
April	1,610	172	417	1.36	1.52
May	255	94	160	.523	.60
June	198	61	87.5	.286	.32
July	209	44	65.2	.213	.25
August	44	36	40.5	.132	.15
September	91	39	47.3	.155	.17
1930-31					
October	51	38	43.0	.141	.16
November	51	37	45.1	.147	.16
December	178	43	61.5	.201	.23
January	51	43	46.1	.151	.17
February	82	44	60.4	.197	.21
March	379	51	131	.428	.49
April	505	114	193	.631	.70
May	131	50	82.9	.271	.31
June	202	40	65.1	.213	.24
July	265	30	53.2	.174	.20
August	64	25	33.7	.110	.13
September	42	26	32.6	.107	.12
The year	505	25	70.5	.230	3.12

BEAN BLOSSOM CREEK NEAR BLOOMINGTON, IND.

LOCATION.—Chain gage in sec. 8, T. 9 N., R. 1 W., at highway bridge 4 miles north of Bloomington, Monroe County, and half a mile above Griffys Creek.

DRAINAGE AREA.—118 square miles.

RECORDS AVAILABLE.—May to September, 1931.

EXTREMES.—Maximum discharge during period, 1,740 second-feet July 4 (gage height, 16.02 feet); minimum, 0.5 second-foot Aug. 17, 18 (gage height, 0.28 foot).

REMARKS.—Records good. Gage-height record furnished by City of Bloomington.

Daily and monthly discharge, in second-feet, 1931

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	------	12	15	1.4	2.2	16	16	20	4.0	0.5	616
2	------	12	8.4	1.4	21	17	13	13	3.4	.5	70
3	------	8.8	314	1.3	28	18	11	9.4	2.7	.5	23
4	------	7.4	1,680	1.0	14	19	10	7.1	2.4	2.2	15
5	------	149	545	1.0	7.7	20	93	15	1.9	.9	13
6	------	75	93	.9	4.6	21	123	48	3.8	3.3	9.1
7	------	40	48	1.2	3.3	22	58	20	4.2	2.2	6.8
8	21	30	26	.8	2.3	23	48	24	45	2.0	7.7
9	------	26	17	.7	1.9	24	36	14	30	1.4	7.7
10	------	16	13	.8	1.6	25	28	282	12	1.4	9.2
11	17	13	10	1.1	1.3	26	21	65	6.6	1.1	52
12	34	9.8	8.1	1.0	1.1	27	16	28	4.5	.8	36
13	30	8.6	7.0	.8	1.0	28	13	16	3.1	1.6	16
14	22	48	5.7	.7	.8	29	10	15	2.3	1.1	9.8
15	18	45	4.7	.5	775	30	10	12	1.9	1.1	8.1
						31	11	------	1.7	1.1	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
May 11-31	123	10	30.4	0.258	0.20
June	282	7.1	36.3	.308	.34
July	1,680	1.7	94.3	.799	.92
August	3.3	.5	1.17	.010	.01
September	775	.8	58.8	.498	.56

EEL RIVER NEAR CENTERPOINT, IND.

LOCATION.—Chain gage in sec. 33, T. 11 N., R. 6 W., at highway bridge 4½ miles south of Centerpoint, Clay County. Zero of gage is 541.87 feet above mean sea level.
DRAINAGE AREA.—883 square miles.
RECORDS AVAILABLE.—January to September, 1931.
EXTREMES.—Maximum discharge during period, 8,920 second-feet Sept. 16 (gage height, 16.81 feet); minimum, 58 second-feet Aug. 18 (gage height, 0.78 foot).
REMARKS.—Records fair. Discharge estimated June 29, 30, July 29 to Aug. 14.

Daily and monthly discharge, in second-feet, 1931

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	50	69	540	179	74	202		92
2	-------	50	67	505	147	70	150		193
3	-------	50	65	505	124	72	136		575
4	-------	49	64	680	120	70	4,990		400
5	-------	49	62	610	113	70	4,010		182
6	-------	49	64	470	120	820	1,170		122
7	-------	60	173	435	179	505	645	75	84
8	-------	98	1,810	348	179	400	435		67
9	-------	107	995	297	202	249	330		58
10	-------	92	540	418	218	173	249		54
11	-------	78	470	575	281	129	233		50
12	-------	73	505	418	297	114	173		49
13	-------	77	540	365	314	102	157		46
14	-------	218	645	348	249	314	142		44
15	-------	182	575	233	185	150	129	67	6,280
16	-------	122	505	249	142	113	113	63	8,360
17	-------	122	382	233	120	90	105	59	1,250
18	-------	131	314	233	109	75	99	58	680
19	-------	118	314	202	99	69	90	59	418
20	-------	107	297	179	202	63	93	66	348
21	-------	96	249	173	365	76	105	142	265
22	-------	86	202	202	202	157	202	116	218
23	-------	84	185	202	152	3,890	365	113	188
24	-------	84	179	168	129	2,280	452	78	107
25	-------	80	170	147	113	610	297	83	136
26	-------	77	281	540	99	505	157	71	126
27	-------	74	265	680	93	330	120	111	122
28	-------	71	1,530	382	85	199	102	233	94
29	-------	-------	1,730	265	80	200		218	84
30	54	-------	925	202	83	200	85	165	79
31	51	-------	645	-------	80	-------		114	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
February	218	49	90.5	0.102	0.11
March	1,810	62	478	.541	.62
April	680	147	360	.408	.46
May	365	80	163	.185	.21
June	3,890	63	406	.460	.51
July	4,990	85	507	.574	.66
August	233	58	92.5	.105	.12
September	8,360	44	692	.784	.87

MILL CREEK NEAR MANHATTAN, IND.

LOCATION.—Staff gage in sec. 11, T. 12 N., R. 5 W., above dam at Cagle's mill, 5¾ miles south of Manhattan, Putnam County, and three-quarters of a mile above mouth of Deer Creek.
DRAINAGE AREA.—293 square miles.
RECORDS AVAILABLE.—May to September, 1931, fragmentary (discontinued).
EXTREMES.—Maximum discharge during period, 502 second-feet June 5 (gage height, 2.60 feet); minimum, 12 second-feet Aug. 12.
REMARKS.—Records good.

Daily discharge, in second-feet, 1931

Day	May	June	Aug.	Sept.	Day	May	June	Aug.	Sept.
1	-------	22	-------	-------	16	74	-------	-------	-------
2	-------	20	-------	98	17	34	-------	-------	-------
3	46	19	-------	-------	18	30	-------	-------	-------
4	-------	16	-------	-------	19	26	-------	-------	-------
5	-------	502	-------	-------	20	40	17	-------	-------
6	-------	402	-------	-------	21	170	-------	-------	-------
7	61	154	-------	-------	22	74	-------	-------	-------
8	59	174	-------	-------	23	56	-------	-------	-------
9	56	109	-------	-------	24	38	-------	-------	-------
10	88	61	-------	-------	25	32	-------	12	-------
11	119	49	-------	-------	26	32	-------	-------	-------
12	119	38	-------	-------	27	26	-------	-------	-------
13	103	36	-------	-------	28	23	-------	-------	-------
14	88	75	-------	-------	29	20	-------	-------	-------
15	88	-------	-------	-------	30	20	-------	-------	-------
					31	23	-------	-------	-------

EAST FORK OF WHITE RIVER AT SEYMOUR, IND.

LOCATION.—Chain gage prior to July 2, 1931, staff gage thereafter, in sec. 6, T. 6 N., R. 6 E., at highway bridge 1 mile north of Seymour, Jackson County.
DRAINAGE AREA.—2,380 square miles.
RECORDS AVAILABLE.—October, 1927, to September, 1931.
EXTREMES.—Maximum discharge during year, 7,030 second-feet Apr. 4 (gage height, 5.20 feet); minimum, 179 second-feet Dec. 31, Jan. 1 (gage height, 1.96 feet).
1927–1931: Maximum discharge, 28,000 second-feet Jan. 10, 1930 (gage height, 11.6 feet); minimum, that of Dec. 31, 1930, Jan. 1, 1931.
REMARKS.—Records good except those for low water, which are fair to poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	225	205	179	284	358	2,320	1,680	470	245	308	445
2	225	225	215	195	284	358	2,810	1,310	470	215	277	1,890
3	225	225	235	195	297	358	2,560	1,230	450	485	277	1,470
4	225	225	258	258	297	342	7,030	1,230	450	1,660	248	860
5	215	225	284	284	284	342	5,870	1,150	450	2,710	262	815
6	215	215	297	297	297	342	4,450	1,080	470	1,360	277	770
7	215	215	297	297	310	374	3,610	944	450	860	308	590
8	215	225	310	297	326	1,310	2,810	916	430	635	262	505
9	215	225	326	297	326	1,150	2,090	860	390	505	248	390
10	205	225	310	284	342	1,150	1,880	834	374	525	248	355
11	205	225	310	284	358	1,080	1,680	808	374	372	545	355
12	205	225	297	284	358	1,000	1,490	782	358	308	372	355
13	215	225	297	271	358	1,000	1,310	756	326	308	372	355
14	215	235	297	271	358	1,000	1,310	730	358	292	355	339
15	215	235	271	258	374	1,080	1,490	730	374	292	339	355
16	215	235	271	258	450	1,150	1,150	705	358	277	292	1,470
17	215	245	271	245	450	1,150	1,080	680	342	248	277	770
18	225	245	258	245	450	1,080	1,000	655	326	277	234	505
19	225	235	258	245	470	1,000	972	630	310	248	234	525
20	215	235	258	245	470	916	944	605	297	292	234	425
21	215	225	258	258	450	834	972	630	297	490	277	425
22	215	225	245	271	450	808	1,150	605	310	590	277	445
23	215	225	225	271	430	756	1,310	655	310	1,430	262	465
24	215	225	205	271	410	730	1,310	705	342	1,160	292	445
25	215	215	245	284	410	680	1,150	680	630	1,110	262	445
26	215	215	284	284	390	680	1,310	630	582	680	277	2,660
27	225	215	284	271	374	1,150	2,940	559	470	525	292	1,470
28	225	195	284	284	374	1,880	2,810	559	390	445	390	1,110
29	215	187	284	284	-------	3,340	2,320	513	342	408	390	860
30	215	195	195	297	-------	2,940	1,780	513	326	355	425	590
31	225	-------	179	297	-------	2,940	-------	490	-------	339	465	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	225	205	217	0.091	0.10
November	245	187	223	.094	.10
December	326	179	265	.111	.13
January	297	179	266	.112	.13
February	470	284	373	.157	.16
March	3,340	342	1,070	.450	.52
April	7,030	944	2,160	.908	1.01
May	1,680	490	802	.337	.39
June	630	297	394	.166	.19
July	2,710	215	634	.266	.31
August	545	234	309	.130	.15
September	2,660	339	749	.315	.35
The year	7,030	179	622	.261	3.54

EAST FORK OF WHITE RIVER AT SHOALS, IND.

LOCATION.—Chain gage in sec. 30, T. 3 N., R. 3 W., at highway bridge at Shoals. Zero of gage is 442.97 feet above mean sea level.

DRAINAGE AREA.—4,900 square miles.

RECORDS AVAILABLE.—June, 1903, to July, 1906; October, 1908, to September, 1916; October, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,700 second-feet Apr. 6 (gage height, 9.72 feet); minimum, 152 second-feet Nov. 10 (gage height, 1.61 feet).

1903–1906, 1908–1916, 1926–1928: Maximum stage, 42.2 feet Mar. 28, 1913 (discharge not determined); minimum discharge, 128 second-feet on several dates.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	358	326	242	440	353	550	6,700	4,240	830	550	635	830
2	336	270	358	204	353	388	5,290	3,410	680	680	635	4,660
3	331	164	370	195	364	510	5,700	2,810	780	730	590	5,900
4	331	315	364	170	348	510	10,800	2,100	680	1,050	680	5,080
5	336	353	375	280	364	475	13,100	1,940	830	1,860	550	4,870
6	227	326	388	510	375	510	13,700	1,860	550	2,270	550	4,240
7	342	326	370	510	375	1,170	12,600	1,720	780	4,030	730	3,410
8	348	262	475	475	364	4,660	11,300	1,640	1,050	3,210	990	2,270
9	336	326	550	730	420	6,100	10,000	1,570	1,110	1,940	730	1,430
10	326	170	550	730	364	6,500	8,300	1,360	1,640	1,430	730	780
11	315	326	550	730	353	6,100	5,900	1,640	1,500	830	590	1,110
12	336	348	475	635	475	4,870	4,240	1,430	680	780	550	780
13	176	358	510	510	510	3,610	3,410	1,230	730	780	730	780
14	394	370	408	475	680	2,620	2,810	1,230	780	730	550	590
15	382	348	434	475	550	2,440	2,620	1,230	880	730	680	1,050
16	394	336	382	370	1,110	2,020	2,440	1,170	1,640	440	475	5,500
17	315	270	382	353	[a]1,080	1,940	2,440	990	1,300	680	510	5,290
18	331	358	382	550	1,050	1,860	2,620	1,170	1,110	388	510	5,080
19	336	364	382	475	880	1,720	2,270	990	880	590	394	3,820
20	234	326	370	440	880	1,640	2,100	1,050	680	401	730	2,270
21	348	342	364	320	780	1,360	1,940	1,230	680	2,270	830	1,500
22	331	394	270	353	730	1,500	1,940	1,790	680	2,810	730	880
23	320	382	364	320	730	1,110	2,620	1,500	510	2,100	830	1,050
24	320	238	342	358	780	[a]1,130	3,820	1,230	830	3,010	880	1,050
25	315	382	331	475	680	[a]1,150	4,030	1,300	1,050	3,610	590	830
26	250	382	192	408	680	1,170	3,820	1,230	730	4,240	635	1,430
27	173	348	434	414	342	1,050	4,450	1,110	1,050	3,410	475	1,720
28	310	258	353	394	510	3,010	5,900	1,050	880	1,860	990	2,810
29	326	336	364	401	-------	5,700	6,100	990	730	1,300	1,640	3,610
30	310	250	382	353	-------	7,700	5,290	880	830	935	1,300	2,620
31	326	-------	427	348	-------	8,500	-------	427	-------	780	880	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	394	173	317	0.065	0.07
November	394	164	318	.065	.07
December	550	192	392	.080	.09
January	730	170	432	.088	.10
February	1,110	342	589	.120	.12
March	8,500	388	2,700	.551	.64
April	13,700	1,940	5,610	1.14	1.27
May	4,240	427	1,530	.312	.36
June	1,640	510	903	.184	.21
July	4,240	388	1,630	.333	.38
August	1,640	394	720	.147	.17
September	5,900	590	2,570	.524	.58
The year	13,700	164	1,470	.300	4.06

[a] Estimated.

FLATROCK CREEK AT ST. PAUL, IND.

LOCATION.—Chain gage in sec. 10, T. 11 N., R. 8 E., on highway bridge half a mile southwest of St. Paul, Decatur County.
DRAINAGE AREA.—314 square miles.
RECORDS AVAILABLE.—October, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year, 1,160 second-feet Apr. 4 (gage height, 4.0 feet); minimum, 0.5 second-foot Aug. 7, 9 (gage height, 0.68 foot). Flood of 1913 reached a stage of about 22 feet on present gage.
REMARKS.—Records good except those for estimated periods, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.8	19	36	a 32	24	32	315	192	64	21	3.2	44
2	3.4	18	34	a 30	25	32	315	170	53	22	1.9	62
3	2.9	18	60	a 28	24	30	860	148	46	23	1.9	98
4	2.9	19	66	a 28	24	32	1,160	123	42	24	1.3	70
5	2.5	19	44	29	24	30	980	118	48	57	1.0	87
6	2.5	16	49	32	24	32	585	118	39	34	.7	54
7	2.5	16	26	39	25	43	460	129	43	24	.6	42
8	4.3	16	40	45		134	385	111	48	20	1.2	33
9	7.6		42	37	a 50	207	288	109	70	20	.6	27
10	8.4		38	a 36		139	257	111	60	18	40	24
11	7.6		36	35	82	104	223	100	45	16	24	21
12	7.6		36	33	34	121	181	95	39	12	50	19
13	11		36	a 32	44	136	151	109	38	10	91	18
14	9.5		34	a 31	49	266	145	87	40	10	42	19
15	11		34	a 30	58	292	134	78	44	5.5	29	33
16	9.5	a 20	a 32	29	58	236	118	68	38	5.5	20	28
17	9.5		29	22	70	170	118	62	37	3.2	11	19
18	8.4		29	22	55	145	113	66	27	4.1	13	192
19	8.4		30	24	48	131	104	66	25	3.8	18	151
20	7.6		27	28	45	129	95	68	26	4.3	52	57
21	7.6		30	26	45	109	136	104	29	25	45	35
22	9.5		29	a 26	43	100	203	91	19	21	43	29
23	9.5	25	30	25	41	91	188	78	211	49	32	27
24	9.5	25	a 31	26	39	95	154	73	57	40	21	38
25	13	26	a 32	26	35	93	139	68	42	22	16	33
26	20	25	33	28	39	86	535	66	61	24	15	612
27	18	34	33	24	33	80	560	58	40	16	48	200
28	20	29	32	25	35	385	435	55	25	16	170	93
29	20	25	35	24	------		315	54	21	7.6	104	62
30	19	29	35	24	------	a 500	236	62	19	6.8	113	48
31	20	------	a 34	24	------		------	75	------	3.8	62	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20	2.5	9.6	0.031	0.04
November	------	------	21.3	.068	.08
December	66	26	35.9	.114	.13
January	45	22	29.0	.092	.11
February	82	24	41.9	.133	.14
March	------	30	161	.513	.59
April	1,160	95	330	1.05	1.17
May	192	54	93.9	.299	.34
June	211	19	46.5	.148	.17
July	57	3.2	18.4	.059	.07
August	170	.6	34.6	.110	.13
September	612	18	75.8	.241	.27
The year	1,160	.6	74.6	.238	3.24

a Discharge estimated.

LITTLE WABASH RIVER AT WILCOX, ILL.

LOCATION.—Chain gage in SE. ¼ sec. 3, T. 2 N., R. 8 E., at highway bridge at Wilcox, Clay County, a quarter of a mile below mouth of Big Muddy Creek.
DRAINAGE AREA.—1,130 square miles.
RECORDS AVAILABLE.—August, 1914, to September, 1931.
EXTREMES.—Maximum discharge during year, 4,470 second-feet Sept. 4 (gage height, 19.65 feet); minimum, 4.0 second-feet Nov. 4 (gage height, 1.92 feet).
1914–1931: Maximum discharge (estimated), 14,000 second-feet Aug. 22, 1915 (gage inaccessible); minimum, 0.3 second-foot Aug. 3, Sept. 1, 1930.
REMARKS.—Records good except those for Dec. 16, 17, Dec. 28 to Jan. 23, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	5.2	37	37	10	38	248	131	31	15	9.9	348
2	14	6.2	158	22	11	29	158	93	31	13	11	1,860
3	23	5.8	169	27	9.2	25	121	70	26	12	11	4,120
4	12	4.0	75	27	8.7	21	97	59	21	10	11	4,470
5	11	5.5	75	27	10	19	93	48	29	8.5	8.4	4,260
6	11	6.2	169	32	11	19	77	70	27	93	40	3,770
7	12	9.6	644	32	11	348	66	361	59	85	43	2,290
8	31	8.7	388	32	84	2,530	56	532	180	37	26	1,070
9	13	9.6	202	22	147	3,770	48	296	147	23	16	348
10	487	12	120	27	114	3,590	52	296	89	12	16	147
11	309	11	70	27	62	1,890	45	202	62	10	19	104
12	125	12	49	22	40	862	45	169	38	10	45	80
13	70	14	12	27	43	444	43	158	31	7.4	56	54
14	37	15	12	32	374	361	42	180	24	6.8	37	51
15	38	15	11	32	548	296	40	169	19	5.7	31	45
16	32	19	11	32	284	236	38	121	15	5.3	23	40
17	32	53	14	27	169	180	43	93	13	6.2	18	37
18	62	56	17	22	248	158	48	73	12	6.4	12	33
19	57	46	17	18	374	126	62	66	11	9.2	13	29
20	29	34	15	27	272	111	73	62	9.0	7.4	66	70
21	15	29	15	27	202	102	77	70	9.2	1,250	660	54
22	12	7.8	14	27	142	102	106	116	9.2	1,890	580	37
23	9.9	14	15	22	94	93	309	142	9.0	1,510	335	42
24	32	17	16	14	66	81	272	93	8.4	948	180	33
25	9.9	14	17	12	57	73	180	224	7.0	596	89	27
26	7.0	11	15	11	49	66	284	191	73	248	52	27
27	6.7	11	11	11	43	73	430	89	348	102	85	23
28	7.2	12	50	11	41	93	502	62	202	62	430	40
29	6.8	12	32	11	------	272	348	30	77	37	612	45
30	6.8	19	37	12	------	472	202	43	37	20	1,070	35
31	7.2	------	43	11	------	416	------	37	------	15	644	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	487	6.7	50.2	0.044	0.05
November	56	4.0	16.5	.015	.02
December	644	11	81.6	.072	.08
January	37	11	23.2	.021	.02
February	548	8.7	126	.112	.12
March	3,770	19	545	.482	.56
April	502	38	140	.124	.14
May	532	30	140	.124	.14
June	348	7.0	55.1	.049	.05
July	1,890	5.3	228	.202	.23
August	1,070	8.4	169	.150	.17
September	4,470	23	786	.696	.78
The year	4,470	4.0	197	.174	2.36

SKILLET FORK AT WAYNE CITY, ILL.

LOCATION.—Chain gage in SW. ¼ sec. 7, T. 2 S., R. 6 E., at highway bridge 1 mile north of Wayne City, Wayne County. Zero of gage is 408.73 feet above mean sea level.

DRAINAGE AREA.—475 square miles.

RECORDS AVAILABLE.—June, 1928, to September, 1931; August, 1908, to December, 1912, and June, 1914, to September, 1921, at Southern Railway bridge 2 miles downstream.

EXTREMES.—Maximum discharge during year, 5,750 second-feet Sept. 3 (gage height, 21.85 feet); minimum, 0.4 second-foot July 1 (gage height, 3.25 feet).

1908–1912, 1914–1921; 1928–1931: Maximum discharge, 15,800 second-feet Aug. 22, 1915; no flow for 54 days September to December, 1908.

REMARKS.—Records good except those estimated because of ice effect.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.7	3.1	68	a 8.0	12	20	84	64	12	0.4	6.9	345
2	10	2.9	45	a 8.0	10	19	70	48	9.9	.5	4.8	3,640
3	7.3	3.1	a 45	a 8.0	10	17	57	38	8.8	.5	4.3	5,750
4	5.5	2.8	52	8.2	9.2	17	51	28	8.1	9.6	8.4	5,250
5	5.1	2.9	68	9.0	9.2	15	51	22	7.8	13	32	4,830
6	4.3	2.4	527	48	9.2	14	45	92	9.9	9.6	26	3,220
7	3.1	1.9	527	23	9.7	720	38	455	23	15	16	1,500
8	4.7	.9	334	21	10	2,610	31	534	33	8.8	18	558
9	9.5	1.0	157	20	12	2,260	27	389	16	4.8	11	73
10	11	2.6	88	16	12	1,520	57	160	9.9	3.6	11	44
11	16	4.1	64	18	14	606	81	100	7.8	2.0	32	33
12	28	5.1	48	20	14	202	54	81	6.2	1.2	323	21
13	21	6.8	36	24	19	112	41	70	5.3	1.7	121	16
14	15	7.1	30	21	137	92	31	70	5.6	2.9	50	12
15	12	9.0	24	a 17	84	78	24	64	6.2	3.8	29	10
16	11	30	21	a 14	52	64	22	51	6.8	2.8	18	8.0
17	18	72	19	a 13	96	51	19	38	5.9	2.2	13	7.3
18	106	48	17	13	110	48	17	29	4.3	1.5	9.4	6.3
19	48	36	16	12	101	48	16	24	3.8	1.2	12	6.0
20	21	26	15	a 12	96	54	18	81	2.9	1.9	738	4.8
21	14	20	11	a 12	84	51	33	81	2.2	3.3	455	4.3
22	10	18	a 10	11	56	45	88	67	2.9	922	290	3.8
23	11	16	a 9.2	11	42	41	279	67	4.3	1,460	130	4.8
24	9.7	12	a 9.2	10	34	37	191	60	5.3	1,030	69	22
25	7.5	a 8.0	a 9.2	11	30	34	92	57	3.1	312	44	150
26	6.0	a 5.7	11	11	26	29	378	45	2.2	58	130	50
27	5.7	a 4.7	10	12	23	29	546	60	1.7	40	108	40
28	5.1	a 4.7	a 9.2	13	22	84	455	42	1.2	34	909	37
29	4.7	a 5.7	a 8.0	14	-------	116	224	24	1.0	20	1,580	22
30	4.9	12	a 8.0	14	-------	130	108	18	.9	13	786	14
31	4.5	-------	a 6.8	14	-------	116	-------	14	-------	8.7	202	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	106	3.1	14.5	0.031	0.04
November	72	.9	12.5	.026	.03
December	527	----------	74.3	.156	.18
January	48	----------	15.0	.032	.04
February	137	9.2	40.8	.086	.09
March	2,610	14	299	.629	.73
April	546	16	108	.227	.25
May	534	14	95.9	.202	.23
June	33	.9	7.27	.015	.02
July	1,460	.4	129	.272	.31
August	1,580	4.3	200	.421	.49
September	5,750	3.8	856	1.80	2.01
The year	5,750	.4	154	.324	4.42

a Estimated.

SALINE RIVER BASIN

MIDDLE FORK OF SALINE RIVER NEAR HARRISBURG, ILL.

LOCATION.—Chain gage in SW. ¼ sec. 13, T. 9 S., R. 6 E., at highway bridge 2 miles east of Harrisburg, Saline County. Zero of gage is 338.51 feet above mean sea level.

DRAINAGE AREA.—198 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,440 second-feet Mar. 8 (gage height, 17.68 feet); minimum, 0.2 second-foot Sept. 21, 22, 26, 27.

1922–1931: Maximum discharge, 4,050 second-feet June 21, 1928 (gage height, 21.51 feet); minimum, 0.2 second-foot Sept. 21, 22, 26, 27, 1931.

REMARKS.—Records fair except those for estimated periods and periods of rapidly changing stage, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.3	8.6	a 0.3	3.2	3.9	3.9	18	20	1.6	1.6	5.2
2	.4	.3	6.1	a.3	3.2	3.1	2.6	16	13	2.3	1.5	615
3	.4	.3	3.2	.3	3.5	2.6	7.6	13	8.0	35	1.3	1,490
4	.4	.5	1.0	5.6	3.9	2.0	486	9.5	5.2	690	4.6	1,610
5	.4	1.0	.9	16	8.6	1.8	120	7.4	3.1	137	4.7	630
6	.3	2.6	28	3.2	16	12	26	35	1.2	18	26	80
7	.4	3.2	24	1.0	25	1,070	15	80	304	8.0	16	12
8	.4	6.8	18	12	24	2,360	9.5	19	75	3.8	5.9	4.3
9	.7	8.0	16	5.9	19	1,920	5.8	14	22	2.4	5.2	2.2
10	.9	8.3	13	4.2	18	1,010	362	9.5	10	1.6	17	1.2
11	.4	9.0	8.6	4.7	8.6	412	286	7.5	7.4	1.2	19	a 1.0
12	.4	35	1.4	6.1	7.7	75	47	16	1.5	1.2	16	a 1.1
13	.7	41	3.0	4.2	48	16	39	16	1.3	1.3	15	1.3
14	.9	64	1.0	3.2	95	12	37	13	1.2	1.8	4.4	.7
15	1.2	80	.5		8.6	11	30	8.8	1.8	3.1	1.2	.6
16	2.3	72	.3		4.4	8.3	16	4.8	1.6	1.9	.8	.6
17	2.1	48			4.1	4.3	11	3.6	1.2	1.7	1.4	.5
18	1.9	28			3.8	3.4	11	3.5	.9	1.3	125	.3
19	1.5	8.8	a.3	a 1.0	3.4	5.6	11	4.0	.8	1.2	6.5	.3
20	1.2	7.0			3.1	3.8	10	705	.7	2.1	9.5	.3
21	.9	3.2			2.4	3.4	184	205	.8	2.4	8.5	.2
22	3.0	3.0			2.3	3.1	228	47	1.2	1.6	4.6	.2
23	3.7	2.1			2.3	2.8	39	23	2.8	1.2	2.5	.4
24	4.2		a.4	2.1	2.2	2.7	21	16	464	1.2	1.0	.6
25	4.7			3.5	2.1	2.9	20	163	205	1.7	.7	.8
26	3.7	a 3.0	3.9	3.5	2.0	3.4	615	198	12	1.7	2.8	.2
27	3.0		3.0	3.2	1.8	3.7	244	37	4.8	1.6	3.5	.2
28	1.5		1.0	3.2	2.1	16	90	16	3.2	1.4	22	.3
29	1.0		.3	3.2	-------	18	51	16	2.0	2.2	35	.4
30	.7	22	a.3	3.0	-------	19	22	67	1.7	2.4	4.6	.7
31	.4	-------	a.3	2.8	-------	5.9	-------	55	-------	1.7	3.0	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4.7	0.3	1.42	0.0072	0.008
November	80	.3	15.7	.079	.09
December	28	----------	4.69	.024	.03
January	16	----------	3.24	.016	.02
February	95	1.8	11.7	.059	.06
March	2,360	1.8	226	1.14	1.31
April	615	2.6	102	.515	.57
May	705	3.5	59.6	.301	.35
June	464	.7	39.2	.198	.22
July	690	1.2	30.2	.153	.18
August	125	.7	12.0	.061	.07
September	1,610	.2	149	.753	.84
The year	2,360	.2	54.7	.276	3.75

a Estimated.

TRADEWATER RIVER BASIN

TRADEWATER RIVER NEAR DALTON, KY.

LOCATION.—Chain gage at Wilson Highway bridge 3 miles southwest of Dalton, Hopkins County. Zero of gage is 351.78 feet above mean sea level.

DRAINAGE AREA.—280 square miles.

RECORDS AVAILABLE.—June, 1928, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,470 second-feet Apr. 28 (gage height, 14.80 feet); minimum, 0.3 second-foot Oct. 4–6 (gage height, 0.97 foot).

1928–1931: Maximum discharge, 4,150 second-feet Jan. 10, 1930 (gage height, 20.52 feet); minimum, 0.2 second-foot Oct. 14, 1928 (gage height, 0.78 foot). Flood of January, 1913, reached a stage of approximately 22.1 feet.

REMARKS.—Records good except those for lowest stages, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.6	0.8	1.2	5.0	40	340	642	10	10	5.8	18
2	.5	.6	.8	1.2	4.7	61	543	280	9.0	8.8	5.4	24
3	.4	.6	.8	1.3	4.4	122	620	192	7.7	8.1	5.4	97
4	.4	.6	.9	1.5	4.0	122	532	144	6.9	7.2	4.9	116
5	.4	.6	1.1	1.6	3.6	94	455	109	7.9	62	4.8	91
6	.3	.6	1.5	1.6	3.5	76	360	90	102	208	5.4	42
7	.5	.6	1.3	1.6	3.3	521	253	84	290	85	6.8	22
8	.5	.6	1.2	1.9	6.8	1,120	184	78	554	40	14	14
9	.5	.6	1.2	2.1	290	1,240	144	72	226	28	52	11
10	.5	.6	1.2	2.2	763	1,240	160	64	91	36	32	9.3
11	.5	.7	1.2	2.4	719	1,220	466	57	52	24	16	8.1
12	.5	.7	1.3	2.7	400	1,020	631	50	36	14	12	7.4
13	.5	.7	1.3	2.5	226	576	455	50	30	11	11	6.8
14	.4	.7	1.3	2.7	609	244	262	47	123	9.5	8.6	6.0
15	.5	.7	1.4	2.7	807	144	176	47	65	8.1	7.4	5.1
16	.4	.6	1.4	2.9	675	115	137	42	36	6.6	6.8	5.1
17	.6	.6	1.6	3.4	340	88	108	35	22	5.8	6.8	4.6
18	.6	.6	1.5	3.8	226	76	88	29	15	5.4	11	4.4
19	.8	.5	1.4	4.0	253	67	73	24	12	5.2	65	4.2
20	.7	.5	1.3	4.0	208	61	64	109	10	5.8	22	3.7
21	.7	.5	1.2	5.9	144	56	144	152	8.6	7.9	12	2.8
22	.7	.5	1.2	18	108	53	310	90	97	168	13	2.5
23	.7	.5	1.1	24	82	48	433	60	130	130	12	2.8
24	.8	.4	1.1	20	70	48	320	47	208	80	12	2.8
25	.7	.4	1.1	16	58	43	208	40	116	40	11	2.4
26	.7	.4	1.8	13	50	40	1,050	33	70	22	10	2.5
27	.7	.4	1.4	11	43	43	1,300	29	40	13	10	2.0
28	.8	.4	1.3	8.9	38	350	1,470	25	24	9.8	17	1.7
29	.7	.4	1.1	7.5	-------	280	1,410	21	17	7.9	40	1.4
30	.7	.7	1.2	6.6	-------	796	1,040	15	14	7.0	26	1.2
31	.6	-------	1.1	5.9	-------	510	-------	12	-------	6.4	16	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.8	0.3	0.57	0.0020	0.002
November	.7	.4	.56	.0020	.002
December	1.8	.8	1.23	.0044	.005
January	24	1.2	5.94	.021	.02
February	807	3.3	219	.782	.81
March	1,240	40	339	1.21	1.40
April	1,470	64	458	1.64	1.83
May	642	12	89.3	.319	.37
June	554	6.9	81.0	.289	.32
July	208	5.2	34.9	.125	.14
August	65	4.8	15.6	.056	.06
September	116	1.2	17.4	.062	.07
The year	1,470	.3	104	.371	5.03

CUMBERLAND RIVER BASIN

CUMBERLAND RIVER AT PINEVILLE, KY.

LOCATION.—Staff gage 300 feet upstream from highway bridge at Pineville, Bell County, and 300 feet below mouth of Clear Creek.

DRAINAGE AREA.—692 square miles.

RECORDS AVAILABLE.—October, 1929, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 23,400 second-feet Apr. 22 (gage height, 17.76 feet); minimum, 7.3 second-feet Oct. 7 (gage height, 0.60 foot). 1929–1931: Maximum discharge, that of Apr. 22, 1931; minimum, that of Oct. 7, 1930.

REMARKS.—Records good below 7,000 second-feet and fair above. Discharge estimated July 12.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	14	48	276	171	520	2,230	1,190	775	71	160	330
2	8.2	13	52	262	165	580	2,450	1,110	670	69	130	285
3	9.6	14	55	174	146	610	2,340	915	520	58	276	355
4	9.2	16	57	174	138	670	2,570	775	430	126	216	430
5	8.2	16	74	276	130	640	3,190	640	355	232	355	490
6	8.2	16	520	2,340	123	580	2,570	610	330	162	520	330
7	7.3	14	880	2,010	116	520	2,450	610	330	308	520	272
8	10	14	610	1,270	116	640	2,120	1,270	308	240	460	200
9	13	14	380	950	232	740	1,810	1,190	276	232	330	162
10	21	13	280	740	1,440	670	1,530	1,530	249	184	200	133
11	16	14	216	610	1,350	640	3,840	1,530	208	162	160	114
12	13	19	184	580	990	640	3,970	1,440	174	128	228	98
13	12	23	154	810	810	610	2,570	1,530	184	103	490	86
14	12	30	135	775	2,810	610	1,810	1,710	224	103	330	72
15	10	28	121	610	3,060	640	1,440	1,440	200	121	212	61
16	10	36	112	405	1,910	670	1,190	1,190	670	143	162	58
17	10	184	109	380	1,530	670	950	990	580	107	126	54
18	10	705	105	430	2,230	640	1,030	810	405	94	98	50
19	10	355	103	405	2,810	610	1,110	915	272	90	82	46
20	11	184	109	405	2,120	550	950	950	194	240	330	45
21	11	121	114	460	1,530	460	775	2,810	146	580	2,930	43
22	11	98	112	460	1,190	580	16,300	1,810	146	915	2,120	41
23	12	82	109	405	950	775	11,500	1,710	121	1,350	2,930	43
24	16	68	101	355	775	950	4,100	1,440	121	2,010	1,350	41
25	16	61	68	330	705	1,440	2,570	1,190	109	990	740	36
26	17	55	109	285	670	1,530	2,570	1,710	109	670	775	45
27	15	50	705	254	550	1,350	3,190	2,010	88	405	990	50
28	14	45	1,110	232	490	4,360	2,690	1,350	80	285	845	58
29	14	43	705	220	-------	9,420	2,010	990	68	220	775	58
30	14	43	490	197	-------	3,970	1,440	775	64	174	580	52
31	15	-------	330	184	-------	2,340	-------	550	-------	160	460	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	21	7.3	12.0	0.017	0.02
November	705	13	79.6	.115	.13
December	1,110	48	266	.384	.44
January	2,340	174	557	.805	.93
February	3,060	116	1,040	1.50	1.56
March	9,420	460	1,280	1.85	2.13
April	16,300	775	2,980	4.31	4.81
May	2,810	550	1,250	1.81	2.09
June	775	64	280	.405	.45
July	2,010	58	346	.500	.58
August	2,930	82	641	.926	1.07
September	490	36	138	.199	.22
The year	16,300	7.3	735	1.06	14.43

CUMBERLAND RIVER AT BARBOURVILLE, KY.

LOCATION.—Staff gage at highway bridge at Barbourville, Knox County, a quarter of a mile above mouth of Richland Creek. Zero of gage is 944.23 feet above mean sea level.

DRAINAGE AREA.—982 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 23,100 second-feet Apr. 23 (gage height, 28.0 feet); minimum, 0.2 second-foot Oct. 5 (gage height, −0.25 foot).

1922–1931: Maximum discharge, about 40,100 second-feet Dec. 22, 1926 (gage height, 45.9 feet); minimum, that of Oct. 5, 1930.

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	23	44	300	205	565	2,890	1,510	785	68	186	445
2	8.3	23	49	294	195	625	3,310	1,330	752	73	177	391
3	6.9	22	49	235	190	595	3,310	1,330	595	73	245	445
4	2.8	23	54	215	168	688	3,310	1,080	505	88	267	475
5	.5	23	64	195	159	655	3,310	820	415	355	355	535
6	6.1	23	195	2,120	159	655	3,310	720	367	333	445	445
7	6.5	25	785	2,750	142	565	2,750	720	333	190	535	344
8	6.9	27	720	1,600	126	752	2,490	1,080	344	272	595	262
9	9.4	27	445	1,330	267	1,080	2,120	1,330	344	240	535	205
10	12	20	322	925	1,160	962	1,700	1,800	344	215	355	172
11	24	21	267	720	1,600	820	4,620	1,900	300	186	235	154
12	18	25	200	655	1,160	785	5,460	1,800	225	100	205	150
13	16	28	172	820	925	720	3,800	1,800	215	122	505	94
14	15	38	168	890	2,490	688	2,360	2,120	235	112	415	94
15	14	42	142	752	4,770	720	1,700	1,700	272	97	300	73
16	12	62	119	535	2,490	720	1,420	1,420	535	134	215	68
17	12	64	119	475	1,900	720	1,160	1,240	625	130	159	64
18	12	475	109	445	2,620	688	1,080	925	505	112	122	54
19	12	409	112	445	3,440	688	625	785	350	109	100	45
20	11	278	119	445	2,620	625	785	820	245	195	475	52
21	10	159	126	445	1,800	535	925	2,620	205	752	2,010	52
22	10	109	142	475	1,420	565	10,900	2,010	168	1,800	2,890	50
23	14	78	146	445	1,080	595	22,000	1,510	150	1,160	3,030	44
24	19	78	119	409	925	925	12,300	1,600	134	2,360	1,600	45
25	20	56	109	408	820	1,330	4,470	1,800	150	1,330	1,000	40
26	22	56	115	409	752	1,700	3,900	1,420	126	655	855	47
27	23	56	655	338	655	1,420	4,220	1,800	126	595	1,000	56
28	27	52	1,160	322	415	4,940	3,900	1,700	106	415	1,000	60
29	26	45	855	278	-------	13,800	2,620	1,160	88	289	855	64
30	23	44	595	240	-------	8,290	1,900	890	71	225	752	60
31	21	-------	361	215	-------	4,470	-------	720	-------	190	565	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	27	0.5	13.9	0.014	0.02
November	475	20	80.4	.082	.09
December	1,160	44	279	.284	.33
January	2,750	195	649	.661	.76
February	4,770	126	1,240	1.26	1.31
March	13,800	535	1,710	1.74	2.01
April	22,000	625	3,950	4.02	4.48
May	2,620	720	1,400	1.43	1.65
June	785	71	320	.326	.36
July	2,360	68	419	.427	.49
August	3,030	100	709	.722	.83
September	535	40	170	.173	.19
The year	22,000	.5	907	.924	12.52

CUMBERLAND RIVER AT CUMBERLAND FALLS, KY.

LOCATION.—Staff gage 400 feet above falls at Cumberland Falls post office, Whitley County, and 13 miles east of Cumberland Falls railroad station. Zero of gage is 825.49 feet above mean sea level.

DRAINAGE AREA.—2,010 square miles.

RECORDS AVAILABLE.—August, 1907, to December, 1911; April, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 26,800 second-feet Apr. 23 (gage height, 7.80 feet); minimum, 18 second-feet several days in October and November (gage height, 1.06 feet).

1907–1911, 1915–1931: Maximum discharge, about 59,600 second-feet Jan. 28, 1918 (gage height, 12.5 feet); minimum, 12 second-feet Sept. 10–12, 1925 (gage height, 1.02 feet).

REMARKS.—Records fair. Low-water flow may be slightly regulated by operation of power plant at Williamsburg, 25 miles upstream. Discharge estimated Apr. 10–14.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	18	104	905	423	1,360	6,100	3,300	1,250	205	320	875
2	53	18	104	686	390	1,360	5,410	2,680	1,250	187	273	700
3	43	18	104	565	390	1,460	5,750	2,330	1,160	179	239	815
4	43	22	104	513	380	1,460	5,410	2,000	988	205	742	728
5	43	22	122	539	340	1,460	4,760	1,780	830	205	742	686
6	31	22	205	1,360	310	1,460	4,760	1,460	700	222	770	672
7	20	22	2,110	3,850	290	1,360	4,450	1,780	578	340	1,160	513
8	48	22	1,460	3,570	290	1,780	4,150	2,560	500	489	1,890	401
9	35	22	1,250	2,680	434	2,220	3,570	2,920	489	390	1,070	350
10	35	22	937	2,220	1,270	2,440	3,250	3,050	478	370	971	282
11	35	28	742	1,780	2,220	2,110	7,000	3,050	423	350	815	230
12	35	39	526	1,560	2,560	1,890	8,600	3,050	390	290	1,200	195
13	35	43	445	1,670	2,000	1,670	7,200	2,800	390	222	1,090	171
14	35	43	401	1,890	2,920	1,560	5,100	2,800	390	248	800	157
15	35	48	360	1,890	5,410	1,460	3,570	2,800	434	330	728	143
16	35	53	320	1,560	5,750	1,360	3,050	2,330	604	256	672	122
17	31	63	290	1,160	4,150	1,270	2,330	2,110	565	256	526	104
18	28	73	273	1,070	4,760	1,270	2,110	1,890	770	380	401	93
19	22	273	290	1,040	5,410	1,220	2,000	1,560	742	489	330	83
20	22	658	273	1,200	4,760	1,140	1,890	1,360	591	380	875	83
21	18	552	290	1,220	3,850	1,070	1,780	2,330	456	2,110	2,220	83
22	18	412	300	1,060	3,050	1,090	10,400	3,180	401	2,920	3,300	73
23	20	320	290	988	2,330	1,270	26,200	2,920	350	3,050	3,570	63
24	22	256	282	937	2,000	1,670	23,600	2,680	310	2,000	3,440	53
25	22	205	320	830	1,780	2,000	17,400	2,330	330	2,560	2,680	63
26	22	164	380	742	1,670	2,220	10,400	2,330	273	2,000	1,670	68
27	22	143	700	644	1,670	2,680	7,260	2,800	230	1,360	1,360	53
28	22	129	1,670	617	1,460	11,900	6,860	2,920	214	920	1,360	48
29	22	122	2,000	565	-------	16,800	5,410	2,330	205	565	1,460	53
30	22	110	1,670	513	-------	16,200	3,570	1,780	205	478	1,160	48
31	18	-------	1,220	467	-------	10,900	-------	1,460	-------	370	1,140	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	63	18	30.8	0.015	0.02
November	658	18	131	.065	.07
December	2,110	104	630	.313	.36
January	3,850	467	1,300	.647	.75
February	5,750	290	2,220	1.10	1.14
March	16,800	1,070	3,200	1.59	1.83
April	26,200	1,780	6,780	3.37	3.76
May	3,300	1,360	2,410	1.20	1.38
June	1,250	205	550	.274	.31
July	3,050	179	785	.391	.45
August	3,570	239	1,260	.627	.72
September	875	48	267	.133	.15
The year	26,200	18	1,620	.806	10.94

CUMBERLAND RIVER AT BURNSIDE, KY.

LOCATION.—Staff gage on South Fork of Cumberland River 700 feet above mouth at Burnside, Pulaski County, in pool formed by Dam 21, 28 miles downstream. Zero of gage is 585.60 feet above mean sea level.

DRAINAGE AREA.—4,890 square miles, including area of South Fork.

RECORDS AVAILABLE.—October, 1914, to September, 1931.

EXTREMES.—Maximum discharge during year, 50,300 second-feet Mar. 29 (gage height, 28.6 feet); minimum discharge, 170 second-feet several days in October, November, and September; minimum gage height, 1.7 feet Sept 18, due to lowering of pool at Dam 21.

1914–1931: Maximum discharge, about 164,000 second-feet Jan. 29, 1918 (gage height, 69.5 feet); minimum, 65 second-feet Sept. 6–20, 1925 (gage height, 1.85 feet). Lower stages have been recorded but were due to lowering of pool at Dam 21.

Flood of Jan. 29, 1918, reached highest stage since 1884.

REMARKS.—Records fair. Discharge estimated Sept. 18, 19. Tables of discharge include flow in main river and South Fork. Stage at low water affected by manipulations at Dam 21.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	170	310	2,300	990	3,880	18,400	8,800	2,560	390	670	1,320
2	240	170	310	1,680	880	4,440	15,800	7,300	3,740	390	480	1,100
3	240	170	310	1,320	880	4,580	15,900	6,120	2,170	390	480	1,210
4	240	170	310	1,210	770	4,860	15,800	5,280	1,920	480	670	1,210
5	240	170	310	1,100	770	4,580	18,000	4,580	1,560	480	1,210	1,320
6	240	170	310	1,320	670	3,880	14,100	3,880	1,440	570	1,800	1,210
7	240	170	2,950	5,840	570	4,440	11,500	3,740	1,210	480	3,880	1,100
8	240	170	5,420	8,200	570	5,700	9,560	3,740	1,100	390	3,080	990
9	240	170	3,080	6,850	770	8,200	8,050	4,020	990	670	2,430	880
10	240	170	2,560	5,420	2,040	8,800	6,850	11,700	990	990	2,040	770
11	240	170	1,920	4,020	3,740	7,450	9,100	12,400	990	880	1,800	570
12	240	170	1,320	3,600	5,420	6,400	17,100	9,560	880	670	1,560	390
13	240	170	1,210	3,470	5,000	5,000	16,500	8,650	770	480	1,800	310
14	240	170	1,210	4,300	5,140	7,750	13,100	8,350	770	480	2,820	240
15	240	240	1,210	4,440	14,000	4,300	9,720	6,850	770	480	2,690	240
16	240	240	1,100	3,880	13,800	3,740	8,200	6,120	770	480	2,040	240
17	240	240	1,100	3,080	11,300	3,600	6,700	5,140	670	480	1,440	240
18	240	310	880	2,690	13,200	3,470	5,420	4,440	880	570	480	210
19	240	1,320	670	2,690	15,000	3,210	4,860	4,020	880	670	880	190
20	240	990	670	2,820	13,400	3,080	4,300	3,470	880	880	770	170
21	240	670	670	3,470	11,000	2,820	4,020	3,080	880	990	4,020	240
22	240	670	570	3,340	8,500	2,560	6,400	2,690	880	9,880	3,880	240
23	240	670	570	2,690	6,400	2,300	47,500	4,160	880	8,200	5,280	240
24	240	670	570	2,560	5,140	3,080	40,900	4,580	880	5,980	4,720	240
25	240	570	570	2,170	4,440	3,740	29,200	3,880	770	4,440	4,160	240
26	170	570	570	1,920	4,020	3,880	21,300	3,340	770	3,880	3,600	240
27	170	310	880	1,800	4,020	5,140	18,600	3,470	570	3,340	2,560	240
28	170	390	3,080	1,560	3,880	19,900	19,200	3,740	480	2,170	1,920	240
29	170	310	3,880	1,320	------	50,300	14,900	3,880	480	1,440	1,680	240
30	170	310	3,600	1,210	------	38,600	11,300	3,080	480	1,210	1,560	240
31	170	------	3,080	1,100	------	25,600	------	2,820	------	990	1,560	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	240	170	226	0.046	0.05
November	1,320	170	362	.074	.09
December	5,420	310	1,460	.299	.34
January	8,200	1,100	3,010	.616	.71
February	15,000	570	5,580	1.14	1.19
March	50,300	2,300	8,360	1.71	1.97
April	47,500	4,020	14,700	3.01	3.36
May	12,400	2,690	5,380	1.10	1.27
June	3,740	480	1,100	.225	.25
July	9,880	390	1,740	.356	.41
August	5,280	480	2,190	.448	.52
September	1,320	170	544	.111	.12
The year	50,300	170	3,700	.757	10.28

CUMBERLAND RIVER AT CELINA, TENN.

LOCATION.—Water-stage recorder at highway bridge at Celina, Clay County, 600 feet below mouth of Obey River. Zero of gage is 489.46 feet above mean sea level. Prior to Oct. 1, 1930, a staff gage at boat landing 400 feet downstream was used.

DRAINAGE AREA.—7,320 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 58,600 second-feet Mar. 31 (gage height, 28.7 feet); minimum, 215 second-feet Nov. 11 (gage height, 0.69 foot).

1922–1931: Maximum discharge, about 153,000 second-feet (revised) Dec. 29, 1926 (gage height, 57.2 feet); minimum, 92 second-feet Sept. 2, 11–14, and 26, 1925 (gage height, 0.2 foot).

REMARKS.—Records good. Discharge interpolated Nov. 19.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	308	262	581	4,180	1,930	11,900	43,400	15,900	5,350	680	1,510	1,990
2	308	262	554	3,530	1,810	11,300	30,800	12,800	4,180	723	1,390	1,930
3	308	256	536	2,880	1,690	9,400	24,300	10,700	3,530	800	1,210	2,620
4	301	256	509	2,360	1,570	8,650	22,800	9,100	3,200	690	1,080	2,490
5	301	262	518	1,990	1,490	7,900	23,200	8,050	2,940	660	1,150	2,050
6	301	262	866	1,990	1,390	7,310	22,800	7,170	2,680	855	1,270	1,750
7	308	262	1,280	2,110	1,310	9,250	19,600	6,890	2,360	1,040	1,990	1,690
8	294	262	1,490	3,530	1,230	10,800	16,100	6,750	2,050	1,050	4,050	1,570
9	329	256	4,310	9,100	2,620	10,700	13,300	6,750	1,810	1,010	4,310	1,490
10	406	232	5,350	9,250	5,350	11,600	11,600	10,800	1,630	833	3,530	1,350
11	392	220	4,050	7,600	4,570	12,300	13,500	15,000	1,430	822	3,140	1,170
12	385	322	3,200	6,330	5,090	11,000	14,300	16,600	1,320	934	3,270	1,020
13	336	492	2,560	5,910	5,490	9,400	18,200	15,400	1,220	899	3,400	877
14	308	554	2,110	5,490	8,800	8,200	20,000	13,600	1,150	822	2,940	745
15	308	492	1,630	5,490	10,500	7,310	17,200	11,900	1,070	723	2,880	660
16	308	476	1,510	5,770	14,000	6,470	13,600	10,300	1,010	712	3,400	590
17	308	492	1,350	5,490	19,600	6,050	11,000	8,950	970	734	2,940	518
18	301	500	1,270	4,700	21,200	5,490	9,250	7,900	1,010	712	2,230	476
19	294	492	1,150	4,960	20,400	5,090	7,900	6,750	1,090	745	1,990	444
20	287	484	1,090	4,830	20,400	4,700	6,750	5,910	1,150	1,080	2,880	610
21	280	581	1,040	4,440	18,200	4,440	6,330	5,350	1,160	4,310	3,790	428
22	274	1,510	1,010	4,700	15,000	4,310	13,000	4,830	1,310	4,700	2,230	371
23	262	1,440	946	4,830	11,900	4,180	20,600	4,570	1,510	8,200	2,750	364
24	268	1,410	910	4,440	9,400	4,180	40,300	4,830	1,460	10,500	5,490	357
25	274	1,290	910	3,920	8,200	4,180	49,800	5,910	1,330	7,900	5,910	350
26	268	1,080	1,030	3,400	8,050	4,700	44,000	5,630	1,160	6,190	5,630	350
27	256	899	1,510	3,080	7,170	6,470	35,800	5,090	1,010	4,700	5,220	350
28	250	767	1,630	2,750	6,750	24,700	28,100	4,570	888	4,050	3,920	343
29	262	670	1,750	2,490	-------	43,400	24,900	4,570	800	3,140	2,880	343
30	262	620	3,400	2,300	-------	56,100	20,400	4,700	745	2,420	2,360	343
31	262	-------	4,570	2,110	-------	55,700	-------	4,830	-------	1,870	2,110	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	406	250	300	0.041	0.05
November	1,510	220	579	.079	.09
December	5,350	509	1,760	.240	.28
January	9,250	1,990	4,390	.600	.69
February	21,200	1,230	8,400	1.15	1.20
March	56,100	4,180	12,500	1.71	1.97
April	49,800	6,330	21,400	2.92	3.26
May	16,600	4,570	8,460	1.16	1.34
June	5,350	745	1,750	.239	.27
July	10,500	660	2,400	.328	.38
August	5,910	1,080	3,000	.410	.47
September	2,620	343	988	.135	.15
The year	56,100	220	5,460	.746	10.15

CUMBERLAND RIVER AT CARTHAGE, TENN.

LOCATION.—Staff gage at highway bridge at Carthage, Smith County, 1 mile below mouth of Caney Fork and 8 miles above Lock and Dam No. 7. Zero of gage is 437.83 feet above mean sea level.

DRAINAGE AREA.—10,740 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 70,300 second-feet Mar. 31 (gage height, 26.40 feet); minimum discharge, 430 second-feet Nov. 9; minimum gage height, 7.28 feet Sept. 23 (regulated flow).

1922–1931: Maximum discharge, about 209,000 second-feet Dec. 30, 1926 (gage height, 59.8 feet); minimum, 200 second-feet Sept. 10, 11, 1925 (regulated flow).

REMARKS.—Records good except those for estimated periods, which are fair. Low-water flow largely regulated by large hydroelectric plant on Caney Fork.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,620	835	1,250	6,740	4,950	19,000	66,600	25,200	7,050	1,100	2,260	e2,400
2	1,440	730	1,250	6,120	3,630	22,800	51,300	19,800	7,050	1,020	2,060	e2,300
3	1,440	730	1,500	5,520	3,390	18,300	39,200	16,800	5,520	1,100	1,680	e2,200
4	1,440	634	1,500	4,950	2,920	15,300	33,700	13,900	4,670	1,590	1,590	3,150
5	993	556	1,680	4,400	2,800	13,900	32,000	12,500	3,630	2,360	1,500	e2,900
6	688	556	1,590	4,670	2,800	12,500	31,200	12,800	3,330	2,160	1,500	e2,400
7	484	634	1,960	4,400	2,690	12,800	30,000	12,100	3,390	2,160	1,500	e2,100
8	648	520	2,260	5,520	2,470	16,400	24,800	11,100	3,150	1,680	1,960	e2,000
9	993	440	2,580	9,020	3,150	15,300	20,900	10,700	2,580	1,590	4,140	1,960
10	1,440	556	6,120	13,200	4,950	15,300	17,900	13,200	2,260	1,500	4,670	1,870
11	1,280	688	7,370	12,500	6,740	16,800	18,300	18,300	2,160	1,330	3,880	1,780
12	1,530	730	6,740	9,700	6,430	16,800	19,400	23,600	2,160	1,100	3,630	1,500
13	1,360	1,110	5,520	8,680	7,050	15,000	19,400	25,200	2,060	691	3,880	1,330
14	1,530	1,110	4,400	8,350	12,500	13,500	24,800	20,500	1,960	1,250	4,140	1,250
15	1,440	1,530	3,390	8,350	13,900	12,100	24,800	17,900	1,870	1,250	3,630	1,330
16	1,710	1,890	2,690	8,350	15,300	10,400	21,300	15,000	1,590	1,170	3,880	e1,300
17	1,620	1,890	3,150	8,680	24,800	9,700	17,200	13,500	1,330	1,250	3,630	1,250
18	1,440	1,500	2,360	8,020	30,000	10,000	14,600	11,800	1,420	1,170	3,150	1,420
19	1,020	1,590	2,160	7,050	28,400	9,360	12,500	10,400	1,420	1,100	2,800	e1,500
20	745	1,680	2,360	7,050	27,200	8,680	10,000	9,700	1,330	1,100	4,140	e1,500
21	520	2,060	2,060	7,690	26,800	8,350	9,700	9,700	1,590	2,260	4,140	e1,500
22	594	2,360	1,780	7,370	24,800	8,020	16,000	8,350	2,060	7,370	4,140	e1,200
23	745	2,580	1,870	7,690	19,000	7,690	24,400	11,400	1,870	5,520	2,690	e1,000
24	835	2,160	1,870	7,370	16,000	7,370	32,900	7,050	2,160	10,700	2,920	e900
25	1,020	1,870	1,870	7,050	16,000	7,690	49,600	7,050	2,160	10,700	5,520	e800
26	1,020	1,680	2,060	5,820	16,000	7,370	55,500	7,050	1,870	8,020	5,820	e1,100
27	1,020	1,680	2,690	5,520	14,600	9,360	50,500	8,350	1,680	6,430	5,820	e900
28	993	2,060	2,920	5,820	14,600	36,300	42,600	8,020	1,500	5,230	5,520	e800
29	897	1,500	3,630	5,820	-------	50,500	35,000	7,690	1,330	4,400	4,140	e800
30	897	1,250	3,390	5,230	-------	66,600	30,400	7,050	1,020	3,630	3,390	e800
31	945	-------	6,120	5,230	-------	69,600	-------	7,690	-------	2,920	2,580	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,710	484	1,110	0.104	0.12
November	2,580	440	1,300	.121	.14
December	7,370	1,250	2,970	.278	.32
January	13,200	4,400	7,160	.669	.77
February	30,000	2,470	12,800	1.18	1.23
March	69,600	7,370	18,200	1.70	1.96
April	66,600	9,700	29,200	2.73	3.05
May	25,200	7,050	13,000	1.21	1.40
June	7,050	1,020	2,580	.241	.27
July	10,700	691	3,060	.286	.33
August	5,820	1,500	3,430	.321	.37
September	3,150	800	1,570	.147	.16
The year	69,600	440	7,970	.745	10.12

e Estimated.

CUMBERLAND RIVER AT NASHVILLE, TENN.

LOCATION.—Staff gage at municipal wharf at Broad and First Streets, Nashville, Davidson County, 2Q miles above Lock and Dam 1. Zero of gage is 368.17 feet above mean sea level.

DRAINAGE AREA.—12,860 square miles.

RECORDS AVAILABLE.—January, 1902, to December, 1904; October, 1918, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 73,400 second-feet Apr. 2 (gage height, 30.4 feet); minimum discharge, 720 second-feet Nov. 8, 9; minimum gage height, 6.4 feet Sept. 17.

1902–1904, 1918–1931: Maximum discharge, 203,000 second-feet Jan. 1, 1927 (gage height, 56.2 feet); minimum, 380 second-feet Aug. 13, 14, 1930.

REMARKS.—Records good prior to June 30 and fair thereafter. Discharge estimated May 30, July 3 to Sept. 30. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	1,040	1,610	5,840	6,170	26,600	71,600	31,700	7,520	1,220	3,390	2,970
2	1,410	1,040	1,410	7,520	5,840	29,200	73,400	26,900	7,520	1,410	2,670	2,420
3	1,410	1,040	1,410	7,180	5,190	28,200	64,500	22,100	7,180	1,610	2,390	2,390
4	1,610	870	1,410	6,500	3,930	24,000	48,200	18,700	7,180	1,750	2,400	2,650
5	1,610	870	1,410	6,170	3,340	19,600	37,800	15,700	5,510	1,900	2,440	3,210
6	1,410	870	2,530	6,500	3,340	17,200	34,000	13,500	4,550	2,470	1,950	2,930
7	1,410	870	3,630	7,520	3,060	16,900	32,000	13,500	3,630	2,920	1,700	2,520
8	1,220	720	3,340	7,520	3,060	20,000	31,200	13,500	3,340	2,460	1,860	2,150
9	1,220	720	3,060	9,260	3,930	21,100	26,600	12,300	3,340	2,270	1,930	1,900
10	1,040	870	3,060	11,900	7,520	19,400	22,800	11,900	2,790	2,110	4,270	1,910
11	1,220	1,220	5,190	15,200	7,180	18,200	20,000	13,900	2,280	2,150	4,800	2,020
12	1,610	1,410	7,860	14,800	8,560	18,700	19,400	17,600	2,040	1,880	4,470	1,910
13	1,610	1,410	7,180	13,100	8,210	18,700	19,400	22,300	2,040	1,310	4,160	2,550
14	1,610	1,610	6,170	11,100	12,300	17,200	19,600	23,000	2,040	1,360	4,170	2,020
15	1,610	2,280	5,510	10,700	18,200	15,700	22,600	21,400	2,040	1,880	4,280	1,800
16	1,410	2,790	4,550	10,400	18,200	13,500	24,600	19,100	2,040	1,810	4,310	1,370
17	1,410	2,790	3,340	9,980	18,900	11,900	22,100	16,500	1,610	1,480	4,100	1,120
18	1,820	3,060	3,340	9,620	29,800	10,700	19,100	14,400	1,410	1,370	4,120	1,490
19	1,820	2,530	3,060	9,620	34,600	10,400	16,100	12,300	1,410	1,340	3,710	1,720
20	1,410	2,040	3,060	8,910	32,300	9,980	13,500	11,100	1,410	1,480	3,480	1,700
21	1,410	2,040	3,060	8,210	29,500	9,620	11,100	9,980	1,410	2,820	4,410	1,580
22	1,040	2,280	2,790	8,560	28,200	9,620	11,500	8,910	1,610	4,860	4,640	1,310
23	1,040	2,530	2,790	8,560	26,300	9,260	20,900	8,910	1,610	8,040	4,460	1,300
24	870	2,790	2,280	8,560	21,800	9,620	25,300	8,210	2,040	8,420	3,550	1,290
25	1,040	2,530	2,280	8,210	21,400	8,560	29,800	7,520	2,530	10,500	3,400	1,190
26	870	2,280	2,530	8,210	25,000	8,560	45,800	7,180	2,280	10,000	6,300	1,010
27	870	2,040	4,870	7,520	22,300	8,910	54,900	6,500	2,040	8,300	6,290	931
28	1,220	2,040	5,510	6,840	19,400	20,900	53,600	7,520	1,610	6,640	6,270	923
29	1,220	2,040	4,870	6,840	-------	53,000	46,400	7,860	1,610	5,520	5,520	946
30	1,220	2,040	4,870	6,500	-------	54,900	37,500	7,500	1,220	4,470	4,460	963
31	1,040	-------	4,550	6,500	-------	61,400	-------	7,130	-------	3,810	3,980	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,610	870	1,330	0.103	0.12
November	3,060	720	1,760	.137	.15
December	7,860	1,410	3,630	.282	.33
January	15,200	5,840	8,830	.687	.79
February	34,600	3,060	15,300	1.19	1.24
March	61,400	8,560	20,000	1.56	1.80
April	73,400	11,100	32,500	2.53	2.82
May	31,700	6,500	14,100	1.10	1.27
June	7,520	1,220	2,930	.230	.26
July	10,500	1,220	3,530	.274	.32
August	6,300	1,700	3,870	.301	.35
September	3,210	923	1,810	.141	.16
The year	73,400	720	9,080	.706	9.61

CUMBERLAND RIVER AT CLARKSVILLE, TENN.

LOCATION.—Staff gage at Louisville & Nashville Railroad bridge at Clarksville, Montgomery County, 1¼ miles above mouth of Red River. Prior to Feb. 1, 1931, a staff gage at steamboat landing a quarter of a mile downstream was used. Zero of both gages is 331.31 feet above mean sea level.

DRAINAGE AREA.—16,000 square miles, including Red River.

RECORDS AVAILABLE.—October, 1924, to September, 1931; October, 1922, to September, 1923 (gage heights only).

EXTREMES.—Maximum discharge during year, 80,700 second-feet Apr. 2 (gage height, 34.1 feet); minimum discharge, 960 second-feet Nov. 8, 9; minimum gage height, 11.7 feet Sept. 18, 30.

1922–1931: Maximum discharge, about 216,000 second-feet Jan. 2, 1927 (gage height, 60.0 feet); minimum, 780 second-feet Sept. 3, 1925, Aug. 13, 14, 1930.

REMARKS.—Records fair. Discharge estimated May 30, July 4, Sept. 5, 6, 17–30. Records include flow of Red River. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,780	1,350	2,230	5,730	6,700	33,300	70,700	38,900	9,120	2,230	4,240	4,810
2	1,780	1,150	2,000	7,370	6,370	41,100	80,700	34,400	9,120	2,230	4,240	3,970
3	1,780	1,150	2,000	8,410	6,050	37,800	78,800	29,600	8,760	2,460	3,440	3,440
4	2,000	1,150	1,780	7,710	5,110	33,700	66,200	24,800	8,410	2,700	2,940	3,440
5	1,780	1,150	1,780	7,370	4,520	27,800	48,800	21,100	7,030	2,940	3,440	3,530
6	1,780	1,150	2,230	7,370	3,970	23,300	39,600	17,800	6,050	2,700	3,440	3,610
7	1,780	1,150	3,190	8,410	3,970	22,600	38,500	16,700	5,420	2,940	3,440	3,700
8	2,000	960	4,240	9,120	3,970	31,500	37,400	17,000	4,810	3,440	2,940	3,190
9	1,780	960	4,240	9,120	4,520	32,200	34,400	16,300	4,810	3,190	2,700	2,940
10	1,560	1,150	3,970	12,400	8,760	29,600	30,000	14,900	4,240	3,190	2,700	2,700
11	1,350	1,350	3,970	14,500	10,200	25,500	26,300	15,600	3,700	2,940	4,240	2,460
12	1,350	1,780	6,700	16,300	10,200	23,700	24,100	17,400	3,440	2,700	5,110	2,460
13	1,780	2,000	8,060	15,600	10,200	23,700	23,300	22,200	3,440	2,460	4,810	2,460
14	1,780	2,230	7,710	13,400	11,300	22,600	23,700	26,300	3,440	2,230	4,520	2,460
15	1,780	2,230	6,700	12,700	18,500	20,400	24,800	25,500	3,190	2,000	4,240	2,940
16	1,780	3,190	5,730	12,000	21,800	18,500	28,100	23,300	3,190	2,700	4,520	1,780
17	1,780	3,700	4,810	11,300	21,500	16,700	27,400	21,800	2,940	2,700	4,810	1,550
18	2,000	3,700	4,240	10,900	28,500	14,500	24,400	17,800	2,460	2,460	4,520	1,550
19	2,000	3,700	3,970	10,900	37,400	13,800	21,500	16,000	2,460	2,230	4,520	2,000
20	1,780	3,190	3,700	10,600	38,100	13,100	18,500	13,800	2,230	2,000	4,240	2,250
21	1,780	2,700	3,440	9,120	34,800	12,700	16,000	12,700	2,230	1,780	4,240	2,250
22	1,560	2,700	3,440	9,120	32,600	12,000	16,700	12,000	2,460	4,240	4,810	2,100
23	1,350	2,460	3,440	9,480	31,500	11,600	25,500	11,300	2,700	6,050	5,110	1,700
24	1,350	2,700	2,940	9,120	28,100	12,700	36,000	10,600	6,700	8,060	4,810	1,700
25	1,150	3,190	2,460	9,120	25,900	12,000	32,600	9,480	5,420	7,370	4,240	1,700
26	1,150	2,940	3,190	9,120	33,300	11,300	45,500	8,760	4,240	10,200	4,520	1,600
27	1,150	2,700	4,520	12,000	31,500	11,300	56,200	8,410	3,700	10,900	7,370	1,350
28	1,350	2,460	7,370	7,370	26,600	19,200	58,800	8,760	3,190	9,120	7,710	1,250
29	1,560	2,230	7,030	7,030	------	56,600	54,000	9,840	2,940	7,370	7,370	1,250
30	1,560	2,230	6,050	7,370	------	57,700	45,900	9,300	1,780	6,050	6,700	1,250
31	1,560	------	6,050	7,030	------	62,200	------	8,760	------	5,420	6,050	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,000	1,150	1,640	0.102	0.12
November	3,700	960	2,160	.135	.15
December	8,060	1,780	4,300	.269	.31
January	16,300	5,730	9,910	.619	.71
February	38,100	3,970	18,100	1.13	1.18
March	62,200	11,300	25,300	1.58	1.82
April	80,700	16,000	38,300	2.39	2.67
May	38,900	8,410	17,500	1.09	1.26
June	9,120	1,780	4,450	.278	.31
July	10,900	1,780	4,160	.260	.30
August	7,710	2,700	4,580	.286	.33
September	4,810	1,250	2,450	.153	.17
The year	80,700	960	11,000	.688	9.33

LAUREL RIVER NEAR VOX, KY.

LOCATION.—Staff gage at Whitman Ford, 2 miles below mouth of Spruce Creek and 5 miles southwest of Vox, Laurel County.
DRAINAGE AREA.—239 square miles.
RECORDS AVAILABLE.—June, 1930, to September, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 5,500 second-feet Mar. 28 (gage height, 9.8 feet); minimum, 1.7 second-feet Oct. 5–7 (gage height, 0.40 foot).
1930–31: Maximum discharge, that of Mar. 28, 1931; minimum, 1.3 second-feet Sept. 10, 11, 1930 (gage height, 0.38 foot).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	3.7	4.3	21	36	139	845	230	33	43	11	22
2	2.1	3.7	4.3	18	33	182	890	218	31	27	8.8	16
3	2.1	3.3	4.3	14	31	170	765	194	31	15	8.4	19
4	1.9	2.9	3.7	12	29	150	685	157	28	8.4	111	25
5	1.7	2.9	4.3	15	26	129	605	129	25	6.7	370	25
6	1.7	2.9	17	123	23	117	465	117	20	6.4	295	21
7	1.7	2.9	20	206	22	194	385	129	13	25	570	18
8	3.7	2.7	17	170	23	805	310	182	12	19	170	15
9	5.5	2.7	13	182	123	805	255	415	11	11	106	11
10	7.6	2.5	11	152	605	535	242	845	8.8	7.1	80	8.8
11	8.8	2.5	10.0	129	400	430	685	465	7.6	4.9	70	6.4
12	5.5	3.3	9.3	129	280	340	605	355	7.1	4.0	182	5.5
13	4.3	4.6	8.4	170	255	280	430	310	8.0	3.3	108	4.6
14	3.5	5.5	7.6	170	1,120	242	325	268	6.7	4.3	66	4.0
15	3.3	4.9	7.1	135	845	230	268	206	19	29	48	3.7
16	3.1	5.2	6.7	91	500	194	218	170	29	34	33	3.3
17	3.1	5.5	6.1	104	685	170	194	135	24	25	22	3.1
18	3.1	7.6	6.1	94	1,070	148	170	113	17	23	16	2.9
19	2.9	6.7	6.1	96	765	141	141	96	13	109	12	2.5
20	2.9	6.1	6.1	106	535	137	125	80	11	80	13	2.5
21	2.9	5.5	6.4	106	370	125	113	80	10	980	415	2.5
22	2.9	5.5	6.4	85	280	146	1,920	82	9.3	1,070	255	2.1
23	3.1	5.5	5.8	80	230	170	2,060	87	17	500	131	2.1
24	3.5	4.9	5.5	66	206	170	935	80	45	159	84	2.1
25	3.7	4.9	4.9	65	182	182	500	70	40	98	63	2.1
26	4.3	4.3	6.1	58	159	170	570	75	30	65	48	2.9
27	4.3	4.3	12	54	129	170	685	113	19	48	109	3.5
28	4.3	4.0	19	51	115	4,900	465	73	11	40	87	4.0
29	4.6	3.7	21	48	-------	3,750	355	54	7.6	29	63	4.9
30	4.3	3.7	29	45	-------	1,480	268	42	17	20	43	4.3
31	4.0	-------	23	42	-------	685	-------	36	-------	15	29	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8.8	1.7	3.64	0.015	0.02
November	7.6	2.5	4.28	.018	.02
December	29	3.7	10.0	.042	.05
January	206	12	91.5	.383	.44
February	1,120	22	324	1.36	1.42
March	4,900	117	564	2.36	2.72
April	2,060	113	549	2.30	2.57
May	845	36	181	.757	.87
June	45	6.7	18.7	.078	.09
July	1,070	3.3	113	.473	.55
August	570	8.4	117	.490	.56
September	25	2.1	8.33	.035	.04
The year	4,900	1.7	164	.686	9.35

ROCKCASTLE RIVER AT ROCKCASTLE SPRINGS, KY.

LOCATION.—Staff gage at ferry at Rockcastle Springs, Laurel County, 2 miles below Cane Creek and 5 miles above mouth of river. Zero of gage is 689.18 feet above mean sea level.

DRAINAGE AREA.—746 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 11,900 second-feet Mar. 29 (gage height, 14.15 feet); minimum, 2.3 second-feet Sept. 24, 25 (gage height, 0.18 foot).

1922–1931: Maximum discharge, about 36,400 second-feet Mar. 24, 1929 (gage height, 31.5 feet); minimum, 0.9 second-foot Aug. 13, 1930 (gage height, −0.01 foot).

REMARKS.—Record good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	16	25	75	71	285	2,160	1,000	250	29	65	46
2	4.3	17	26	67	67	372	2,800	900	219	27	54	37
3	5.0	21	25	59	62	490	2,720	575	191	23	45	71
4	4.3	21	24	54	58	470	5,360	700	151	31	54	250
5	4.3	21	31	68	54	450	4,920	600	130	33	57	219
6	4.3	20	81	268	51	430	3,250	530	103	44	115	165
7	6.2	18	126	530	49	470	2,160	550	92	46	205	95
8	12	17	117	490	49	1,480	1,360	800	85	49	219	71
9	11	18	99	338	107	2,400	1,000	1,120	79	57	151	54
10	10	19	94	250	530	1,600	850	3,520	75	81	81	41
11	12	18	81	191	1,060	1,240	2,640	2,400	68	54	68	31
12	14	22	68	178	650	1,060	2,980	1,660	62	49	86	25
13	9.6	27	58	178	530	900	1,930	1,360	59	26	119	24
14	6.6	26	51	178	1,240	750	1,480	1,180	90	22	143	20
15	5.0	24	49	165	2,000	650	1,120	950	151	39	105	16
16	5.8	33	44	141	1,180	550	950	750	160	31	75	11
17	7.2	39	39	132	1,060	470	800	625	153	25	57	9.0
18	12	47	40	132	2,240	410	700	530	119	18	41	6.6
19	11	51	39	139	1,720	372	600	450	97	47	37	5.8
20	10	46	37	151	1,240	355	490	410	79	50	39	5.0
21	6.2	51	36	165	900	320	450	390	54	850	219	4.3
22	3.5	43	35	178	650	302	2,980	372	57	2,000	700	3.5
23	5.8	36	33	160	530	320	7,450	338	62	1,000	234	2.7
24	11	32	30	148	450	338	2,800	302	59	1,790	160	2.3
25	8.4	29	27	137	390	372	1,930	268	51	700	107	2.5
26	5.8	25	32	123	338	355	1,860	320	41	470	95	9.0
27	4.3	24	41	111	285	410	4,500	355	35	250	88	21
28	4.3	23	71	103	234	6,570	2,480	285	33	178	88	85
29	5.8	22	71	99	-------	10,200	1,790	205	27	134	92	99
30	10	24	75	92	-------	3,610	1,360	178	29	99	71	59
31	12	-------	78	81	-------	2,000	-------	178	-------	83	59	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14	3.5	7.61	0.010	0.01
November	51	16	27.7	.037	.04
December	126	24	54.3	.073	.08
January	530	54	167	.224	.26
February	2,240	49	636	.853	.89
March	10,200	285	1,290	1.73	1.99
April	7,450	450	2,260	3.03	3.38
May	3,520	178	768	1.03	1.19
June	250	27	85.4	.114	.13
July	2,000	18	269	.361	.42
August	700	37	120	.161	.19
September	250	2.3	49.7	.067	.07
The year	10,200	2.3	476	.638	8.65

NEW RIVER NEAR NEW RIVER, TENN.

LOCATION.—Staff gage at highway bridge 1¼ miles east of New River, Scott County, and 2 miles above mouth of Brimstone Creek. Zero of gage is 1,095.84 feet above mean sea level.

DRAINAGE AREA.—312 square miles.

RECORDS AVAILABLE.—November, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,800 second-feet Apr. 22 (gage height, 19.4 feet); minimum, 4.0 second-feet July 5 (gage height, 0.40 foot).

1922–1931: Maximum discharge, determined by slope area method, about 70,000 second-feet Mar. 23, 1929 (gage height, from high-water mark, 44.8 feet); minimum, 0.2 second-foot Aug. 6, 7, 1925 (gage height, 0.22 foot).

Flood of Mar. 23, 1929, is the highest known.

REMARKS.—Records good below 10,000 second-feet and fair above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	11	37	282	138	600	1,240	520	115	6.0	36	59
2	16	11	51	193	126	640	1,240	460	98	5.5	31	48
3	12	12	105	180	115	640	1,120	370	78	5.0	31	120
4	11	13	94	156	103	600	1,040	300	62	4.5	49	168
5	9.0	13	94	265	96	500	960	250	49	22	103	168
6	8.5	13	5,050	3,450	92	388	840	234	44	103	120	135
7	8.0	15	1,540	1,590	90	335	680	234	39	70	156	92
8	9.0	15	720	960	86	960	560	250	34	62	122	70
9	24	15	440	720	168	840	480	282	31	37	74	55
10	59	15	300	640	920	640	388	560	28	60	55	44
11	49	17	220	560	680	560	2,820	520	25	48	51	34
12	41	26	180	600	520	500	1,540	440	25	28	282	31
13	31	26	142	1,040	440	422	1,000	370	25	15	1,120	28
14	25	44	122	880	3,870	388	760	318	31	11	388	24
15	22	84	111	640	1,740	422	600	250	31	13	168	17
16	19	129	107	440	1,000	388	480	206	49	36	115	15
17	18	640	98	422	1,160	370	405	168	41	26	80	20
18	13	1,120	90	440	2,310	335	440	151	30	39	57	19
19	11	352	88	880	1,590	335	500	131	24	44	388	19
20	9.0	180	100	960	1,000	282	422	126	19	41	335	17
21	9.0	120	126	800	800	250	388	265	17	265	1,080	15
22	8.5	92	120	600	600	318	9,920	282	22	352	440	11
23	9.0	82	122	460	480	520	3,100	318	19	180	250	11
24	9.0	66	109	370	405	640	1,590	250	16	107	156	10
25	8.0	60	100	300	460	1,120	1,120	206	12	92	113	9
26	8.5	57	149	250	680	880	1,340	193	9.0	135	96	13
27	9.0	49	2,070	220	560	680	1,890	168	8.0	140	147	16
28	9.0	44	1,040	193	520	4,570	1,040	133	8.0	80	180	22
29	9.0	42	680	180	-------	3,380	920	107	7.0	51	142	28
30	9.0	39	480	156	-------	1,540	720	92	6.5	36	107	20
31	11	-------	352	149	-------	1,080	-------	86	-------	31	74	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	59	8.0	16.6	0.053	0.06
November	1,120	11	113	.362	.40
December	5,050	37	485	1.55	1.79
January	3,450	149	612	1.96	2.26
February	3,870	86	741	2.38	2.48
March	4,570	250	810	2.60	3.00
April	9,920	388	1,320	4.23	4.72
May	560	86	266	.853	.98
June	115	6.5	33.4	.107	.12
July	352	4.5	69.2	.222	.26
August	1,120	31	211	.676	.78
September	168	9	44.6	.143	.16
The year	9,920	4.5	391	1.25	17.01

SOUTH FORK OF CUMBERLAND RIVER AT NEVELSVILLE, KY.

LOCATION.—Staff gage a quarter of a mile below Turkey Creek Ferry on Greenwood-Monticello Pike, 1 mile west of Nevelsville, McCreary County, and 1¼ miles below mouth of Little South Fork. Zero of gage is 637.40 feet above mean sea level.

DRAINAGE AREA.—1,260 square miles.

RECORDS AVAILABLE.—March, 1915, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 23,100 second-feet Apr. 23 (gage height, 22.40 feet); minimum, 43 second-feet Sept. 30 (gage height, 1.58 feet).

1915–1931: Maximum discharge, about 110,000 second-feet Mar. 23, 1929 (gage height, from high water mark, 69.0 feet); minimum, 13 second-feet Sept. 3, 1925 (gage height, 1.39 feet).

REMARKS.—Records good. Operation of a small power plant a short distance above gage may affect flow at extremely low water.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	69	144	740	490	1,870	3,470	2,080	795	68	163	210
2	92	66	148	610	422	2,220	4,190	1,800	740	59	239	170
3	84	66	151	560	400	2,220	4,010	1,520	635	82	254	254
4	77	64	148	512	360	2,010	3,380	1,270	445	84	468	270
5	68	62	148	635	360	1,730	3,050	1,090	340	196	445	254
6	62	60	490	2,010	360	1,590	2,570	1,030	286	210	610	360
7	59	60	4,670	4,190	320	1,660	2,360	1,150	254	270	740	286
8	71	62	2,010	2,810	320	2,010	1,870	1,270	239	360	635	254
9	69	60	1,210	1,940	468	2,290	1,730	2,290	210	286	490	224
10	196	59	910	1,590	1,210	2,220	1,450	3,830	183	254	740	170
11	183	57	635	1,450	1,590	1,870	2,810	2,970	170	165	585	144
12	183	59	560	1,450	1,450	1,660	4,010	2,290	165	135	1,520	120
13	144	84	468	2,150	1,390	1,450	2,970	1,870	156	133	970	90
14	126	133	400	2,430	4,100	1,330	2,360	1,590	144	126	1,330	82
15	113	148	360	1,870	3,740	1,270	1,940	2,010	165	106	795	69
16	104	153	286	1,270	3,470	1,210	1,800	1,090	168	126	490	48
17	100	254	286	1,210	4,010	1,150	1,520	970	183	196	360	73
18	96	1,270	286	1,150	6,220	1,090	1,390	850	163	170	320	66
19	82	1,030	286	1,210	5,980	1,030	1,330	795	151	196	303	66
20	60	585	286	1,390	4,010	970	1,270	795	135	239	400	68
21	62	422	286	1,270	2,810	910	1,210	685	124	560	910	78
22	53	286	303	1,030	2,150	910	10,300	850	224	1,940	1,210	69
23	57	270	286	1,270	1,940	850	13,100	850	254	1,090	685	66
24	59	224	286	1,150	1,450	1,330	5,740	795	170	795	445	59
25	57	196	360	970	1,390	1,270	3,560	740	148	490	360	48
26	55	183	320	795	1,800	1,940	3,050	660	126	422	320	55
27	53	183	1,450	795	1,730	2,430	6,700	610	111	400	254	48
28	75	170	2,360	685	1,660	18,400	4,470	535	100	340	210	44
29	73	165	1,590	635	-------	15,300	3,210	468	84	286	303	50
30	66	142	1,210	560	-------	7,180	2,810	422	75	254	270	43
31	66	-------	970	490	-------	4,470	-------	422	-------	196	254	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	196	53	88.2	0.070	0.08
November	1,270	57	221	.175	.20
December	4,670	144	752	.597	.69
January	4,190	490	1,320	1.05	1.21
February	6,220	320	1,990	1.58	1.64
March	18,400	850	2,830	2.25	2.59
April	13,100	1,210	3,450	2.74	3.06
May	3,830	422	1,280	1.02	1.18
June	795	75	238	.189	.21
July	1,940	59	330	.262	.30
August	1,520	163	551	.437	.50
September	360	43	128	.102	.11
The year	18,400	43	1,090	.865	11.77

CLEAR FORK NEAR ROBBINS, TENN.

LOCATION.—Staff gage at Burnt Mill Bridge, 3½ miles northwest of Robbins, Scott County, and 4 miles above confluence with New River.
DRAINAGE AREA.—278 square miles.
RECORDS AVAILABLE.—October, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year, 5,970 second-feet Mar. 28 (gage height, 7.60 feet); minimum, 3.8 second-feet Sept. 25, 29 (gage height, 0.46 foot).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	9.5	21	118	90	472	905	450	405	15	30	12
2	8.2	8.6	24	110	81	495	850	385	229	26	110	11
3	6.8	8.6	30	90	77	450	740	345	141	23	102	15
4	6.4	7.7	28	86	72	405	690	268	102	23	108	17
5	6.8	8.6	33	129	68	345	640	246	79	60	68	33
6	4.7	8.6	250	690	68	268	518	305	66	105	95	26
7	4.4	8.6	428	540	64	250	450	385	56	138	135	18
8	9.0	8.6	212	405	64	345	385	385	49	74	112	15
9	30	8.6	132	345	100	365	325	450	46	50	77	12
10	48	8.6	102	345	285	325	285	1,020	40	42	60	9.0
11	32	8.6	84	325	305	305	850	690	36	34	56	7.7
12	26	11	72	405	240	285	795	565	32	26	72	6.8
13	22	14	64	540	229	268	590	472	37	22	184	5.9
14	18	17	56	472	1,270	243	472	385	46	22	90	8.2
15	16	22	52	345	1,080	250	385	325	34	29	66	6.4
16	13	24	49	226	640	250	325	268	29	50	52	10
17	11	32	49	268	795	226	268	236	29	37	40	9.5
18	9.5	46	49	229	1,340	215	268	187	29	32	35	8.2
19	8.6	46	46	250	1,080	218	250	156	25	28	32	6.8
20	7.7	40	48	268	795	226	215	135	22	35	32	6.8
21	6.8	34	52	240	590	194	190	126	19	60	27	8.2
22	5.9	29	54	184	472	229	2,290	126	22	112	26	6.4
23	5.0	26	43	174	385	305	1,990	138	29	88	24	5.0
24	8.2	24	44	159	325	285	1,020	138	22	60	23	4.4
25	8.6	23	46	144	385	305	795	110	22	105	22	3.8
26	7.7	22	58	132	495	285	850	95	18	95	19	5.4
27	11	21	232	120	428	285	1,480	88	16	64	21	5.0
28	12	21	250	115	385	5,040	960	74	14	46	19	4.4
29	11	19	187	110	------	3,360	740	66	12	36	17	3.8
30	9.5	19	150	100	------	1,410	565	108	12	30	17	4.7
31	9.0	------	141	95	------	960	------	472	------	26	15	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	48	4.4	12.6	0.045	0.05
November	46	7.7	19.5	.070	.08
December	428	21	99.5	.358	.41
January	690	86	250	.899	1.04
February	1,340	64	436	1.57	1.64
March	5,040	194	608	2.19	2.52
April	2,290	190	703	2.53	2.82
May	1,020	66	297	1.07	1.23
June	405	12	57.3	.206	.23
July	138	15	51.4	.185	.21
August	184	15	57.6	.207	.24
September	33	3.8	9.85	.035	.04
The year	5,040	3.8	215	.773	10.51

OBEY RIVER NEAR BYRDSTOWN, TENN.

LOCATION.—Chain gage at bridge on State Highway 24, 1½ miles above mouth of Eagle Creek and 3½ miles southwest of Byrdstown, Pickett County. Zero of gage is 577.08 feet above mean sea level.

DRAINAGE AREA.—452 square miles.

RECORDS AVAILABLE.—March, 1919, to September, 1931.

EXTREMES.—Maximum discharge during year, 12,200 second-feet Mar. 28 (gage height, 17.2 feet); minimum, 13 second-feet Sept. 23 (gage height, 1.26 feet).

1919–1931: Maximum discharge, about 35,000 second-feet June 29, 1928, Mar. 23, 1929 (gage height, 35.9 feet); minimum, 7 second-feet Nov. 3, 1920 (gage height, 0.90 foot).

REMARKS.—Records good between 100 and 4,000 second-feet; others fair. Discharge interpolated Jan. 14, Mar. 8, 19; estimated July 13–15.

Daily and monthly discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	28	34	136	105	905	1,290	700	169	36	260	21
2	17	28	36	110	120	1,020	1,180	600	145	39	105	20
3	17	29	34	100	100	850	1,120	555	122	44	169	157
4	16	28	36	80	92	750	1,020	465	105	56	172	78
5	16	27	39	90	82	600	850	510	95	100	112	56
6	17	26	125	100	80	510	750	488	122	148	76	36
7	16	23	340	465	76	465	650	650	92	130	88	29
8	23	23	300	442	80	498	578	650	88	154	80	26
9	45	26	190	465	136	532	510	750	78	95	47	24
10	59	31	85	442	260	510	442	2,980	74	90	63	21
11	49	28	80	420	360	488	555	1,590	67	56	59	18
12	34	36	90	400	280	488	625	1,120	63	44	105	17
13	31	42	80	532	242	465	555	960	56	42	360	14
14	31	39	67	476	1,070	420	510	800	54	44	125	16
15	28	36	63	420	1,590	400	465	700	50	52	108	17
16	26	41	56	300	1,530	442	420	578	52	102	82	15
17	27	42	52	260	1,020	420	420	510	57	80	65	16
18	28	52	63	197	2,010	380	380	442	49	59	49	14
19	28	45	59	242	1,770	370	340	380	41	52	47	15
20	26	49	56	320	1,180	360	300	340	56	49	130	16
21	26	52	52	320	850	340	320	380	36	260	172	14
22	24	52	59	280	650	340	960	300	92	260	76	15
23	26	42	57	242	532	380	2,140	280	47	151	52	13
24	39	39	52	218	465	380	1,350	280	57	148	41	16
25	34	34	56	190	442	380	1,020	260	52	105	35	14
26	31	34	59	172	750	380	1,070	218	42	98	42	15
27	28	36	105	160	750	380	2,210	200	39	63	36	22
28	34	34	204	148	650	11,400	1,470	169	39	47	32	21
29	31	31	218	133	-------	5,480	1,070	157	35	36	34	15
30	31	29	197	128	-------	2,280	850	130	35	31	28	14
31	29	-------	166	115	-------	1,410	-------	133	-------	32	23	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	59	16	28.5	0.063	0.07
November	52	23	35.4	.078	.09
December	340	34	100	.221	.25
January	532	80	261	.577	.67
February	2,010	76	617	1.37	1.43
March	11,400	340	1,100	2.43	2.80
April	2,210	300	847	1.87	2.09
May	2,980	130	590	1.31	1.51
June	169	35	70.3	.156	.17
July	260	31	87.2	.193	.22
August	360	23	92.7	.205	.24
September	157	13	26.2	.058	.06
The year	11,400	13	320	.708	9.60

CANEY FORK AT CLIFTY, TENN.

LOCATION.—Staff gage at county highway bridge 150 feet above Pilot Falls, three-quarters of a mile south of Clifty, White County, and 3 miles above mouth of Clifty Creek.

DRAINAGE AREA.—114 square miles.

RECORDS AVAILABLE.—September, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 2,110 second-feet Feb. 14 (gage height, 2.42 feet); minimum, 0.3 second-foot Sept. 25, 1931 (gage height, 0.22 foot).

REMARKS.—Records good except those for Aug. 20, 25, 30, Sept. 6, 13, 18, 20, which were interpolated.

Daily and monthly discharge in second-feet, 1930–31

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	7.8	13	72	156	64	299	340	215	25	2.2	1.5	1.5
2	------	6.5	11	75	151	61	260	325	199	25	2.2	2.2	1.5
3	------	5.3	11	68	126	55	238	292	167	20	1.8	1.8	31
4	------	3.6	11	64	122	52	215	286	131	16	7.8	2.2	25
5	------	3.6	11	107	273	49	172	243	112	14	5.3	1.8	13
6	------	3.0	9.3	1,450	907	46	151	215	172	14	46	2.6	9.2
7	------	2.6	9.3	630	506	46	141	193	378	13	33	2.2	5.3
8	------	273	9.3	355	400	40	183	162	340	13	29	2.2	3.0
9	------	156	7.8	260	392	188	199	141	476	11	25	25	2.6
10	------	83	7.8	204	370	183	188	122	561	11	18	33	2.2
11	------	55	9.3	183	318	193	183	183	370	9.3	13	27	1.8
12	------	40	31	156	438	162	172	156	306	9.3	7.8	27	1.8
13	------	31	72	141	476	151	162	146	232	7.8	3.6	27	1.6
14	------	27	64	126	348	2,110	151	131	204	7.8	2.2	27	1.5
15	------	20	83	117	260	655	162	122	172	6.5	2.2	22	1.5
16	------	14	280	112	232	486	151	112	151	6.5	1.8	16	1.2
17	------	16	355	102	199	811	141	146	122	6.5	3.0	11	1.2
18	------	22	254	107	204	1,080	131	141	107	5.3	4.4	6.5	1.4
19	------	16	167	126	254	655	122	141	94	5.3	7.8	4.4	1.5
20	7.8	14	131	131	249	517	112	136	87	4.4	13	10	1.1
21	6.5	11	107	131	215	355	102	131	72	5.3	3.6	16	.7
22	4.4	9.3	98	131	183	273	183	921	58	5.3	9.3	16	.9
23	3.6	11	83	122	162	226	178	605	58	4.4	11	11	.7
24	3.0	14	79	102	136	204	226	385	49	4.4	9.3	6.5	.5
25	9.3	18	72	94	122	457	226	332	40	3.6	7.8	4.8	.3
26	83	18	72	273	112	438	210	476	36	3.0	6.5	3.0	2.6
27	40	14	58	457	102	362	249	605	31	3.0	3.6	2.6	2.2
28	27	14	49	355	91	312	1,940	378	27	2.6	2.6	2.6	1.8
29	18	14	49	286	83	------	1,000	273	25	2.6	2.2	2.6	1.5
30	13	14	52	226	75	------	561	232	22	2.6	1.8	2.2	1.5
31	------	14	------	193	72	------	362	------	22	------	1.5	1.8	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
September 20–30	83	3.0	19.6	0.172	0.07
1930–31					
October	273	2.6	30.7	.269	.31
November	355	7.8	75.5	.662	.74
December	1,450	64	224	1.96	2.26
January	907	72	249	2.18	2.51
February	2,110	40	365	3.20	3.33
March	1,940	102	283	2.48	2.86
April	921	112	269	2.36	2.63
May	561	22	162	1.42	1.64
June	25	2.6	8.92	.078	.09
July	46	1.5	9.30	.082	.09
August	33	1.5	10.4	.091	.10
September	31	.3	4.05	.036	.04
The year	2,110	.3	140	1.23	16.60

CANEY FORK NEAR ROCK ISLAND, TENN.

LOCATION.—Water-stage recorder 180 feet below power house of Tennessee Electric Power Co., half a mile downstream from storage dam at mouth of Collins River, and 1 mile northwest of Rock Island, Warren County. Zero of gage is 649.46 feet above mean sea level.

DRAINAGE AREA.—1,640 square miles.

RECORDS AVAILABLE.—November, 1911, to March, 1924; April, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, about 20,600 second-feet Mar. 29 (gage height, 15.6 feet); minimum, 57 second-feet Oct. 18, Nov. 1, represents leakage below dam when power plant was shut down.

1911–1931: Maximum discharge, about 210,000 second-feet Mar. 23, 1929 (gage height, 40.6 feet, present datum); minimum, 45 second-feet, represents leakage prior to raising of dam in 1925.

Flood of Mar. 23, 1929, was highest ever known.

REMARKS.—Records good below 5,000 second-feet and fair above. Flow almost completely regulated by dam and power house immediately above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,010	111	726	2,170	1,070	3,850	5,040	2,480	1,010	102	140	132
2	954	93	818	2,190	952	2,860	5,660	2,470	702	98	113	172
3	382	144	592	2,160	1,080	2,920	5,090	1,390	219	110	127	133
4	106	138	223	1,320	1,140	2,850	4,190	2,540	344	112	229	132
5	142	129	139	1,770	1,140	2,360	4,030	3,100	262	124	132	166
6	160	72	482	1,780	925	2,290	4,180	2,420	115	112	132	166
7	151	73	552	2,120	672	2,180	2,990	2,120	159	152	136	526
8	200	75	1,930	2,160	645	645	2,920	2,030	108	116	132	507
9	365	76	2,120	2,220	592	2,400	2,680	1,710	532	112	127	224
10	670	378	2,270	1,980	1,210	2,370	2,140	4,070	386	106	145	156
11	572	88	2,570	710	1,120	2,420	2,220	4,170	411	108	596	166
12	240	320	2,240	2,120	932	2,620	1,200	3,600	527	100	662	264
13	896	328	1,230	2,380	2,050	2,660	2,620	2,720	295	118	640	212
14	1,130	608	552	2,580	1,600	2,380	2,380	2,340	103	187	1,080	535
15	1,100	336	1,270	2,580	2,400	1,800	2,540	2,210	126	114	326	660
16	674	134	636	2,410	2,750	2,460	2,370	2,120	124	114	198	872
17	106	518	658	2,100	2,100	2,820	2,400	1,220	98	114	251	874
18	60	585	856	708	2,220	2,780	2,000	2,390	132	142	156	698
19	68	1,060	553	2,560	2,270	2,780	612	2,420	181	158	162	746
20	311	1,560	316	2,680	4,140	2,760	2,260	2,620	115	162	154	174
21	273	1,400	598	2,640	4,140	2,660	2,520	2,470	137	196	148	150
22	346	344	626	2,620	2,800	1,820	1,880	2,370	214	128	176	154
23	437	73	678	2,460	3,250	2,630	1,820	1,650	220	381	152	180
24	606	352	466	2,380	2,770	2,760	2,200	578	191	430	140	689
25	541	194	296	1,040	2,630	2,740	2,430	1,910	142	528	546	373
26	226	898	479	2,540	3,470	2,730	3,590	2,320	152	414	519	222
27	294	68	1,180	2,840	4,100	2,010	5,480	2,530	108	294	452	146
28	314	301	734	2,880	2,880	1,240	3,250	2,400	96	448	551	567
29	333	178	1,700	2,720	-------	13,700	3,330	2,460	116	130	210	668
30	266	177	2,100	2,780	-------	8,200	2,960	1,860	118	131	148	894
31	248	-------	2,000	2,090	-------	7,420	-------	1,330	-------	154	358	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,130	60	425	0.259	0.30
November	1,560	68	360	.220	.25
December	2,570	139	1,020	.622	.72
January	2,880	708	2,180	1.33	1.53
February	4,140	592	2,040	1.24	1.29
March	13,700	645	3,160	1.93	2.22
April	5,660	612	2,970	1.81	2.02
May	4,170	578	2,320	1.41	1.63
June	1,010	96	248	.151	.17
July	528	98	184	.112	.13
August	1,080	113	292	.178	.21
September	894	132	385	.235	.26
The year	13,700	60	1,300	.793	10.73

CANEY FORK NEAR SILVER POINT, TENN.

LOCATION.—Water-stage recorder at Johnson's ferry, 4 miles south of Silver Point, Putnam County, and 4 miles below mouth of Falling Water River. Zero of gage is 499.60 feet above mean sea level.

DRAINAGE AREA.—2,100 square miles.

RECORDS AVAILABLE.—November, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 19,200 second-feet Mar. 29 (gage height, 14.8 feet); minimum, 141 second-feet Oct. 20, 21, Nov. 8–10 (gage height, 1.02 feet).

1922–1931: Maximum discharge, determined by slope-area method, about 220,000 second-feet Mar. 23, 1929 (gage height, 60.1 feet); minimum, 25 second-feet several days in November, 1924, and August, September, October, 1925 (gage height, 0.00 foot).

Flood of Mar. 23, 1929, reached highest stage known.

REMARKS.—Records good. Flow largely regulated by Great Falls hydroelectric plant near Rock Island, 36 miles upstream, and to slight extent by small plant on Falling Water River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,190	366	286	2,240	1,640	4,420	6,800	2,940	1,570	224	559	418
2	1,120	274	812	2,280	1,230	4,570	5,430	2,880	1,180	242	298	308
3	1,060	186	996	2,330	1,100	3,450	5,380	2,480	918	215	250	439
4	573	177	810	1,920	1,260	3,660	5,600	1,820	437	1,230	231	314
5	251	208	392	1,580	1,320	3,260	4,270	3,560	522	656	340	223
6	166	218	532	1,900	1,240	2,730	4,800	3,020	530	678	252	235
7	202	192	670	1,960	1,120	3,000	3,300	2,900	382	376	237	230
8	716	147	728	2,470	816	2,250	3,240	2,310	266	324	230	586
9	812	141	1,960	2,570	945	1,300	3,070	3,040	291	292	418	550
10	540	141	2,150	2,580	918	2,690	3,040	2,540	588	250	427	370
11	828	348	2,570	2,150	1,420	2,590	2,780	5,950	610	235	322	297
12	662	306	2,260	1,240	1,290	2,780	2,380	4,020	610	225	660	241
13	367	366	2,040	2,330	1,460	2,880	1,970	3,280	652	216	796	330
14	1,020	432	1,320	2,640	2,180	2,880	2,800	2,990	490	214	742	350
15	1,250	764	704	2,650	2,340	2,440	2,770	2,490	290	262	1,150	574
16	1,200	602	1,330	2,560	2,820	2,160	2,780	2,630	236	303	517	846
17	837	430	816	2,460	3,020	2,850	2,600	2,110	272	243	283	1,030
18	391	682	712	2,060	3,140	3,020	2,630	1,700	220	228	314	926
19	190	762	968	1,160	3,180	2,960	2,110	2,620	237	224	318	951
20	145	1,220	728	2,640	3,530	2,890	1,260	2,810	326	278	336	808
21	283	1,620	480	2,700	5,480	2,920	2,600	2,690	554	397	314	415
22	366	1,500	650	2,730	3,650	3,020	3,000	2,580	296	475	259	253
23	450	608	776	2,620	3,210	2,420	2,640	2,450	346	361	238	236
24	562	251	825	2,580	3,680	3,200	2,390	1,670	370	424	254	243
25	718	386	638	2,270	3,700	3,020	2,720	988	341	579	230	870
26	654	331	498	1,580	3,860	2,920	3,450	2,220	292	652	550	598
27	370	932	770	2,850	4,920	3,260	4,960	2,600	268	550	609	430
28	376	324	1,380	2,900	3,760	7,680	4,860	2,690	252	460	568	264
29	414	276	1,040	2,870	-------	12,300	3,570	2,550	220	576	657	598
30	461	326	2,350	3,040	-------	12,500	3,480	2,540	198	304	354	854
31	370	-------	2,560	2,830	-------	7,960	-------	1,750	-------	238	254	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,250	145	598	0.285	0.33
November	1,620	141	484	.230	.26
December	2,570	286	1,120	.533	.61
January	3,040	1,160	2,340	1.11	1.28
February	5,480	816	2,440	1.16	1.21
March	12,500	1,300	3,870	1.84	2.12
April	6,800	1,260	3,420	1.63	1.82
May	5,950	988	2,670	1.27	1.46
June	1,570	198	459	.219	.24
July	1,230	214	385	.183	.21
August	1,150	230	418	.199	.23
September	1,030	223	493	.235	.26
The year	12,500	141	1,560	.743	10.03

BEE CREEK AT HERBERT, TENN.

LOCATION.—Water-stage recorder 500 feet below mouth of Glade Creek and three-quarters of a mile northwest of Herbert, Bledsoe County. Zero of gage is 1,476.93 feet above mean sea level.

DRAINAGE AREA.—108 square miles.

RECORDS AVAILABLE.—August, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 1,840 second-feet Mar. 28 (gage height, 4.37 feet); no flow Aug. 16 to Sept. 9, 1930, Sept. 29, 30, 1931.

Maximum stage known, 15.7 feet, from high-water mark, Mar. 23, 1929 (discharge not determined).

REMARKS.—Records good except those for extremely low stages, which are fair, and those for July 11–18, which were estimated.

Daily and monthly discharge, in second-feet, 1930–31

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1.7	2.5	25	106	44	329	356	141	12	1.9	3.8	2.2
2	0	.9	2.2	30	93	39	288	342	138	12	7.7	3.1	2.5
3	0	.7	2.2	28	88	37	248	288	106	11	6.5	4.2	8.3
4	0	.6	1.9	27	88	34	212	320	84	8.3	7.7	5.1	11
5	0	.5	1.9	76	216	32	169	288	76	6.5	7.7	3.8	7.7
6	0	.2	1.9	725	535	29	138	248	133	6.0	12	5.1	6.0
7	0	.1	1.7	388	406	28	147	208	388	6.0	12	12	5.1
8	0	3.8	1.7	222	352	28	260	169	304	5.1	8.3	11	4.2
9	0	18	1.7	147	356	51	219	138	475	3.8	6.5	26	3.1
10	.1	16	1.7	106	312	90	195	116	582	3.1	6.5	49	2.5
11	.1	9.6	1.7	88	256	66	172	127	365	2.5	15	26	1.9
12	.7	6.0	3.4	80	320	62	141	100	264	2.5	10	18	1.9
13	35	4.2	7.7	65	329	119	119	84	222	2.2	6	26	1.7
14	15	2.8	15	60	264	810	113	74	169	2.2	4	28	1.4
15	7.7	2.2	16	52	185	505	124	68	127	1.9	3	20	1.1
16	3.8	1.7	74	52	169	324	108	65	103	1.7	3	14	.7
17	2.5	1.7	169	51	166	470	90	60	84	1.4	20	10	.5
18	2.2	1.2	113	48	163	725	80	55	70	1.1	39	8.3	.3
19	1.7	1.1	68	54	182	560	76	54	57	.9	32	7.1	.3
20	.9	1.2	49	70	166	378	68	51	49	.9	28	10	.3
21	.9	1.1	39	74	138	276	65	62	46	.9	28	24	.2
22	.7	1.2	35	78	113	212	175	615	40	.9	96	22	.2
23	.7	1.2	31	76	100	172	185	535	39	.9	52	15	.1
24	.5	1.7	27	70	88	153	212	342	36	1.1	35	10	.1
25	1.4	1.7	24	68	82	670	222	288	30	2.8	25	8.9	.1
26	1.4	1.9	22	208	74	560	202	352	26	1.9	20	13	.3
27	4.2	1.9	21	495	68	374	248	378	21	1.9	14	12	.2
28	4.2	1.9	20	280	63	304	1,520	280	18	2.5	9.6	4.6	.1
29	3.4	1.9	16	240	54	------	1,230	219	14	2.2	7.7	4.2	0
30	2.5	2.2	16	188	49	------	598	172	12	1.7	6.5	3.8	0
31	------	2.5	------	127	47	------	392	------	12	------	5.1	2.8	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
September	35	0	2.99	0.028	0.03
1930–31					
October	18	.1	3.01	.028	.03
November	169	1.7	26.2	.243	.27
December	725	25	139	1.29	1.49
January	535	47	182	1.69	1.95
February	810	28	255	2.36	2.46
March	1,520	65	269	2.49	2.87
April	615	51	215	1.99	2.22
May	582	12	136	1.26	1.45
June	12	.9	3.60	.033	.04
July	96	3	17.3	.160	.18
August	49	2.8	13.3	.123	.14
September	11	0	2.13	.020	.02
The year	1,520	0	104	.963	13.12

NOTE.—No flow Aug. 16–31, 1930; 0.1 second-foot Aug. 15, 1930.

COLLINS RIVER NEAR McMINNVILLE, TENN.

LOCATION.—Water-stage recorder at highway bridge half a mile below mouth of Barren Fork and 2½ miles northeast of McMinnville, Warren County. Zero of gage is 825.78 feet above mean sea level.

DRAINAGE AREA.—624 square miles.

RECORDS AVAILABLE.—April, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,530 second-feet Mar. 28 (gage height, 8.52 feet); minimum, 44 second-feet Oct. 2, 3 (gage height, 0.78 foot).

1925–1931: Maximum discharge, about 75,300 second-feet Mar. 23, 1929 (gage height, 39.1 feet); minimum, 35 second-feet Sept. 21, 1930 (gage height, 0.74 foot).

Maximum stage known, that of Mar. 23, 1929.

REMARKS.—Records good except those for estimated periods, which are fair. Considerable regulation during low water caused by operation of power plant on Barren Fork at McMinnville.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	a 88	100	419	236	1,100	1,960	695	166	76	86	83
2	44	79	96	339	228	1,040	1,880	672	156	89	204	a 79
3	47	86	95	328	220	928	1,600	650	154	107	124	a 98
4	48	77	111	298	206	820	1,500	560	147	319	89	a 95
5	58	77	a 132	310	180	695	2,080	499	140	154	88	a 92
6	65	83	a 248	745	191	605	1,720	499	136	136	89	80
7	76	80	628	1,460	178	560	1,280	596	118	126	94	67
8	325	76	574	1,190	178	650	1,040	546	118	111	80	77
9	374	69	427	1,160	206	720	872	795	107	92	116	a 64
10	188	75	332	1,100	374	650	745	1,390	116	a 94	301	a 65
11	102	80	a 289	900	431	578	695	1,390	116	a 84	209	a 69
12	98	79	a 256	820	384	560	650	1,010	109	86	149	a 69
13	102	a 84	a 222	928	381	515	596	795	103	77	126	1,880
14	95	a 92	209	795	1,840	483	528	650	107	92	105	455
15	80	a 102	176	650	2,690	459	487	a 560	109	132	96	a 220
16	83	126	180	587	1,720	463	467	a 483	109	103	89	a 128
17	a 105	188	170	528	1,320	439	435	415	105	103	89	116
18	a 111	248	163	503	1,720	403	399	388	102	95	100	a 96
19	103	a 280	a 168	507	1,720	384	360	336	94	84	109	a 105
20	96	a 222	a 193	524	1,360	370	381	298	95	98	a 180	96
21	92	a 163	228	533	1,070	364	455	277	96	145	168	86
22	86	a 138	250	495	872	770	795	262	89	239	128	84
23	90	128	250	439	720	900	1,250	250	98	166	98	77
24	a 109	120	250	384	628	770	1,040	233	90	a 186	95	77
25	a 88	118	233	364	770	770	872	233	89	a 149	83	67
26	88	105	233	342	1,130	770	872	220	a 86	a 124	70	83
27	86	103	507	313	1,010	795	1,360	209	a 89	a 149	79	83
28	95	102	820	298	900	4,390	1,220	191	92	102	a 73	68
29	96	98	695	277	-------	4,720	1,010	183	72	102	a 158	69
30	a 79	107	569	248	-------	2,960	820	163	92	100	92	67
31	a 83	-------	483	242	-------	2,080	-------	166	-------	86	92	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	374	44	104	0.167	0.19
November	280	69	116	.186	.21
December	820	95	300	.481	.55
January	1,460	242	581	.931	1.07
February	2,690	178	817	1.31	1.36
March	4,720	364	1,020	1.63	1.88
April	2,080	360	979	1.57	1.75
May	1,390	163	504	.808	.93
June	166	72	110	.176	.20
July	319	76	123	.197	.23
August	301	70	118	.189	.22
September	1,880	64	160	.256	.29
The year	4,720	44	409	.655	8.88

a Estimated.

STONE RIVER NEAR SMYRNA, TENN.

LOCATION.—Water-stage recorder at highway bridge at Jefferson Springs, 1 mile below confluence of East and West Forks and 4 miles east of Smyrna, Rutherford County. Zero of gage is 459.76 feet above mean sea level.

DRAINAGE AREA.—552 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 15,300 second-feet Mar. 28 (gage height, 16.25 feet); minimum, 6 second-feet Sept. 9 (gage height, 0.76 foot).

1925–1931: Maximum discharge, about 37,600 second-feet Mar. 23, 1929 (gage height, 36.5 feet); minimum, 0.8 second-feet Aug. 17, 22, 1925 (gage height, 0.50 foot).

REMARKS.—Records good between 60 and 10,000 second-feet; fair above and below those limits. Discharge based on auxiliary staff-gage readings Dec. 16–19. Low-water flow is regulated by operation of small power developments on both forks.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	17	24	168	68	3,600	2,830	477	103	24	39	43
2	22	17	41	174	60	2,070	1,920	489	140	39	27	32
3	16	17	43	178	80	1,470	1,470	432	65	56	20	20
4	18	21	21	157	62	1,110	1,230	421	91	168	22	21
5	16	27	50	189	82	871	995	370	72	150	41	21
6	16	39	448	920	70	697	850	356	45	115	34	25
7	20	14	454	815	58	627	710	465	78	150	20	20
8	45	12	328	1,190	62	885	645	333	68	112	45	21
9	178	39	150	1,470	80	731	567	579	68	75	22	10
10	122	20	150	885	333	603	531	780	70	56	17	12
11	56	22	132	621	365	543	495	573	41	75	30	12
12	80	39	80	567	205	483	448	448	56	52	34	12
13	24	75	75	808	256	375	410	320	52	30	43	320
14	25	78	82	615	1,390	302	328	365	36	217	47	270
15	50	225	62	495	1,030	365	320	256	36	106	22	75
16	24	261	60	380	690	266	310	248	56	70	39	43
17	34	710	60	320	1,600	315	279	225	85	62	16	25
18	47	360	85	328	2,120	238	279	193	62	56	22	18
19	34	209	100	292	1,520	225	252	213	43	41	52	29
20	27	146	168	266	1,110	213	238	171	22	60	80	20
21	54	112	146	270	850	213	333	234	47	100	85	15
22	54	115	143	193	658	710	1,970	302	56	217	115	27
23	21	68	115	174	537	1,030	1,560	154	45	112	122	24
24	21	58	112	225	519	710	958	150	43	94	58	17
25	56	68	85	143	1,600	573	752	122	39	50	41	15
26	34	47	238	122	1,780	465	1,110	115	29	45	47	10
27	17	56	995	129	1,190	704	1,230	80	27	39	41	15
28	17	36	585	122	1,150	11,100	780	60	27	22	34	11
29	37	62	465	109	-------	3,930	615	164	39	34	34	22
30	18	52	375	115	-------	2,170	525	80	39	32	30	30
31	37	-------	333	94	-------	1,830	-------	54	-------	30	32	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	178	16	41.0	0.074	0.09
November	710	12	101	.183	.20
December	995	21	200	.362	.42
January	1,470	94	404	.732	.84
February	2,120	58	697	1.26	1.31
March	11,100	213	1,270	2.30	2.65
April	2,830	238	831	1.51	1.68
May	780	54	298	.540	.62
June	140	22	56.0	.101	.11
July	217	22	80.3	.145	.17
August	122	16	42.3	.077	.09
September	320	10	41.2	.075	.08
The year	11,100	10	337	.611	8.26

HARPETH RIVER NEAR KINGSTON SPRINGS, TENN.

LOCATION.—Staff gage just above highway bridge on State highway 1, 2 miles northeast of Kingston Springs, Cheatham County, and 3 miles below mouth of Turnbull Creek. Zero of gage is 447.81 feet above mean sea level.

DRAINAGE AREA.—687 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,760 second-feet Mar. 28 (gage height, 11.30 feet); minimum, 20 second-feet Sept. 24 (gage height, 0.26 foot).

1925–1931: Maximum discharge, about 32,500 second-feet Mar. 13, 1927 (gage height, about 28.0 feet); minimum discharge, 18 second-feet Sept. 9, 10, 1925; minimum gage height, that of Sept. 24, 1931.

REMARKS.—Records fair. Discharge estimated Sept. 15. Slight regulation during low-water season caused by operation of mill dam at Newsom, 15 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	64	79	342	182	5,320	5,200	620	107	48	37	36
2	43	61	89	300	170	2,830	3,010	740	100	57	36	38
3	45	51	86	280	157	2,120	2,290	710	89	115	35	48
4	45	45	86	244	150	1,640	1,880	592	92	211	36	47
5	45	47	92	280	141	1,340	865	538	84	485	74	57
6	43	51	182	930	132	1,200	680	485	77	148	244	46
7	41	51	710	930	128	2,650	435	485	86	104	124	42
8	45	47	485	995	132	2,830	365	510	84	80	96	36
9	64	50	342	1,200	770	1,800	342	410	72	69	146	36
10	47	104	280	865	1,130	1,480	680	410	67	60	69	33
11	45	244	228	680	800	1,130	740	435	69	54	46	30
12	60	342	196	710	510	930	650	435	60	48	44	31
13	53	262	170	620	485	832	538	388	63	44	44	31
14	46	228	157	592	2,120	710	485	300	60	40	41	27
15	43	620	155	620	1,640	592	460	262	75	42	37	31
16	43	1,060	157	620	995	592	435	244	69	63	36	35
17	53	510	155	460	1,200	538	410	211	66	51	40	32
18	46	388	170	410	1,880	510	1,130	196	60	42	38	29
19	51	300	170	388	1,480	460	1,640	182	54	38	86	28
20	74	228	170	342	1,340	435	538	170	50	38	69	28
21	71	170	244	342	1,060	435	538	170	47	740	155	26
22	55	152	211	320	995	485	2,120	182	46	300	113	22
23	54	128	170	300	865	710	2,040	155	111	342	69	21
24	61	124	196	280	832	592	1,200	146	228	146	57	20
25	61	115	435	280	3,600	510	1,200	132	388	92	46	21
26	53	104	710	244	3,500	460	1,640	132	182	74	196	23
27	50	92	1,340	262	1,800	538	1,640	132	150	60	86	21
28	53	92	1,200	262	1,960	9,640	1,480	115	111	51	64	23
29	57	86	1,130	228	-------	4,430	1,200	107	74	54	54	23
30	64	86	538	196	-------	2,830	740	100	55	44	45	23
31	71	-------	435	182	-------	2,290	-------	104	-------	40	42	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	74	41	52.5	0.076	0.09
November	1,060	45	197	.287	.32
December	1,340	79	347	.505	.58
January	1,200	182	474	.690	.80
February	3,600	128	1,080	1.57	1.64
March	9,640	435	1,710	2.49	2.87
April	5,200	342	1,220	1.78	1.99
May	740	100	316	.460	.53
June	388	46	95.9	.140	.16
July	740	38	122	.178	.21
August	244	35	74.4	.108	.12
September	57	20	31.5	.046	.05
The year	9,640	20	472	.687	9.36

RED RIVER NEAR ADAMS, TENN.

LOCATION.—Water-stage recorder at site of former highway bridge half a mile below mouth of Elk Creek and 1½ miles northwest of Adams, Robertson County. Zero of gage is 398.34 feet above mean sea level.

DRAINAGE AREA.—678 square miles.

RECORDS AVAILABLE.—June, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,410 second-feet Mar. 28 (gage height, 7.07 feet); minimum, 34 second-feet Oct. 1, 7 (gage height, 1.48 feet). 1920–1931: Maximum discharge, about 20,800 second-feet Dec. 22, 1926 (gage height, 31.0 feet); minimum, 23 second-feet Sept. 10, 1925 (gage height, 1.28 feet).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	59	55	106	64	1,070	1,140	633	142	148	75	198
2	36	48	50	90	59	1,780	1,390	579	135	145	68	184
3	36	44	44	68	50	1,350	1,180	533	129	230	66	241
4	37	42	46	82	53	1,040	1,040	478	120	930	256	245
5	37	42	53	70	51	852	898	440	109	609	382	198
6	36	44	55	75	48	681	806	410	123	256	484	171
7	34	44	55	66	48	852	717	390	220	195	456	142
8	51	46	57	95	55	2,840	651	368	279	174	330	126
9	85	48	68	90	126	2,060	603	350	212	142	245	118
10	87	46	75	100	330	1,460	567	359	178	129	198	103
11	82	62	85	123	382	1,180	573	354	145	106	158	95
12	70	59	66	120	271	965	609	330	132	98	145	98
13	51	66	55	106	238	826	511	326	123	90	123	93
14	51	66	59	118	249	748	456	318	126	85	112	80
15	48	66	57	106	425	669	425	298	123	191	132	103
16	50	64	57	103	364	585	390	287	112	171	118	95
17	55	70	50	109	368	528	368	252	115	118	129	85
18	55	62	55	103	538	478	359	238	106	106	106	75
19	46	62	50	87	567	450	334	230	100	90	126	70
20	46	70	48	80	462	415	322	212	100	115	120	70
21	51	68	50	112	390	386	334	198	100	314	115	62
22	44	59	42	93	342	364	780	191	161	462	154	59
23	50	55	41	85	306	350	1,100	181	462	302	135	53
24	51	51	44	95	290	342	742	174	1,390	205	106	112
25	48	55	44	82	322	322	627	178	627	171	82	245
26	62	50	62	85	651	306	930	174	395	151	252	148
27	50	51	80	59	693	314	1,640	174	306	126	699	126
28	51	55	73	70	609	1,780	1,040	171	234	115	364	112
29	62	50	95	70	-------	2,490	839	151	202	103	484	100
30	46	55	109	64	-------	1,420	711	148	171	98	338	100
31	51	-------	95	53	-------	1,100	-------	151	-------	87	249	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	87	34	51.4	0.076	0.09
November	70	42	55.3	.082	.09
December	109	41	60.5	.089	.10
January	123	53	89.2	.132	.15
February	693	48	298	.440	.46
March	2,840	306	968	1.43	1.65
April	1,640	322	736	1.09	1.22
May	633	148	299	.441	.51
June	1,390	100	229	.338	.38
July	930	85	202	.298	.34
August	699	66	220	.324	.37
September	245	53	124	.183	.20
The year	2,840	34	277	.409	5.56

TENNESSEE RIVER BASIN

FRENCH BROAD RIVER AT CALVERT, N. C.

LOCATION.—Staff gage at township bridge 1 mile downstream from mouth of East Fork and 1 mile southeast of railroad station at Calvert, Transylvania County.

DRAINAGE AREA.—104 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,460 second-feet Apr. 22 (gage height, 7.00 feet); minimum, 83 second-feet several times in October and November (gage height, 0.50 foot).

1924–1931: Maximum discharge (estimated), 16,100 second-feet Aug. 15, 1928 (gage height, 13.00 feet); minimum, 54 second-feet Sept. 17–23, 1925 (gage height, 0.28 foot).

Maximum stage known, 18.3 feet July, 1916.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	105	92	191	197	185	373	745	450	254	160	170	132
2	101	85	154	188	185	323	580	475	246	165	154	124
3	101	83	146	197	179	292	634	424	238	136	144	149
4	97	92	144	197	179	300	1,040	398	234	197	146	139
5	97	97	203	1,730	173	282	802	398	224	323	139	134
6	96	94	1,180	662	168	266	662	475	217	194	188	132
7	94	90	554	424	162	323	607	527	234	162	318	127
8	120	87	373	398	157	424	527	554	228	146	173	122
9	118	87	292	348	314	348	475	475	214	206	160	118
10	109	90	258	300	278	310	450	450	206	170	149	116
11	129	88	238	282	188	296	398	424	200	160	154	112
12	99	149	220	323	185	282	398	398	194	144	238	109
13	99	168	206	318	179	274	373	398	203	144	182	107
14	97	141	197	282	173	266	373	373	224	191	179	105
15	97	766	191	270	168	258	348	348	250	206	254	105
16	97	740	179	266	160	250	348	348	220	160	220	101
17	94	580	185	262	424	238	398	323	200	154	231	101
18	90	501	197	270	287	231	373	318	191	188	220	101
19	90	305	188	262	220	224	373	305	191	266	203	97
20	90	250	176	246	210	220	373	348	188	197	231	112
21	90	210	173	231	203	217	373	348	194	203	242	103
22	87	188	179	217	197	292	3,040	314	194	182	242	99
23	87	179	188	217	197	300	920	296	200	162	194	97
24	87	165	194	210	197	278	689	287	173	149	185	96
25	85	157	228	206	398	270	634	266	168	139	176	94
26	83	151	292	203	270	258	580	398	162	129	168	114
27	83	188	373	203	250	310	527	296	162	157	157	116
28	85	173	278	197	348	1,180	475	287	160	151	151	109
29	136	160	258	194	-------	920	475	274	154	151	157	101
30	120	203	217	191	-------	501	450	262	182	151	149	88
31	101	-------	197	185	-------	373	-------	258	-------	134	139	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	136	83	98.8	0.950	1.10
November	766	83	212	2.04	2.28
December	1,180	144	260	2.50	2.88
January	1,730	185	312	3.00	3.46
February	424	157	223	2.14	2.23
March	1,180	217	344	3.31	3.82
April	3,040	348	615	5.91	6.59
May	554	258	371	3.57	4.12
June	254	154	204	1.96	2.19
July	323	129	173	1.66	1.91
August	318	139	188	1.81	2.09
September	149	88	112	1.08	1.20
The year	3,040	83	259	2.49	33.87

FRENCH BROAD RIVER AT BLANTYRE, N. C.

LOCATION.—Water-stage recorder at highway bridge 700 feet east of Blantyre railroad station, Transylvania County, and 3 miles downstream from mouth of Little River.

DRAINAGE AREA.—296 square miles.

RECORDS AVAILABLE.—December, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,960 second-feet Apr. 22 (gage height, 13.9 feet); minimum, 242 second-feet Sept. 29, 30 (gage height, 2.66 feet).

1920–1931: Maximum discharge (estimated), 26,500 second-feet Aug. 16, 1928 (gage height, 22.9 feet); minimum, 143 second-feet Sept. 21, 1925 (gage height, 1.83 feet).

REMARKS.—Records excellent except those for estimated periods, Dec. 26 to Jan. 2, Feb. 15–20, Mar. 15–21, May 4–6, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	345	242	602	640	509	1,470	2,520	1,030	626	423	423	345
2	327	258	487	600	487	1,090	2,080	1,090	602	403	444	364
3	309	275	423	578	487	1,210	1,590	1,060	602	383	403	423
4	309	275	423	555	487	832	2,090	980	578	363	383	444
5	292	292	585	2,230	465	752	2,650	940	578	487	383	364
6	292	292	3,310	2,130	465	700	1,980	1,200	555	578	509	345
7	275	275	2,300	1,270	465	700	1,660	1,450	555	444	650	327
8	292	275	1,210	1,060	465	1,130	1,420	1,840	602	383	602	327
9	345	258	942	942	509	1,030	1,270	1,360	532	364	509	309
10	327	258	805	859	626	859	1,180	1,210	509	509	423	309
11	345	258	726	805	509	805	1,120	1,090	509	403	444	309
12	327	309	650	832	487	752	1,060	1,030	555	383	532	292
13	292	509	626	859	465	700	1,000	971	578	383	675	275
14	292	383	578	752	700	675	942	942	555	465	465	275
15	292	892	555	700	600	660	914	1,180	650	465	465	292
16	309	1,710	532	650	560	640	886	832	626	465	555	292
17	292	2,100	532	675	900	620	859	805	532	403	602	292
18	275	1,730	532	675	740	600	942	805	487	383	726	275
19	258	1,030	532	726	640	580	1,060	778	465	383	555	275
20	258	805	509	700	600	560	1,000	778	465	465	678	275
21	258	700	465	650	578	550	1,150	914	509	423	778	275
22	258	602	465	602	555	675	3,020	805	626	423	778	258
23	258	555	444	602	532	752	3,630	778	487	383	778	258
24	275	509	423	578	509	805	2,070	726	487	364	602	258
25	275	487	423	555	760	805	1,620	700	444	444	509	258
26	258	444	1,180	555	805	752	1,450	726	465	423	465	258
27	258	423	1,410	555	675	778	1,330	942	444	532	423	275
28	258	403	1,000	532	712	1,920	1,210	752	403	423	403	258
29	309	403	840	532	-------	2,850	1,150	700	403	423	383	242
30	309	423	740	509	-------	1,620	1,090	650	444	403	383	242
31	275	-------	680	509	-------	1,390	-------	626	-------	383	364	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	345	258	292	0.986	1.14
November	2,100	242	579	1.96	2.19
December	3,310	423	804	2.72	3.14
January	2,230	509	788	2.66	3.07
February	900	465	582	1.97	2.05
March	2,850	550	944	3.19	3.68
April	3,630	859	1,530	5.17	5.77
May	1,840	626	958	3.24	3.74
June	650	403	529	1.79	2.00
July	578	364	425	1.44	1.66
August	778	364	526	1.78	2.05
September	444	242	300	1.01	1.13
The year	3,630	242	688	2.32	31.62

FRENCH BROAD RIVER AT ASHEVILLE, N. C.

LOCATION.—Water-stage recorder at Bingham School Bridge, 2¼ miles downstream from Southern Railway station at Asheville, Buncombe County.

DRAINAGE AREA.—949 square miles.

RECORDS AVAILABLE.—September, 1895, to December, 1901; October, 1922, to September, 1931. January, 1905, to September, 1922, at Smith Bridge, 1½ miles upstream.

EXTREMES.—Maximum discharge during year, 7,010 second-feet Apr. 22 (gage height, 4.31 feet); minimum, 435 second-feet Sept. 30 (gage height, 0.44 foot).

1895–1901; 1905–1931: Maximum discharge (estimated), 110,000 second-feet July 16, 1916 (gage height, 23.1 feet); minimum, 239 second-feet at times in August and September, 1925 (gage height, 0.16 foot).

REMARKS.—Records good. Slight diversion for water supply from tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	700	536	1,040	1,220	975	2,060	4,170	2,040	1,340	860	700	700
2	650	520	1,100	1,100	975	2,190	4,170	2,040	1,280	805	750	750
3	641	520	975	1,100	975	1,750	3,210	2,040	1,160	750	918	1,100
4	614	569	860	1,160	918	1,540	4,580	1,900	1,100	750	805	1,100
5	596	700	918	3,140	918	1,410	5,640	1,900	1,100	1,040	750	918
6	578	650	3,770	5,200	918	1,340	4,570	2,040	1,100	1,540	975	750
7	560	596	5,200	3,030	918	1,280	3,770	2,870	1,100	1,160	1,410	700
8	587	569	3,580	2,510	918	1,900	3,210	4,170	1,100	860	1,160	650
9	623	569	1,900	2,040	975	2,040	2,680	3,030	1,100	860	1,100	632
10	641	569	1,540	1,900	1,100	1,680	2,510	2,510	975	918	805	623
11	614	578	1,340	1,750	1,040	1,480	2,350	2,350	975	918	860	596
12	614	632	1,280	1,680	918	1,410	2,190	2,080	918	750	1,110	569
13	587	918	1,160	1,750	918	1,340	2,040	2,040	1,100	700	1,220	552
14	569	918	1,160	1,610	1,040	1,280	2,040	1,900	1,040	860	918	520
15	569	1,100	1,040	1,480	1,160	1,280	1,900	1,750	1,430	1,040	918	520
16	569	2,510	1,040	1,280	1,040	1,220	1,750	1,680	1,340	860	1,040	528
17	560	3,970	1,040	1,340	1,100	1,160	1,750	1,610	1,100	860	1,040	512
18	536	3,210	1,100	1,340	1,540	1,100	1,750	1,540	975	750	1,100	504
19	536	2,190	1,100	1,410	1,340	1,100	1,900	1,540	918	750	1,100	496
20	536	1,610	1,040	1,410	1,220	1,100	1,900	1,540	860	750	1,100	504
21	528	1,340	975	1,280	1,100	1,040	1,900	1,680	860	860	1,900	520
22	528	1,160	918	1,220	1,040	1,220	4,520	1,610	1,040	918	1,900	496
23	528	1,100	918	1,160	1,040	1,540	6,090	1,480	1,040	805	1,680	488
24	536	975	975	1,160	975	1,610	6,090	1,410	975	975	1,340	520
25	536	918	918	1,100	1,160	1,610	3,390	1,340	975	918	1,100	480
26	528	918	1,220	1,100	1,540	1,480	2,850	1,340	860	1,100	1,040	458
27	520	805	2,860	1,100	1,340	1,410	2,680	1,680	860	918	975	465
28	512	750	2,040	1,100	1,220	2,470	2,350	1,480	805	975	975	472
29	544	750	1,610	1,040	-------	4,990	2,190	1,340	750	805	918	442
30	605	805	1,480	1,040	-------	3,580	2,040	1,280	750	805	860	442
31	578	-------	1,280	975	-------	2,510	-------	1,220	-------	750	805	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	700	512	575	0.606	0.70
November	3,970	520	1,100	1.16	1.29
December	5,200	860	1,530	1.61	1.86
January	5,200	975	1,610	1.69	1.95
February	1,540	918	1,080	1.14	1.19
March	4,990	1,040	1,710	1.80	2.08
April	6,090	1,750	3,070	3.23	3.60
May	4,170	1,220	1,880	1.98	2.28
June	1,430	750	1,030	1.09	1.22
July	1,540	700	891	.939	1.08
August	1,900	700	1,070	1.13	1.30
September	1,100	442	600	.632	.71
The year	6,090	442	1,350	1.42	19.27

FRENCH BROAD RIVER NEAR NEWPORT, TENN.

LOCATION.—Water-stage recorder at highway bridge at Oldtown, on Newport-Morristown Road, 2½ miles northeast of Newport, Cocke County, and 4 miles above mouth of Pigeon River. Zero of gage is 1,012.89 feet above mean sea level.

DRAINAGE AREA.—1,860 square miles.

RECORDS AVAILABLE.—September, 1900, to November, 1901; November, 1902, to December, 1905; August to December, 1907; November, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 17,500 second-feet Sept. 3 (gage height, 6.80 feet); minimum, 570 second-feet Sept. 24 (gage height, 1.41 feet).

1900–1905; 1907; 1920–1931: Maximum discharge, about 62,200 second-feet Apr. 8, 1903 (gage height, 12.0 feet); minimum, 210 second-feet Sept. 9, 1925.

REMARKS.—Records good. Diurnal fluctuation during low water caused by operation of water-power plants above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	938	830	1,430	1,750	1,360	1,790	4,430	2,940	2,000	950	1,330	1,300
2	890	748	1,690	1,670	1,330	2,860	6,950	2,830	1,910	974	1,150	1,160
3	830	715	1,570	1,650	1,300	2,520	5,500	2,780	1,690	1,200	1,210	5,500
4	818	737	1,350	1,560	1,300	2,150	9,290	2,620	1,570	1,320	1,380	5,970
5	818	914	1,280	2,880	1,270	1,980	12,200	2,520	1,480	1,850	1,960	2,990
6	794	1,040	1,350	8,350	1,270	1,830	11,000	2,600	1,460	2,600	1,960	2,060
7	770	962	6,130	5,970	1,260	1,730	8,910	3,260	1,440	2,060	2,650	1,610
8	770	878	4,730	4,000	1,240	1,750	6,950	5,650	1,480	1,460	2,170	1,300
9	950	830	2,910	3,310	1,280	2,520	5,500	5,030	1,460	1,120	1,930	1,220
10	890	830	2,280	2,910	1,460	2,280	4,580	4,000	1,430	1,350	1,650	1,120
11	902	818	2,000	2,600	1,540	2,040	4,730	3,440	1,300	1,150	1,300	1,110
12	854	866	1,850	2,420	1,410	1,830	4,140	3,090	1,260	1,160	1,300	986
13	830	1,210	1,690	2,400	1,330	1,730	3,580	3,010	1,270	986	2,170	962
14	794	1,460	1,590	2,450	1,980	1,710	3,260	2,780	1,500	1,080	1,710	866
15	748	1,440	1,520	2,170	2,080	1,690	2,990	2,550	1,460	1,220	1,300	842
16	770	2,240	1,400	2,000	1,980	1,730	2,730	2,400	1,930	1,400	1,220	806
17	748	4,880	1,360	2,060	1,690	1,650	2,600	2,240	1,590	1,220	1,300	830
18	726	4,430	1,360	2,000	1,830	1,560	2,500	2,240	1,360	1,460	1,240	794
19	726	3,580	1,430	1,930	2,210	1,520	2,520	2,240	1,240	2,910	1,330	818
20	682	2,550	1,440	2,040	2,000	1,480	2,680	2,130	1,140	1,560	2,060	830
21	682	1,980	1,350	1,960	1,770	1,460	2,500	2,330	1,120	1,850	3,860	890
22	671	1,710	1,300	1,790	1,630	1,540	7,820	2,470	1,150	2,910	5,030	854
23	704	1,520	1,320	1,690	1,560	1,890	11,000	2,300	1,560	1,770	5,340	770
24	782	1,430	1,210	1,650	1,480	2,190	8,170	2,080	1,360	2,060	3,200	693
25	782	1,360	1,050	1,590	1,590	2,280	5,500	2,040	1,270	1,610	2,280	726
26	737	1,320	1,280	1,560	1,830	2,150	4,730	1,980	1,300	1,500	1,810	759
27	726	1,210	3,200	1,540	2,080	2,000	4,280	1,930	1,120	2,700	1,730	759
28	726	1,110	3,440	1,560	1,810	2,150	3,860	2,240	1,110	1,520	1,610	715
29	854	1,070	2,570	1,540	------	4,730	3,310	2,000	998	1,440	2,150	704
30	962	1,180	2,240	1,440	------	5,650	3,090	1,810	938	1,150	2,080	660
31	902	------	1,850	1,400	------	3,860	------	1,790	------	1,300	1,560	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	962	671	799	0.430	0.50
November	4,880	715	1,530	.823	.92
December	6,130	1,050	1,970	1.06	1.22
January	8,350	1,400	2,380	1.28	1.48
February	2,210	1,240	1,600	.860	.90
March	5,650	1,460	2,200	1.18	1.36
April	12,200	2,500	5,380	2.89	3.22
May	5,650	1,790	2,690	1.45	1.67
June	2,000	938	1,400	.753	.84
July	2,910	950	1,580	.849	.98
August	5,340	1,150	2,030	1.09	1.26
September	5,970	660	1,350	.726	.81
The year	12,200	660	2,080	1.12	15.16

FRENCH BROAD RIVER AT DANDRIDGE, TENN.

LOCATION.—Staff gage and water-stage recorder at highway bridge at Dandridge, Jefferson County. Zero of both gages is 902.83 feet above mean sea level.
DRAINAGE AREA.—4,450 square miles.
RECORDS AVAILABLE.—October, 1918, to September, 1931.
EXTREMES.—Maximum discharge during year, about 34,300 second-feet Apr. 5 (gage height, 9.4 feet); minimum, 950 second-feet Oct. 21 (gage height, −0.2 foot).

1918–1931: Maximum gage height, 18.7 feet Apr. 2, 1920 (discharge not determined); minimum discharge, 360 second-feet Sept. 9, 10, 1925 (gage height, −0.6 foot).

Maximum stage known, 28.0 feet May 21, 1901.

REMARKS.—Records fair. Water-stage recorder used June 19–23, July 7–21, Aug. 14 to Sept. 24. Diurnal fluctuation during low stages caused by regulation upstream. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,400	1,800	2,190	3,760	2,830	4,270	7,460	7,150	6,840	2,400	3,760	3,880
2	2,400	1,620	3,760	3,520	2,190	3,280	10,100	6,840	9,390	2,400	3,520	3,520
3	2,190	1,800	3,760	3,520	2,830	5,940	12,100	6,240	6,540	2,400	2,830	6,240
4	2,400	1,620	4,010	3,280	3,280	5,360	11,800	5,360	5,650	3,050	4,010	15,400
5	1,800	1,520	3,760	2,830	3,280	5,080	34,300	6,540	4,800	3,280	4,530	9,390
6	1,440	1,990	3,760	7,770	3,280	4,530	30,300	6,240	4,530	2,830	5,940	5,940
7	1,620	2,190	3,050	11,100	3,280	4,270	26,900	6,240	4,270	4,800	5,360	4,270
8	1,620	1,990	6,540	9,720	2,830	4,270	19,600	7,460	3,520	3,880	6,840	4,010
9	1,990	1,800	5,360	7,770	2,400	4,270	15,800	7,460	4,800	3,280	5,360	3,760
10	2,190	1,800	4,800	6,840	3,760	5,360	13,200	8,730	4,530	3,520	4,010	3,520
11	1,620	1,620	4,800	5,940	4,010	4,800	11,800	7,150	4,270	3,050	5,080	3,280
12	1,620	1,620	4,270	4,800	4,010	4,530	12,100	7,460	3,760	2,610	4,010	3,160
13	1,620	1,620	4,010	5,940	4,010	4,270	9,720	7,150	3,520	1,990	5,080	2,700
14	1,270	2,830	3,280	5,940	5,360	4,270	9,060	6,840	3,280	2,810	4,940	1,990
15	1,990	3,280	2,830	5,650	6,240	3,520	8,090	6,240	2,830	3,400	4,140	2,630
16	1,800	2,830	3,760	5,080	4,800	3,050	7,770	5,940	4,530	3,400	3,160	2,810
17	1,270	3,760	4,010	4,530	4,800	4,010	7,150	5,360	5,080	3,400	2,830	2,740
18	1,440	6,840	3,760	4,010	4,530	4,270	7,150	4,010	4,010	3,280	3,520	2,790
19	1,440	7,150	3,520	4,530	5,360	4,010	6,240	5,650	3,160	4,940	3,280	2,700
20	1,440	5,940	3,520	3,280	5,080	3,760	5,360	5,940	2,940	3,280	4,940	2,480
21	950	4,800	3,050	5,650	5,080	3,520	6,840	6,540	2,650	4,530	7,930	1,840
22	1,620	4,270	2,400	5,080	4,010	3,280	7,460	5,940	2,070	10,700	9,060	2,190
23	1,990	3,280	3,280	4,530	3,050	2,830	21,200	6,540	3,160	8,090	11,100	1,820
24	2,190	2,610	3,280	4,270	4,270	4,010	18,800	5,650	3,520	6,240	8,730	1,820
25	2,190	3,520	2,830	3,520	4,530	4,530	13,600	5,080	3,280	5,940	6,390	1,620
26	1,620	3,760	2,190	2,830	6,540	4,530	10,700	5,650	3,050	5,360	5,080	1,620
27	1,440	3,760	3,050	4,270	5,940	4,530	11,400	5,650	3,050	4,270	4,530	1,440
28	1,110	2,400	5,650	4,270	5,360	4,270	10,100	5,650	2,610	3,520	4,140	1,800
29	1,800	3,280	4,530	4,010	-------	5,360	8,730	5,650	2,190	5,080	4,270	1,800
30	1,990	3,050	4,270	3,760	-------	8,730	8,090	5,360	2,190	4,530	4,660	1,990
31	1,990	-------	4,010	3,520	-------	9,060	-------	4,800	-------	3,520	3,760	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,400	950	1,760	0.396	0.46
November	7,150	1,620	3,020	.679	.76
December	6,540	2,190	3,780	.849	.98
January	11,100	2,830	5,020	1.13	1.30
February	6,540	2,190	4,180	.939	.98
March	9,060	2,830	4,570	1.03	1.19
April	34,300	5,360	12,800	2.88	3.21
May	8,730	4,010	6,210	1.40	1.61
June	9,390	2,070	4,000	.899	1.00
July	10,700	1,990	4,060	.912	1.05
August	11,100	2,830	5,060	1.14	1.31
September	15,400	1,440	3,500	.787	.88
The year	34,300	950	4,820	1.08	14.73

TENNESSEE RIVER AT KNOXVILLE, TENN.

LOCATION.—Water-stage recorder at old pumping plant of city of Knoxville, half a mile above Gay Street Bridge, in Knoxville, Knox County. Zero of gage is 797.59 feet above mean sea level.

DRAINAGE AREA.—8,990 square miles.

RECORDS AVAILABLE.—January, 1899, to December, 1912; October, 1918, to September, 1931.

EXTREMES.—Maximum discharge during year, 75,700 second-feet Apr. 6 (gage height, 15.2 feet); minimum, 2,180 second-feet Oct. 22 (gage height, −0.72 foot).

1899–1912; 1918–1931: Maximum discharge, about 195,000 second-feet Mar. 1, 1902 (gage height, 36.4 feet); minimum, 1,390 second-feet Sept. 11, 1925 (gage height, −1.7 feet).

Maximum stage known, 44.4 feet Mar. 10, 1867.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,240	3,160	4,010	7,380	5,700	7,560	15,200	13,600	11,100	4,190	7,750	6,860
2	3,080	3,000	3,830	6,700	5,230	6,860	15,200	12,100	14,600	4,190	7,380	6,540
3	2,920	3,080	5,120	5,700	4,680	7,560	19,200	11,400	15,700	4,190	7,200	7,380
4	3,000	2,850	5,340	5,830	5,460	7,940	32,600	10,600	12,400	5,580	7,560	16,200
5	2,920	2,780	5,230	5,960	5,580	7,560	59,100	10,900	10,100	8,550	8,760	16,700
6	2,560	2,920	5,580	9,660	5,460	7,200	73,700	10,400	10,100	8,760	10,400	13,100
7	2,500	3,240	5,230	18,200	5,230	6,860	61,200	10,600	8,140	9,660	10,400	9,200
8	2,700	3,240	8,760	20,800	5,010	6,700	44,500	12,100	7,940	9,430	13,100	7,750
9	3,000	3,240	8,980	15,700	5,340	6,240	36,200	15,700	7,560	8,550	12,400	6,860
10	3,000	3,400	8,550	12,600	6,100	6,700	31,500	16,700	7,560	8,140	9,660	6,240
11	3,080	3,000	7,750	10,400	6,700	7,560	28,400	14,600	7,200	7,380	8,980	5,830
12	2,780	3,240	7,030	9,430	6,860	7,200	27,900	14,100	6,700	6,700	7,940	5,460
13	2,630	3,400	6,540	9,200	7,030	6,700	23,300	12,900	6,540	5,700	8,980	5,120
14	2,500	3,740	5,700	9,200	10,600	6,540	19,200	12,400	6,390	4,790	9,900	4,580
15	2,630	4,680	5,340	8,980	14,100	6,390	16,200	11,600	5,830	5,460	9,430	3,740
16	3,000	6,390	4,680	8,140	13,600	6,100	14,100	10,900	5,960	6,100	7,560	4,480
17	2,700	7,030	5,580	7,560	11,600	5,580	13,100	10,100	8,140	6,240	6,240	4,480
18	2,560	9,430	5,460	7,200	11,100	6,540	12,100	9,200	7,380	6,240	5,960	4,380
19	2,700	9,660	5,340	7,750	11,100	6,540	11,100	9,430	6,240	5,960	5,960	4,580
20	2,560	8,980	5,580	9,660	11,400	6,390	10,400	9,900	5,580	7,940	6,540	4,380
21	2,360	7,380	5,340	9,660	10,600	6,240	10,900	12,400	5,230	7,030	10,400	4,100
22	2,300	6,390	4,900	8,550	9,660	6,240	14,600	11,400	4,680	14,100	13,100	3,400
23	2,780	5,700	4,480	7,940	8,340	5,960	26,400	12,600	4,280	13,600	18,200	3,580
24	2,920	4,900	5,340	7,380	7,750	5,960	34,700	12,100	5,460	13,100	18,700	3,240
25	3,000	4,100	5,010	6,860	7,940	7,200	28,900	12,600	5,460	16,200	14,100	3,490
26	3,000	4,900	4,680	6,100	9,660	7,200	23,800	12,400	5,830	14,100	10,900	3,490
27	2,630	5,010	4,680	5,960	8,980	7,030	21,800	11,100	5,700	13,600	8,980	3,160
28	2,560	4,580	7,200	6,540	8,340	8,760	20,800	12,400	5,010	12,100	8,140	3,320
29	2,700	3,920	10,600	6,390	-------	11,400	17,200	12,100	4,580	10,600	8,140	2,920
30	3,240	4,580	8,980	6,240	-------	14,100	15,200	10,400	3,830	9,200	8,980	4,010
31	3,490	-------	8,140	6,100	-------	17,700	-------	9,660	-------	7,750	7,560	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,490	2,300	2,810	0.313	0.36
November	9,660	2,780	4,730	.526	.59
December	10,600	3,830	6,100	.679	.78
January	20,800	5,700	8,830	.982	1.13
February	14,100	4,680	8,180	.910	.95
March	17,700	5,580	7,560	.841	.97
April	73,700	10,400	26,000	2.89	3.22
May	16,700	9,200	11,900	1.32	1.52
June	15,700	3,830	7,370	.820	.91
July	16,200	4,190	8,550	.951	1.10
August	18,700	5,960	9,650	1.07	1.23
September	16,700	2,920	5,950	.662	.74
The year	73,700	2,300	8,950	.996	13.50

TENNESSEE RIVER AT LOUDON, TENN.

LOCATION.—Water-stage recorder at highway bridge at Loudon, Loudon County. Zero of gage is 726.15 feet above mean sea level.

DRAINAGE AREA.—12,300 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 93,500 second-feet Apr. 7 (gage height, 15.55 feet); minimum, 3,940 second-feet Oct. 22, 23 (gage height, 2.37 feet).

1922–1931: Maximum discharge, about 126,000 second-feet Mar. 24, 1929 (gage height, at Huffs Ferry, 21.5 feet); minimum, 2,190 second-feet Sept. 12, 1925 (gage height, at Huffs Ferry, 0.82 foot).

REMARKS.—Records excellent except those for May 18 to June 11, Aug. 8–14, Sept. 23–30, which are based on daily staff-gage readings and are good. Low-water flow affected by power regulation and storage on Little Tennessee and Cheoah Rivers.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,580	5,580	6,620	10,800	8,920	12,200	26,200	21,700	15,500	6,620	10,200	10,200
2	5,580	4,870	7,060	10,500	8,670	11,900	28,900	20,400	17,900	7,060	10,800	9,690
3	5,580	4,710	6,840	9,170	8,190	10,800	28,200	19,200	18,500	6,840	10,500	10,500
4	5,380	4,980	7,730	8,670	8,190	12,200	42,800	17,900	19,200	7,730	10,800	17,300
5	5,380	4,600	7,960	8,920	8,430	11,900	81,500	17,300	15,500	9,690	10,800	23,000
6	4,870	4,640	8,670	13,400	8,190	11,100	87,500	17,300	14,200	13,100	13,100	18,500
7	4,910	4,750	11,100	23,000	7,730	10,800	86,000	17,900	14,200	13,400	15,200	14,200
8	4,710	4,950	10,800	27,600	7,730	10,200	62,000	19,800	11,300	13,400	15,500	10,800
9	5,140	4,980	12,800	23,600	7,500	10,800	49,300	21,700	11,300	11,900	17,300	9,960
10	5,780	4,980	12,200	18,500	9,960	9,690	41,400	26,200	10,800	11,900	16,100	9,430
11	5,580	5,140	11,100	16,100	9,690	10,800	37,800	23,000	10,200	10,200	12,500	8,920
12	5,100	4,790	10,200	15,200	10,200	10,800	37,100	21,000	10,200	9,960	13,100	8,430
13	4,790	5,990	9,960	15,500	10,500	10,200	32,300	19,800	9,170	8,430	11,900	8,190
14	4,750	6,620	9,170	15,200	15,500	9,960	27,600	18,500	10,200	8,190	13,600	7,500
15	4,710	6,410	8,430	14,800	24,900	9,690	23,600	18,500	9,690	7,500	13,400	7,060
16	4,520	10,800	7,730	12,500	21,700	9,960	21,700	17,300	9,170	8,430	11,600	6,620
17	5,020	17,300	7,730	11,300	18,500	9,170	19,800	16,700	11,100	8,920	9,690	7,060
18	4,830	15,200	8,430	10,200	19,200	9,170	18,500	16,100	11,300	9,430	8,670	7,060
19	4,560	15,500	8,190	10,800	19,200	9,960	19,200	15,500	9,690	8,670	8,920	6,840
20	4,560	14,000	8,190	12,500	18,500	9,690	18,500	16,700	9,170	9,960	9,430	7,060
21	4,520	11,600	8,190	13,600	17,300	9,690	17,300	17,300	8,190	10,800	11,900	6,840
22	4,120	9,960	7,500	12,800	16,100	9,960	25,600	19,800	7,960	20,400	15,500	6,620
23	4,230	8,920	7,060	11,600	14,600	9,690	44,200	17,900	7,280	21,700	19,800	5,990
24	5,380	7,730	7,060	10,800	13,100	10,200	45,700	17,300	7,730	16,100	23,000	5,990
25	5,060	6,840	7,280	10,200	12,800	10,500	41,400	16,100	8,190	19,800	19,800	5,990
26	4,980	6,620	7,500	9,690	13,600	11,600	33,700	16,700	8,190	17,900	15,500	6,410
27	4,830	6,840	9,170	9,170	14,800	11,600	32,300	16,100	8,430	17,900	13,400	5,580
28	4,560	7,060	9,430	9,430	13,400	15,200	29,600	16,100	8,190	16,100	11,600	5,180
29	4,640	6,200	13,600	9,430	-------	25,600	26,200	17,900	7,500	14,800	11,100	5,580
30	4,950	5,990	13,100	9,690	-------	23,000	23,600	16,100	7,280	13,400	12,800	5,580
31	5,580	-------	11,600	9,430	-------	24,900	-------	16,100	-------	12,200	11,900	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,780	4,120	4,970	0.404	0.47
November	17,300	4,600	7,620	.620	.69
December	13,600	6,620	9,110	.741	.85
January	27,600	8,670	13,000	1.06	1.22
February	24,900	7,500	13,100	1.07	1.11
March	25,600	9,170	12,000	.976	1.13
April	87,500	17,300	37,000	3.01	3.36
May	26,200	15,500	18,400	1.50	1.73
June	19,200	7,280	10,900	.886	.99
July	21,700	6,620	12,000	.976	1.13
August	23,000	8,670	13,200	1.07	1.23
September	23,000	5,180	8,940	.727	.81
The year	87,500	4.120	13,300	1.08	14.72

TENNESSEE RIVER AT HALES BAR, NEAR CHATTANOOGA, TENN.

LOCATION.—Water-stage recorder just below Hales Bar Lock and Dam, 5 miles east of Jasper, Marion County, 6 miles above mouth of Sequatchie River, and 33 miles downstream from Chattanooga. Zero of gage is 588.63 feet above mean sea level.

DRAINAGE AREA.—22,000 square miles.

RECORDS AVAILABLE.—July, 1930, to September, 1931. April, 1874, to October, 1913, March, 1915, to June, 1930, at Chattanooga.

EXTREMES.—Maximum discharge during year, 125,000 second-feet Apr. 8 (gage height, 20.0 feet); minimum, 5,500 second-feet Oct. 26 (gage height, 1.50 feet), caused by regulation.

1874–1931: Maximum discharge, about 361,000 second-feet Mar. 1, 1875 (gage height, at Chattanooga, 54.0 feet); minimum (estimated), 3,300 second-feet Sept. 13, 1925.

REMARKS.—Records good. Flow regulated to some extent by operation of hydroelectric plant just above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,400	6,770	10,900	24,200	14,900	27,900	58,900	44,400	20,200	11,000	19,500	17,800
2	9,750	7,500	10,400	22,300	13,900	29,500	60,800	33,900	20,800	10,700	17,600	15,600
3	9,130	7,580	10,200	18,900	13,700	26,700	58,300	37,100	21,200	10,000	15,500	14,200
4	7,860	7,400	11,000	17,200	12,800	25,300	60,000	34,100	23,100	10,000	15,600	15,500
5	8,360	6,720	12,000	19,000	12,400	23,600	79,000	31,400	23,300	10,300	15,300	20,300
6	7,500	6,590	21,800	23,800	12,000	22,400	109,000	30,200	21,200	12,200	15,100	23,300
7	7,180	6,840	30,200	27,300	12,300	21,800	120,000	29,800	19,300	15,900	17,100	25,000
8	7,910	6,750	31,200	33,300	12,000	20,400	123,000	30,800	17,400	18,100	20,800	23,000
9	7,500	6,510	28,300	41,800	12,600	19,000	109,000	33,200	16,000	18,100	21,000	17,500
10	7,290	6,840	24,400	44,400	13,100	18,700	85,800	41,200	15,600	17,600	22,400	15,400
11	7,020	7,020	23,200	39,400	14,400	18,300	71,900	46,000	14,900	15,900	22,900	14,300
12	7,780	8,000	21,700	35,000	17,100	16,900	63,200	44,700	14,700	16,400	19,700	12,700
13	7,450	8,660	19,200	32,500	17,500	19,000	59,200	40,600	14,400	14,800	18,900	12,100
14	7,440	8,390	17,100	31,800	22,800	18,600	55,500	37,400	14,000	14,200	17,500	11,600
15	7,020	9,650	16,600	31,000	23,800	17,600	49,200	34,200	13,700	13,600	17,800	11,200
16	6,600	16,900	14,800	28,900	39,200	17,100	44,000	31,500	13,800	14,000	18,300	9,380
17	6,930	26,800	13,800	26,800	43,600	17,300	38,800	30,000	13,900	12,500	17,300	8,820
18	6,440	31,000	12,900	24,200	41,600	17,000	35,100	28,500	13,100	12,900	15,900	8,380
19	6,760	30,800	13,500	23,600	40,900	15,500	31,600	27,200	14,400	13,000	14,100	8,470
20	6,800	27,600	13,200	23,300	41,600	15,500	30,200	26,100	14,500	13,400	14,300	8,470
21	6,520	25,300	13,800	22,000	39,200	15,800	29,800	25,700	13,200	13,500	14,500	8,990
22	6,240	21,400	14,800	23,300	36,300	16,800	31,600	27,200	13,000	16,100	14,900	9,420
23	6,290	18,200	14,600	23,200	33,200	17,200	48,400	28,600	11,800	19,400	17,800	8,920
24	6,180	15,500	13,400	21,600	30,300	18,800	75,900	27,800	11,600	26,400	22,000	8,720
25	6,060	14,600	13,100	18,800	31,000	18,700	79,800	26,600	11,000	27,000	25,000	8,280
26	6,320	13,600	14,400	17,300	31,900	19,700	76,900	25,200	10,700	26,800	28,900	7,510
27	7,000	12,200	20,900	17,900	31,300	22,500	68,900	24,500	11,400	34,300	27,600	7,870
28	7,130	10,800	20,700	16,500	30,500	32,100	60,200	24,300	11,700	32,500	24,700	7,570
29	7,710	11,300	24,700	15,700	-------	57,600	54,600	23,500	11,700	29,400	20,200	7,780
30	7,650	11,700	24,000	16,600	-------	69,100	49,600	22,300	11,100	25,700	17,200	7,400
31	7,170	-------	24,500	13,800	-------	63,100	-------	22,000	-------	22,800	16,200	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,400	6,060	7,340	0.334	0.39
November	31,000	6,510	13,300	.605	.68
December	31,200	10,200	17,900	.814	.94
January	44,400	13,800	25,000	1.14	1.31
February	43,600	12,000	25,000	1.14	1.19
March	69,100	15,500	24,500	1.11	1.28
April	123,000	29,800	61,900	2.81	3.14
May	46,000	22,000	31,300	1.42	1.64
June	23,300	10,700	15,200	.691	.77
July	34,300	10,000	17,700	.805	.93
August	28,900	14,100	18,900	.859	.99
September	25,000	7,400	12,500	.568	.63
The year	123,000	6,060	22,700	1.03	13.89

TENNESSEE RIVER AT GUNTERSVILLE, ALA.

LOCATION.—Water-stage recorder at highway bridge at mouth of Big Spring Creek at Guntersville, Marshall County. Zero of gage is 546.85 feet above mean sea level.

DRAINAGE AREA.—24,200 square miles.

RECORDS AVAILABLE.—May, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 136,000 second-feet Apr. 9 (gage height, 22.5 feet); minimum, 7,020 second-feet Oct. 27 (gage height, 1.2 feet). 1930–31: Maximum discharge, that of Apr. 9, 1931; minimum, 7,020 second-feet Sept. 8, Oct. 27, 1930 (gage height, 1.2 feet).

REMARKS.—Records good. Discharge estimated Jan. 8–16, May 23–30, July 31 to Aug. 10.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,800	8,110	13,100	27,200	16,800	37,800	79,000	50,200	23,400	11,600	25,000	17,000
2	10,800	8,110	12,300	26,300	16,800	35,400	74,100	46,400	22,000	11,600	22,000	17,900
3	10,500	8,390	11,900	24,100	16,000	35,400	72,000	43,200	22,500	11,300	19,500	16,600
4	9,860	8,670	11,200	21,100	15,600	32,200	73,400	39,700	23,000	10,600	18,500	15,300
5	8,960	8,670	12,300	20,200	14,700	29,900	85,600	36,400	24,400	10,600	18,000	16,200
6	8,960	8,110	16,000	24,500	14,300	27,600	104,000	34,000	24,400	10,900	18,500	16,200
7	8,670	7,830	28,600	30,400	13,500	26,300	125,000	33,100	23,000	12,400	19,500	23,900
8	8,390	8,110	35,400	35,000	13,900	26,300	134,000	33,100	20,600	16,600	19,500	25,300
9	8,960	7,830	35,000	38,000	14,300	25,400	135,000	33,500	18,800	18,800	21,000	23,000
10	8,670	7,560	31,300	40,000	15,600	23,200	123,000	38,100	17,000	19,200	22,500	18,400
11	8,110	7,830	27,200	47,000	16,000	22,400	98,200	45,200	16,600	18,400	23,400	16,200
12	8,110	7,830	26,300	48,000	16,800	21,500	78,300	48,500	16,200	17,000	23,000	14,400
13	8,670	8,670	24,500	47,000	19,300	20,200	66,500	46,300	15,700	17,000	20,600	13,200
14	8,670	9,250	21,900	43,000	24,100	21,500	61,300	43,100	15,300	15,700	19,700	12,800
15	8,670	9,550	19,300	39,000	32,700	21,500	55,800	39,900	14,900	15,300	17,900	12,000
16	8,110	17,200	18,500	36,000	38,700	20,200	50,800	36,900	14,900	14,900	17,900	11,600
17	7,830	26,300	16,800	32,700	45,800	19,800	45,300	34,000	14,900	14,900	18,800	10,200
18	8,110	33,600	15,600	30,800	38,600	19,300	41,200	32,500	14,900	13,600	17,900	9,170
19	7,560	35,400	14,700	29,400	46,400	19,300	37,300	31,000	14,000	13,600	16,600	8,840
20	7,830	33,600	15,100	28,600	45,800	17,600	34,500	29,500	14,900	14,000	15,300	8,840
21	8,110	29,900	15,600	27,600	44,800	17,200	32,700	28,500	15,300	14,900	15,300	8,840
22	7,830	27,600	16,000	26,800	42,200	18,100	33,100	28,400	14,000	14,900	15,300	8,840
23	7,560	24,100	16,400	27,200	39,200	18,900	36,800	28,400	13,600	17,000	15,700	9,510
24	7,560	20,600	16,400	26,300	36,400	19,800	54,100	28,500	12,400	20,600	18,400	9,170
25	7,560	17,600	15,100	24,500	39,200	21,500	76,200	28,800	12,000	26,300	22,500	9,170
26	7,290	16,400	14,700	21,500	43,200	21,500	8,0400	28,000	11,600	26,800	25,800	8,840
27	7,290	15,100	17,600	20,200	43,200	22,800	77,600	27,000	11,300	28,200	28,700	7,870
28	8,110	13,900	24,500	20,200	40,200	33,600	69,200	26,200	11,600	34,200	27,700	8,030
29	8,670	12,300	25,000	19,300	-------	54,600	60,600	25,500	12,000	33,100	25,300	7,870
30	8,670	12,300	27,600	18,100	-------	77,600	54,600	25,000	12,400	29,700	21,100	7,870
31	8,670	-------	27,200	18,500	-------	83,300	-------	24,400	-------	28,000	17,900	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,800	7,290	8,500	0.351	0.40
November	35,400	7,560	15,300	.632	.71
December	35,400	11,200	20,100	.831	.96
January	48,000	18,100	29,600	1.22	1.41
February	48,600	13,500	29,100	1.20	1.25
March	83,300	17,200	28,800	1.19	1.37
April	135,000	32,700	71,700	2.96	3.30
May	50,200	24,400	34,600	1.43	1.65
June	24,400	11,300	16,600	.686	.77
July	34,200	10,600	18,100	.748	.86
August	28,700	15,300	20,300	.839	.97
September	25,300	7,870	13,100	.541	.60
The year	135,000	7,290	25,400	1.05	14.25

TENNESSEE RIVER AT DECATUR, ALA.

LOCATION.—Water-stage recorder at highway bridge at Decatur, Morgan County, 2,500 feet upstream from Louisville & Nashville Railroad bridge. Zero of gage is 534.06 feet above mean sea level.

DRAINAGE AREA.—26,300 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 127,000 second-feet Apr. 9 (gage height, 15.2 feet); minimum discharge, 7,080 second-feet Oct. 27; minimum gage height, 1.40 feet Oct. 7.

1924–1931: Maximum discharge, 283,000 second-feet Jan. 1, 1927 (gage height, 23.2 feet); minimum, 3,520 second-feet Aug. 19–24, Sept. 7–13, 19, 1925 (gage height, –0. 4 foot).

REMARKS.—Records good. Discharge estimated Dec. 20–27.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,500	8,800	11,100	26,700	18,600	45,600	90,500	56,300	25,000	12,600	27,800	19,200
2	10,500	8,550	11,400	27,400	17,200	42,200	87,200	52,700	23,600	12,600	25,000	18,600
3	10,200	8,080	10,800	26,000	17,200	40,500	82,900	50,900	23,000	12,400	21,700	19,200
4	9,780	8,300	10,000	23,900	16,600	38,100	82,900	45,800	22,400	12,200	19,200	18,000
5	9,320	8,800	9,800	21,800	16,000	34,900	89,400	42,400	23,600	11,900	18,000	16,900
6	9,320	8,800	12,000	23,900	15,200	31,900	99,400	40,000	25,000	11,400	18,000	18,000
7	8,420	8,300	19,800	28,900	14,600	29,600	114,000	36,800	24,300	11,400	19,800	22,400
8	8,650	7,850	31,200	33,400	14,200	29,600	123,000	36,000	23,000	12,600	19,800	25,600
9	8,650	7,620	35,700	38,900	14,600	29,600	127,000	36,000	20,400	16,900	21,000	26,400
10	9,320	7,620	34,200	46,500	15,200	28,200	123,000	37,600	19,200	19,200	23,000	23,600
11	8,420	7,620	31,200	50,100	16,600	25,300	109,000	45,800	17,400	19,200	23,600	19,200
12	8,420	7,850	26,700	49,200	17,200	23,900	90,000	50,900	16,900	18,000	25,000	16,900
13	8,200	7,850	26,000	46,500	18,600	22,500	75,400	51,800	16,400	16,900	24,300	15,200
14	8,650	8,800	23,200	43,900	22,500	21,800	68,400	48,400	15,800	16,900	21,700	14,200
15	8,650	9,800	21,200	40,500	31,200	22,500	63,700	44,100	15,800	16,400	20,400	13,600
16	7,750	12,200	19,200	38,900	38,900	22,500	58,100	40,800	15,800	15,800	19,200	13,200
17	7,980	23,200	17,200	36,500	45,600	21,200	52,700	37,600	15,200	15,800	19,200	12,600
18	8,200	32,600	16,000	34,900	51,000	20,500	47,500	34,400	15,200	15,200	19,800	11,200
19	8,200	36,500	14,800	33,400	51,900	20,500	41,600	32,900	14,700	14,200	19,800	10,200
20	7,750	36,500	16,000	31,900	49,200	19,800	37,600	31,400	14,200	14,200	19,200	9,480
21	7,750	32,600	16,500	31,200	49,200	17,900	37,600	30,600	15,200	14,700	17,400	9,250
22	7,980	29,600	17,000	28,900	47,400	17,900	36,800	29,900	15,800	15,800	16,900	9,250
23	7,750	26,700	17,500	28,200	43,900	18,600	38,400	29,900	14,700	17,400	16,900	9,250
24	7,750	23,200	18,000	28,200	41,400	19,800	48,400	30,600	14,200	20,400	16,900	9,700
25	7,520	19,800	18,000	27,400	43,000	20,500	69,400	31,400	13,200	24,300	20,400	9,700
26	7,300	17,200	16,500	24,600	50,100	21,800	80,500	29,900	12,600	28,400	24,300	9,700
27	7,080	15,400	16,000	21,800	51,900	22,500	81,600	29,200	12,400	29,200	28,400	9,480
28	7,980	14,000	19,800	21,200	49,200	31,900	76,400	27,800	11,900	32,900	29,900	8,580
29	8,880	12,000	24,600	20,500	-------	52,800	68,400	27,000	12,100	35,200	29,200	8,350
30	8,880	10,600	26,000	19,200	-------	76,600	61,800	26,400	12,400	31,400	26,400	8,350
31	8,880	-------	27,400	18,600	-------	89,400	-------	25,600	-------	31,400	21,700	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11,500	7,080	8,570	0.326	0.38
November	36,500	7,620	15,600	.593	.66
December	35,700	9,800	19,800	.753	.87
January	50,100	18,600	31,400	1.19	1.37
February	51,900	14,200	31,400	1.19	1.24
March	89,400	17,900	31,000	1.18	1.36
April	127,000	36,800	75,400	2.87	3.20
May	56,300	25,600	37,800	1.44	1.66
June	25,000	11,900	17,400	.662	.74
July	35,200	11,400	18,600	.707	.82
August	29,900	16,900	21,700	.825	.95
September	26,400	8,350	14,500	.551	.61
The year	127,000	7,080	26,800	1.02	13.86

TENNESSEE RIVER AT FLORENCE, ALA.

LOCATION.—Water-stage recorder 700 feet above Southern Railway bridge at lower end of Pattons Island, 1 mile south of Florence, Lauderdale County, and 2½ miles below Wilson Dam. Zero of gage is 400.85 feet above mean sea level.

DRAINAGE AREA.—30,800 square miles.

RECORDS AVAILABLE.—November, 1871, to September, 1931.

EXTREMES.—Maximum discharge during year, 146,000 second-feet Apr. 10 (gage height, 12.95 feet); minimum, 6,520 second-feet, regulated flow, Oct. 18 (gage height, −1.25 feet).

1871–1931: Maximum discharge, about 444,000 second-feet Mar. 19, 1897 (gage height, 32.5 feet); minimum, 2,400 second-feet, regulated flow, Oct. 8, 1925 (gage height, −3.0 feet).

REMARKS.—Records good. Flow somewhat regulated by operation of power plant and gates at Wilson Dam.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12,800	9,420	13,800	30,600	21,000	62,700	115,000	60,500	25,600	12,600	29,100	20,300
2	12,800	8,780	15,000	30,600	20,300	57,500	111,000	56,500	24,900	13,800	27,700	17,300
3	12,000	8,570	14,400	29,800	99,700	49,700	101,000	52,500	23,600	12,800	22,200	17,300
4	12,000	8,370	14,400	28,400	19,100	47,000	96,800	47,900	22,200	13,600	19,100	17,300
5	9,870	8,170	15,500	27,000	18,500	42,600	101,000	45,200	19,100	13,000	16,700	16,700
6	11,100	9,200	15,500	28,400	17,300	38,400	111,000	42,600	20,300	14,400	19,700	17,300
7	9,420	8,990	21,000	32,800	17,900	41,800	126,000	39,200	23,600	13,300	24,200	19,700
8	13,600	8,570	32,100	38,400	16,700	42,600	139,000	37,600	23,600	12,600	23,600	26,300
9	11,300	8,370	39,200	43,400	17,300	39,200	143,000	41,800	22,200	15,000	21,600	27,000
10	10,100	9,420	38,400	50,600	18,500	36,000	142,000	42,600	19,700	17,900	22,900	24,200
11	10,300	9,870	34,400	56,500	19,700	32,100	126,000	47,000	18,500	17,900	23,600	21,000
12	10,800	9,870	30,600	55,500	20,300	30,600	101,000	53,500	17,900	17,900	23,600	16,100
13	8,570	9,420	29,100	53,500	22,200	28,400	78,700	54,500	17,300	19,100	24,200	13,800
14	8,570	11,600	27,700	49,700	27,700	27,000	70,400	51,500	16,700	18,500	22,900	13,000
15	8,780	13,800	24,900	46,100	37,600	27,000	68,200	47,000	17,300	18,500	21,000	16,100
16	8,570	17,900	22,200	42,600	44,300	27,000	62,700	42,600	19,700	19,100	19,700	17,300
17	9,200	24,900	21,000	40,900	50,600	25,600	55,500	38,400	19,100	17,900	19,100	15,500
18	7,780	33,600	20,300	38,400	59,500	24,200	49,700	36,000	16,700	17,300	17,300	16,100
19	7,780	40,000	18,500	36,800	59,500	24,200	45,200	35,200	15,500	15,500	19,700	14,400
20	8,570	40,000	18,500	35,200	56,500	23,600	41,800	32,800	15,500	17,300	20,300	10,800
21	8,170	36,800	18,500	34,400	54,500	22,900	40,000	30,600	15,500	19,100	18,500	9,870
22	8,990	32,800	19,100	36,000	52,500	21,000	40,000	27,000	16,700	18,500	17,300	9,420
23	9,420	30,600	19,700	35,200	48,800	22,900	44,300	26,300	16,100	16,700	16,700	9,420
24	9,420	24,900	19,700	35,200	51,500	23,600	48,800	27,700	15,000	17,900	16,700	10,300
25	7,780	24,900	19,100	32,100	70,400	24,200	72,700	31,400	13,000	19,700	18,500	9,870
26	7,590	19,100	19,700	28,400	71,500	24,900	87,700	30,600	13,000	27,000	23,600	9,870
27	7,590	19,100	22,200	25,600	66,000	29,100	87,700	29,800	13,600	31,400	28,400	8,990
28	7,980	17,300	24,200	24,200	62,700	57,500	83,800	29,100	12,800	31,400	29,800	9,200
29	7,980	16,100	29,100	23,600	-------	79,900	73,900	29,800	12,000	37,600	29,100	8,370
30	7,980	15,000	29,800	22,200	-------	94,200	66,000	30,600	12,300	36,000	26,300	8,570
31	8,570	-------	31,400	21,600	-------	107,000	-------	29,800	-------	32,800	22,900	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13,600	7,590	9,530	0.309	0.36
November	40,000	8,170	17,800	.578	.64
December	39,200	13,800	23,200	.753	.87
January	56,500	21,600	35,900	1.17	1.35
February	71,500	16,700	37,900	1.23	1.28
March	107,000	21,000	39,800	1.29	1.49
April	143,000	40,000	84,300	2.74	3.06
May	60,500	26,300	39,600	1.29	1.49
June	25,600	12,000	18,000	.584	.65
July	37,600	12,600	19,600	.636	.73
August	29,800	16,700	22,100	.718	.83
September	27,000	8,370	15,000	.487	.54
The year	143,000	7,590	30,100	.977	13.29

TENNESSEE RIVER AT RIVERTON, ALA.

LOCATION.—Water-stage recorder at Government lock at foot of Colbert Shoals Canal, three-quarters of a mile northeast of Riverton, Colbert County, and 1¾ miles above mouth of Bear Creek. Zero of gage is 355.5 feet above mean sea level.

DRAINAGE AREA.—31,300 square miles.

RECORDS AVAILABLE.—October, 1926, to September, 1931.

EXTREMES.—Maximum stage during year, 27.6 feet Apr. 10; minimum, 6.8 feet Oct. 21.

1926–1931: Maximum stage, 50.1 feet Dec. 30, 1926; minimum, that of Oct. 21, 1930.

The United States Weather Bureau reports a maximum stage of 58.4 feet Mar. 20, 1897, and a minimum of 4.3 feet Oct. 12, 1925.

REMARKS.—Rating curve not developed. Considerable regulation during low water caused by operations at Wilson Dam.

Daily gage height, in feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	7.4	9.0	12.7	10.6	18.6	25.2	17.7	11.9	8.5	12.4	10.6
2	8.5	7.5	9.1	12.6	10.5	18.1	25.3	17.2	11.3	8.8	12.2	9.8
3	8.3	7.3	9.2	12.6	10.2	16.7	23.9	16.6	11.1	8.7	11.3	9.7
4	8.3	7.3	9.1	12.2	10.2	16.0	22.8	16.0	11.0	8.7	10.3	9.7
5	8.0	7.1	9.3	12.3	10.0	15.3	22.6	15.4	10.2	8.7	9.6	9.6
6	7.7	7.3	9.0	12.3	9.9	14.5	23.6	15.2	10.2	8.8	10.2	9.5
7	7.9	7.4	9.8	13.1	9.7	14.9	24.9	14.5	10.6	9.0	11.4	9.8
8	8.7	7.3	12.0	14.0	9.6	15.5	26.5	14.2	11.1	8.6	11.5	11.1
9	8.5	7.3	13.8	14.9	9.9	15.3	27.3	15.1	10.7	8.8	11.1	12.0
10	8.1	7.4	14.1	15.8	10.0	14.3	27.5	15.4	10.3	9.5	11.0	11.4
11	7.8	7.7	13.6	16.8	10.1	13.5	26.6	15.5	10.0	9.9	11.1	10.7
12	7.7	7.9	12.9	17.1	10.4	12.9	23.9	16.4	9.8	9.6	11.1	10.0
13	7.7	7.7	12.3	16.9	10.7	12.5	20.8	16.7	9.7	10.0	11.4	9.1
14	7.2	7.6	12.1	16.4	11.9	12.1	19.1	16.4	9.5	9.9	11.0	8.7
15	7.3	9.0	11.6	15.6	13.5	12.0	18.6	15.7	9.5	9.9	10.6	9.0
16	7.3	10.0	11.1	15.1	14.9	12.0	17.9	15.1	9.9	10.2	10.4	9.7
17	7.4	10.6	10.7	14.6	16.0	11.8	17.1	14.3	10.3	9.8	10.2	9.4
18	7.3	12.9	10.4	14.3	17.3	11.5	16.2	13.8	9.8	9.8	9.7	9.3
19	7.1	14.0	10.2	13.9	17.6	11.3	15.5	13.4	9.3	9.5	9.9	9.6
20	7.2	14.4	9.9	13.6	17.3	11.3	14.8	13.2	9.3	9.4	10.4	8.3
21	7.0	14.1	9.9	13.4	16.9	11.1	14.4	12.9	9.2	10.0	10.1	7.8
22	7.1	13.3	9.9	13.6	16.6	10.7	14.5	12.1	9.4	10.0	9.6	7.6
23	7.4	12.8	10.1	13.5	16.1	10.9	15.1	11.6	9.5	10.2	9.7	7.6
24	7.5	12.0	10.1	13.4	16.3	11.1	15.5	11.8	9.2	10.2	9.5	7.5
25	7.3	11.2	10.1	13.1	19.6	11.2	18.0	12.3	8.9	10.3	9.7	7.9
26	7.0	10.7	10.5	12.3	20.3	11.4	20.6	12.7	8.6	11.1	10.5	7.5
27	7.0	10.2	10.7	11.8	19.3	12.4	20.8	12.5	8.8	12.5	11.9	7.4
28	7.0	9.8	11.3	11.3	18.6	16.2	20.6	12.3	8.6	12.5	12.2	7.4
29	7.1	9.6	12.0	11.2	-------	20.0	19.6	12.4	8.5	13.6	12.4	7.3
30	7.1	9.5	12.6	11.0	-------	21.5	18.5	12.5	8.4	13.7	11.9	7.1
31	7.1	-------	12.7	10.8	-------	23.3	-------	12.5	-------	13.1	11.3	-------

TENNESSEE RIVER AT SAVANNAH, TENN.

LOCATION.—Water-stage recorder at highway bridge a quarter of a mile west of Savannah, Hardin County. Zero of gage is 341.13 feet above mean sea level.
DRAINAGE AREA.—33,100 square miles.
RECORDS AVAILABLE.—September, 1930, to September, 1931.
EXTREMES.—Maximum discharge during period, 132,000 second-feet Apr. 10 (gage height, 25.4 feet); minimum, 8,670 second-feet Oct. 22, 28, 29 (gage height, −0.1 foot).
REMARKS.—Records good. Gage height partly estimated Dec. 7–9, June 8, 9, Aug. 3–8. Low-water flow regulated to some extent by operations at Wilson Dam.

Daily and monthly discharge, in second-feet, 1930–31

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	14,100	9,130	16,800	34,000	22,900	75,800	117,000	66,000	31,200	13,500	33,200	24,400
2	-------	13,800	9,860	15,800	33,200	22,500	73,100	123,000	62,100	27,600	14,100	30,400	21,400
3	-------	13,500	10,100	16,400	32,400	21,400	64,300	116,000	58,000	26,400	14,800	28,000	18,500
4	-------	13,200	9,610	16,400	31,600	21,000	56,500	107,000	54,000	24,800	14,400	24,100	18,200
5	-------	12,900	9,610	16,100	31,600	20,300	51,000	101,000	50,000	23,300	14,800	21,800	18,200
6	10,400	11,400	9,130	17,800	33,600	19,900	45,200	102,000	48,500	21,000	14,800	21,400	17,400
7	10,400	11,200	9,860	18,200	34,800	18,800	43,400	110,000	46,100	21,800	17,100	27,600	17,400
8	10,600	11,700	9,860	23,700	39,000	18,500	50,500	120,000	43,400	24,400	15,100	31,200	20,300
9	10,100	15,100	9,610	34,000	43,400	19,200	51,500	128,000	43,400	25,200	14,100	31,600	26,800
10	9,610	14,100	9,860	39,000	47,000	20,300	47,000	132,000	49,500	23,300	15,400	26,400	27,200
11	11,200	12,600	10,900	38,600	53,000	20,700	41,200	131,000	49,000	21,400	18,200	25,200	24,800
12	12,000	11,400	11,700	35,600	57,500	21,400	37,300	118,000	51,500	19,900	18,500	24,800	21,800
13	12,000	11,400	12,000	32,400	58,000	22,900	34,400	96,400	55,000	19,600	18,500	25,600	18,200
14	10,900	10,600	11,400	30,800	55,500	28,400	32,400	79,700	55,000	18,800	19,600	25,200	15,400
15	10,100	9,610	13,200	28,800	51,000	35,200	31,200	72,000	52,000	18,500	19,600	23,700	14,100
16	9,860	9,610	17,800	26,800	47,500	42,000	30,800	67,600	48,000	19,200	19,600	22,200	16,100
17	9,860	9,610	20,300	24,400	44,800	49,500	30,000	62,100	44,300	21,400	19,600	21,400	17,800
18	10,600	9,860	28,000	22,900	43,000	56,500	28,800	56,500	40,700	20,700	18,800	19,900	16,400
19	11,200	9,370	36,000	21,800	40,300	61,000	27,600	51,000	38,600	18,200	18,500	18,500	16,800
20	11,700	9,130	40,300	20,700	39,000	61,000	27,200	47,000	37,300	16,800	17,100	20,300	16,100
21	12,900	9,130	40,300	19,600	36,900	58,500	26,800	45,200	35,600	16,400	18,200	21,000	12,300
22	12,000	8,670	37,700	19,600	37,300	56,500	25,600	45,200	33,200	16,800	19,600	19,600	10,900
23	11,400	8,900	34,400	20,300	37,300	54,000	24,400	46,600	29,600	17,400	20,300	18,500	10,400
24	12,000	9,860	31,600	20,700	36,900	53,000	25,600	48,500	28,400	17,400	22,500	17,800	10,100
25	12,600	10,100	26,800	20,700	36,400	73,100	25,600	55,500	30,000	16,400	22,200	17,800	10,400
26	12,900	9,610	25,600	22,500	33,200	84,600	26,400	74,200	32,800	14,800	22,500	19,200	10,900
27	14,400	8,900	21,400	24,400	38,600	80,200	29,200	83,000	32,400	14,400	27,600	24,800	10,400
28	15,100	8,670	20,300	26,000	27,600	75,300	42,500	84,100	31,600	14,400	31,200	29,200	9,860
29	15,100	8,670	18,800	27,600	26,000	-------	69,800	79,700	31,200	14,100	33,200	31,200	9,860
30	14,400	8,900	17,800	32,000	25,200	-------	85,200	72,600	32,000	13,500	37,300	30,000	9,370
31	-------	9,130	-------	32,400	24,100	-------	97,600	---------	32,000	-------	36,000	27,600	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930					
September 6–30	15,100	9,610	11,700	0.353	0.33
1930–31					
October	15,100	8,670	10,800	.326	.38
November	40,300	9,130	19,100	.577	.64
December	39,000	15,800	24,600	.743	.86
January	58,000	24,100	39,000	1.18	1.36
February	84,600	18,500	40,700	1.23	1.28
March	97,600	24,400	43,800	1.32	1.52
April	132,000	45,200	85,700	2.59	2.89
May	66,000	28,400	43,300	1.31	1.51
June	31,200	13,500	20,000	.604	.67
July	37,300	13,500	20,200	.610	.70
August	33,200	17,800	24,500	.740	.85
September	27,200	9,370	16,400	.495	.55
The year	132,000	8,670	32,200	.973	13.21

TENNESSEE RIVER AT PERRYVILLE, TENN.

LOCATION.—Staff gage at highway bridge at Perryville, Decatur County, a quarter of a mile below mouth of Beech River. Zero of gage is 327.93 feet above mean sea level.

DRAINAGE AREA.—34,500 square miles.

RECORDS AVAILABLE.—June to September, 1931.

EXTREMES.—Maximum discharge during period, 38,200 second-feet Aug. 9 (gage height, 7.90 feet); minimum, 10,000 second-feet Sept. 30 (gage height, 0.05 foot).

REMARKS.—Records good. Low-water flow regulated to some extent by operations at Wilson Dam.

Daily and monthly discharge, in second-feet, 1931

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-------	14,200	36,000	27,600	16	19,600	20,000	24,500	15,400
2	-------	14,200	32,500	24,500	17	20,300	20,300	23,000	17,300
3	-------	14,800	30,800	21,800	18	21,800	20,300	22,200	17,900
4	-------	15,700	27,600	19,600	19	20,700	19,600	20,700	17,300
5	25,600	15,400	24,500	19,300	20	18,600	19,300	20,000	17,300
6	23,000	15,400	25,200	18,900	21	17,600	18,600	21,800	15,700
7	22,200	17,300	30,800	18,300	22	17,300	20,700	21,800	13,000
8	22,600	17,900	32,900	18,600	23	17,900	23,000	20,000	11,700
9	25,200	16,000	37,700	22,600	24	18,600	23,700	19,300	11,000
10	24,900	15,100	32,500	27,600	25	17,900	24,500	18,600	10,500
11	23,700	16,300	28,400	27,200	26	17,300	24,100	18,600	10,500
12	21,400	18,600	26,800	24,500	27	16,000	25,200	21,400	11,000
13	20,700	18,600	26,000	21,800	28	15,400	30,000	27,600	10,700
14	20,000	19,600	26,800	18,600	29	15,400	32,100	31,700	10,500
15	19,600	20,300	26,000	16,000	30	14,800	36,000	31,700	10,200
					31	-------	37,700	30,400	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
June 5–30	25,600	14,800	19,900	0.577	0.56
July	37,700	14,200	20,800	.603	.70
August	37,700	18,600	26,400	.765	.88
September	27,600	10,200	17,600	.510	.57

TENNESSEE RIVER AT JOHNSONVILLE, TENN.

LOCATION.—Water-stage recorder at Nashville, Chattanooga & St. Louis Railway bridge at Johnsonville, Humphreys County. Zero of gage is 320.98 feet above mean sea level.

DRAINAGE AREA.—38,500 square miles.

RECORDS AVAILABLE.—October, 1875, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 145,000 second-feet Apr. 3 (gage height, 19.2 feet); minimum discharge, 9,170 second-feet Oct. 30, 31; minimum gage height, −0.2 foot Oct. 30, 31, Sept. 30.

1889–1931: Maximum discharge, about 410.000 second-feet Mar. 24, 1897 (gage height, 48.0 feet); minimum, 3,500 second-feet Sept. 11, 1925 (gage height, −2.0 feet).

REMARKS.—Records good. Low-water flow regulated to some extent by operations at Wilson Dam.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15,000	9,510	19,200	35,100	25,900	99,600	128,000	79,100	33,000	15,000	37,300	28,200
2	14,500	9,510	18,200	35,800	24,800	98,800	143,000	73,000	32,400	14,600	34,200	25,400
3	14,100	9,860	17,200	35,100	23,600	93,200	144,000	68,500	28,800	15,400	31,800	23,200
4	14,100	10,200	17,200	34,500	23,000	82,200	136,000	64,000	27,600	16,300	29,400	20,500
5	13,700	10,200	17,700	33,800	22,400	71,500	124,000	59,700	26,500	16,300	26,500	19,500
6	13,300	9,860	17,700	35,100	21,900	63,300	117,000	55,400	24,800	16,300	25,400	19,500
7	12,900	9,860	18,700	36,400	21,300	58,300	118,000	53,300	23,200	18,000	30,000	19,000
8	12,500	9,860	19,700	40,300	20,800	61,900	125,000	50,500	22,600	19,000	33,000	18,500
9	12,500	10,200	25,900	45,700	21,900	65,500	134,000	47,700	24,800	18,000	37,300	20,500
10	14,100	10,600	37,000	49,800	23,600	63,300	140,000	49,800	25,400	16,700	36,000	25,400
11	15,000	11,000	41,600	54,000	24,200	56,800	144,000	53,300	24,200	16,700	30,600	27,000
12	14,100	11,700	40,300	60,400	24,200	50,500	141,000	54,700	22,600	18,500	27,600	25,400
13	12,900	12,900	37,700	64,000	25,900	45,000	127,000	57,500	21,600	19,500	26,500	23,200
14	12,500	13,300	34,500	64,000	32,000	41,000	106,000	59,700	21,000	19,500	26,500	20,000
15	11,700	13,700	32,000	60,400	38,300	38,300	90,000	59,000	20,500	20,500	26,500	17,100
16	11,000	15,400	30,100	56,100	46,400	36,400	80,600	56,100	20,000	21,000	25,400	15,800
17	10,200	19,700	28,300	52,600	54,700	35,100	73,700	51,900	20,500	21,000	23,700	16,300
18	10,200	23,600	25,900	49,800	61,900	33,800	67,700	47,100	22,100	21,000	22,600	17,600
19	10,200	31,300	24,200	47,100	69,200	32,600	61,900	43,700	22,100	20,500	21,600	17,600
20	9,860	39,000	23,600	44,300	72,200	30,700	56,800	41,100	20,000	20,000	21,000	17,100
21	9,860	43,000	22,400	42,300	71,500	30,100	52,600	39,200	18,500	19,500	21,600	16,700
22	9,510	42,300	21,300	40,300	67,700	29,500	51,900	37,900	18,000	21,000	22,600	14,600
23	9,510	39,000	21,300	40,300	64,800	28,900	53,300	34,800	18,000	22,600	21,600	12,800
24	9,510	35,800	21,300	40,300	61,900	27,700	56,100	31,800	19,000	24,200	20,000	11,800
25	9,860	32,000	21,900	39,700	74,500	28,300	58,300	30,600	19,500	25,400	19,000	11,200
26	10,200	27,700	23,000	38,300	95,600	28,300	68,500	31,200	19,000	24,800	18,500	10,900
27	10,600	25,900	25,300	35,800	102,000	30,100	84,500	33,600	17,100	24,800	20,500	11,200
28	10,200	23,000	27,100	32,600	98,000	41,600	90,800	33,600	16,300	28,800	25,400	11,200
29	9,510	21,300	29,500	29,500		66,300	90,800	33,000	16,300	31,800	30,000	10,900
30	9,510	20,300	31,300	27,700		96,400	86,100	32,400	15,400	34,800	31,200	10,600
31	9,170		34,500	27,100		111,000		33,600		37,900	30,600	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,000	9,170	11,700	0.304	0.35
November	43,000	9,510	20,100	.522	.58
December	41,600	17,200	26,000	.675	.78
January	64,000	27,100	42,800	1.11	1.28
February	102,000	20,800	46,900	1.22	1.27
March	111,000	27,700	54,100	1.41	1.63
April	144,000	51,900	98,400	2.56	2.86
May	79,100	30,600	48,300	1.25	1.44
June	33,000	15,400	22,000	.571	.64
July	37,900	14,600	21,300	.553	.64
August	37,300	18,500	26,900	.699	.81
September	28,200	10,600	18,000	.468	.52
The year	144,000	9,170	36,200	.940	12.80

TENNESSEE RIVER AT DANVILLE, TENN.

LOCATION.—Staff gage at Louisville & Nashville Railroad terminal building 1,100 feet above railroad bridge at Danville, Houston County. Zero of gage is 314.06 feet above mean sea level.

DRAINAGE AREA.—38,900 square miles.

RECORDS AVAILABLE.—June to September, 1931.

EXTREMES.—Maximum discharge during period, 39,400 second-feet July 31 and Aug. 10 (gage height, 5.9 feet); minimum, 11,300 second-feet Sept. 30 (gage height, 0.6 foot).

REMARKS.—Records good. Possibly slight regulation during low stages caused by operations at power dams upstream and navigation dams downstream.

Daily and monthly discharge, in second-feet, 1931

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	33,100	15,300	38,700	30,400	16	19,900	20,400	26,800	17,000
2	31,900	14,900	36,100	28,000	17	19,900	20,400	25,200	17,000
3	29,500	14,900	33,500	25,200	18	20,900	20,400	24,000	18,900
4	27,700	16,600	31,000	22,400	19	21,400	20,400	23,500	18,900
5	25,900	16,600	28,000	20,900	20	20,400	19,400	21,900	18,400
6	24,700	16,100	26,200	20,900	21	18,400	19,400	21,900	18,400
7	22,500	17,500	30,400	20,400	22	17,000	20,900	23,500	16,600
8	21,900	18,900	34,200	19,900	23	17,500	21,900	23,000	14,400
9	23,600	18,400	37,400	20,900	24	17,500	24,200	21,400	12,800
10	25,300	16,600	38,700	26,200	25	18,900	24,700	20,400	12,000
11	24,700	16,100	32,200	28,600	26	18,900	24,700	19,900	11,600
12	22,500	17,500	29,200	27,400	27	17,500	24,200	20,900	12,000
13	21,400	18,900	28,000	24,600	28	16,100	27,100	25,200	12,000
14	20,400	18,900	28,000	21,900	29	16,100	31,300	30,400	11,600
15	20,400	19,900	27,400	18,900	30	15,700	33,100	32,800	11,300
					31		38,700	32,200	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
June	33,100	15,700	21,700	0.558	0.62
July	38,700	14,900	20,900	.537	.62
August	38,700	19,900	28,100	.722	.83
September	30,400	11,300	19,300	.496	.55

TENNESSEE RIVER AT AURORA LANDING, KY.

LOCATION.—Staff gage at mouth of Ledbetter Creek, 2,000 feet north of Marshall-Calloway County line and 1 mile south of Aurora Landing, Marshall County. Zero of gage is 301.85 feet above mean sea level.

DRAINAGE AREA.—39,900 square miles.

RECORDS AVAILABLE.—July, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 142,000 second-feet Apr. 11, 12, (gage height, 22.0 feet); minimum, 10,000 second-feet Oct. 19–26 (gage height, 1.5 feet).

1930–31: Maximum and minimum discharges, those of 1931.

REMARKS.—Records good below 50,000 second-feet, fair above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15,800	11,000	19,800	35,600	26,800	93,700	121,000	88,100	34,100	14,700	38,300	29,600
2	15,200	10,500	19,200	36,300	25,500	93,000	135,000	83,200	33,500	14,700	35,900	27,400
3	14,600	10,500	18,000	36,300	24,200	91,600	139,000	76,200	30,600	15,100	32,300	24,700
4	13,600	11,500	16,800	35,600	24,200	82,500	137,000	72,000	28,400	16,300	30,100	21,700
5	13,000	11,500	16,800	34,900	22,900	74,100	127,000	62,200	26,800	16,300	27,400	19,800
6	12,500	11,500	16,800	37,000	21,700	66,200	124,000	57,700	25,700	16,300	25,700	18,900
7	12,000	11,500	18,000	37,000	21,700	60,300	125,000	55,100	23,700	17,100	29,000	18,900
8	12,000	11,500	18,600	38,400	21,000	62,900	128,000	52,500	22,200	18,400	33,500	18,000
9	12,000	11,500	19,800	42,000	21,700	66,800	131,000	51,000	23,200	18,400	37,100	18,900
10	12,500	12,000	28,800	48,000	25,500	67,400	138,000	48,800	25,200	16,700	39,500	23,200
11	13,600	12,500	38,400	52,500	26,800	62,900	142,000	51,800	24,700	15,900	32,900	26,800
12	13,600	13,600	41,200	57,000	25,500	57,000	141,000	53,200	23,200	17,100	28,400	26,200
13	13,000	13,600	39,800	61,600	26,800	49,500	133,000	54,800	21,700	18,400	26,800	23,700
14	12,500	13,600	37,700	64,200	29,400	44,200	117,000	55,500	20,700	18,900	25,700	21,200
15	12,000	14,600	32,800	61,600	37,700	39,100	108,000	57,000	20,200	19,400	26,200	18,000
16	11,500	14,600	30,700	58,400	43,500	36,300	91,400	54,000	19,800	19,800	25,700	16,300
17	11,000	16,800	29,400	55,800	47,200	33,500	84,600	52,500	19,800	20,000	23,700	15,500
18	10,500	19,800	26,800	52,500	57,000	32,100	79,000	51,200	20,700	20,200	22,700	16,700
19	10,000	24,200	24,800	49,500	62,900	28,100	68,800	47,300	21,200	20,000	21,700	17,100
0	10,000	32,100	22,900	48,000	67,400	28,100	60,300	44,000	20,200	19,800	20,700	17,100
21	10,000	41,200	22,900	45,000	69,400	26,800	58,500	40,800	18,900	20,200	20,200	16,700
22	10,000	42,800	21,000	42,000	66,800	26,200	57,000	40,200	18,000	21,200	21,700	15,500
23	10,000	42,000	21,000	40,500	64,800	26,200	57,000	37,700	17,600	22,200	20,700	13,600
24	10,000	39,800	21,000	41,200	61,600	25,500	55,800	33,500	18,000	24,200	19,800	12,600
25	10,000	36,300	21,700	40,500	64,200	25,500	57,700	31,200	18,900	25,200	18,900	11,600
26	10,000	33,500	22,300	39,100	82,500	24,800	68,100	31,800	18,900	24,700	18,400	11,200
27	10,500	28,100	24,800	37,700	93,700	25,500	82,500	33,500	17,100	24,200	18,900	11,200
28	11,500	24,800	26,800	34,900	94,400	34,200	89,500	34,700	16,300	26,200	22,700	11,200
29	11,500	21,700	28,100	33,500	-------	52,500	93,700	34,100	15,900	31,200	28,400	11,200
30	11,500	20,400	30,700	32,800	-------	86,000	95,800	33,500	15,500	33,500	31,800	10,600
31	12,000	-------	33,500	26,800	-------	108,000	-------	33,500	-------	37,100	31,200	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,800	10,000	11,900	0.298	0.34
November	42,800	10,500	20,600	.516	.58
December	41,200	16,800	25,500	.639	.74
January	64,200	26,800	43,700	1.10	1.27
February	94,400	21,000	44,900	1.13	1.18
March	108,000	24,800	52,600	1.32	1.52
April	142,000	55,800	102,000	2.56	2.86
May	88,100	31,200	50,100	1.26	1.45
June	34,100	15,500	22,000	.552	.62
July	37,100	14,700	20,800	.522	.60
August	39,500	18,400	27,000	.677	.78
September	29,600	10,600	18,200	.456	.51
The year	142,000	10,000	36,500	.915	12.45

DAVIDSON RIVER NEAR BREVARD, N. C.

LOCATION.—Chain gage at bridge on State highway 284, 1½ miles upstream from confluence with French Broad River, 2 miles downstream from mouth of Avery Creek, and 3½ miles northeast of Brevard, Transylvania County.

DRAINAGE AREA.—41 square miles.

RECORDS AVAILABLE.—December, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,540 second-feet Apr. 22 (gage height, 4.94 feet); minimum, 27 second-feet Sept. 30 (gage height, 0.56 foot). 1920–1931: Maximum discharge (estimated), 8,400 second-feet Aug. 15, 1928 (gage height, 11.8 feet); minimum, 15 second-feet Sept. 19–21, 1925 (gage height, 0.34 foot).

REMARKS.—Records good below 1,500 second-feet and fair above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	38	72	88	64	150	309	150	78	53	65	101
2	48	38	68	88	61	127	252	150	77	52	55	72
3	46	38	66	87	60	111	238	142	74	50	50	103
4	44	39	64	87	60	103	545	135	74	48	71	72
5	42	38	132	580	60	97	370	135	71	64	88	51
6	42	38	475	199	60	90	294	186	66	61	94	46
7	41	38	348	131	60	124	238	238	72	58	120	44
8	44	36	220	125	60	174	212	212	71	53	92	40
9	46	37	152	108	89	131	199	174	65	57	77	39
10	46	38	113	101	70	115	174	150	62	55	66	38
11	47	39	87	98	64	109	174	144	61	50	64	36
12	45	75	81	105	60	100	162	135	129	47	89	35
13	41	75	78	97	76	94	148	127	86	48	71	34
14	41	99	74	92	111	92	140	120	78	62	72	34
15	40	184	70	86	78	90	131	116	78	55	92	32
16	40	303	73	84	80	86	124	113	76	48	97	31
17	40	232	82	82	146	83	118	109	70	66	77	30
18	39	207	81	94	98	78	150	108	64	77	65	32
19	38	162	78	86	88	77	142	103	61	62	58	34
20	38	132	80	82	80	77	162	118	60	52	76	34
21	38	104	84	76	78	76	199	113	127	58	238	34
22	36	91	88	70	77	98	958	106	109	53	199	32
23	37	82	90	71	76	97	309	105	66	50	148	30
24	38	78	101	68	78	111	238	101	62	116	90	30
25	36	75	113	68	162	111	212	95	64	52	65	28
26	36	73	333	65	101	100	199	92	66	58	62	35
27	36	70	232	65	90	129	174	94	62	66	58	30
28	40	68	162	64	113	545	174	86	60	57	53	28
29	49	67	104	64	-------	386	162	82	56	55	58	28
30	42	68	90	65	-------	199	150	78	52	50	53	27
31	40	-------	88	64	-------	212	-------	80	-------	61	48	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	50	36	41.5	1.01	1.16
November	303	36	88.7	2.16	2.41
December	475	64	128	3.12	3.60
January	580	64	105	2.56	2.95
February	162	60	82.1	2.00	2.08
March	545	76	135	3.29	3.79
April	958	118	235	5.73	6.39
May	238	78	126	3.07	3.54
June	129	52	73.2	1.79	2.00
July	116	47	57.9	1.41	1.63
August	238	48	84.2	2.05	2.36
September	103	27	41.3	1.01	1.13
The year	958	27	99.8	2.43	33.04

SOUTH FORK OF MILLS RIVER AT THE PINK BEDS, N. C.

LOCATION.—Water-stage recorder at The Pink Beds, in Pisgah National Forest, 400 feet downstream from mouth of Thompson Creek and 9 miles north of Brevard, Transylvania County.

DRAINAGE AREA.—9.87 square miles.

RECORDS AVAILABLE.—February, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 284 second-feet Apr. 22 (gage height, 4.30 feet); minimum, 4.0 second-feet Oct. 18.

1926–1931: Maximum discharge (estimated), 2,220 second-feet Aug. 15, 1928 (gage height, 8.0 feet); minimum, 1.6 second-feet Sept. 3, 1930.

REMARKS.—Records good except those above 150 second-feet and those for estimated periods, Dec. 21–25, Jan. 1–5, 15–27, June 13–20, Sept. 22–30, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	4.8	14.0	16.2	16.6	40	64	32	19.5	10.4	11.8	11.2
2	5.4	5.0	10.8	15.8	16.2	31	53	30	18.5	9.5	17.7	17.1
3	5.4	5.0	9.8	14.8	15.8	27	51	29	17.6	8.3	14.0	20.0
4	5.2	5.6	9.8	14.4	15.3	24	136	27	16.6	12.2	15.8	14.8
5	5.0	9.8	33	123	14.8	22	94	27	15.3	12.9	35	12.6
6	5.0	8.3	108	60	14.8	20	71	39	14.4	11.5	38	11.2
7	4.8	6.5	44	43	14.4	37	58	57	15.3	8.6	36	10.1
8	5.8	6.0	31	37	14.0	44	51	45	13.2	7.75	22	9.8
9	6.0	5.8	24	32	22	32	45	39	12.2	12.8	17.1	9.5
10	5.6	5.8	22	30	18.0	28	41	35	11.5	11.5	14.4	8.9
11	6.75	5.8	19.0	29	15.3	26	38	33	10.4	8.3	12.6	8.3
12	5.2	11.0	17.1	34	14.0	23	35	31	33	7.75	15.8	7.75
13	4.8	11.5	15.8	29	14.8	22	33	30	18	11.6	12.2	7.5
14	4.6	8.9	14.8	26	20	22	31	29	16	17.5	11.2	7.5
15	4.6	40	13.6	24	15.8	20	29	27	15	12.6	23	7.5
16	4.6	87	12.6	23	14.0	19.5	28	26	14	10.8	17.1	7.25
17	4.6	67	12.8	23	30	18.5	27	26	12	8.3	14.8	7.25
18	4.2	46	12.9	25	20	18.0	27	25	11	9.2	12.2	6.75
19	4.2	29	12.9	23	18.0	17.6	26	24	11	13.6	12.2	7.0
20	4.2	22	12.2	22	17.1	16.6	25	29	10	9.8	23	7.5
21	4.2	18.5	11	21	16.2	16.6	31	26	9.8	9.2	47	7.25
22	4.2	16.2	11	20	15.3	20	149	29	14.4	9.8	39	7.0
23	4.2	14.0	11	20	14.8	20	66	26	11.5	7.25	33	7.0
24	4.4	12.9	10	20	14.8	23	52	24	9.8	6.75	24	6.5
25	4.4	12.2	10	19	33	24	45	23	24	7.0	20	6.5
26	4.4	11.2	37	19	23	24	41	27	22	17.8	17.1	7.0
27	4.4	9.8	25	19	21	29	38	24	13.6	41	15.8	6.5
28	4.6	9.5	19.5	19.0	34	112	35	23	11.2	19.5	14.0	6.5
29	7.0	9.2	18.5	18.0	-------	72	33	22	9.8	13.2	18.1	6.5
30	5.4	14.6	17.6	17.6	-------	47	31	20	9.5	10.4	14.0	6.0
31	5.0	-------	17.1	17.1	-------	49	-------	20	-------	11.2	11.8	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7.0	4.20	4.96	0.503	0.58
November	87	4.80	17.3	1.75	1.95
December	108	9.8	20.6	2.09	2.41
January	123	14.4	27.5	2.79	3.22
February	34	14.0	18.3	1.85	1.93
March	112	16.6	30.5	3.09	3.56
April	149	25	49.5	5.02	5.60
May	57	20	29.2	2.96	3.41
June	33	9.5	14.7	1.49	1.66
July	41	6.75	11.9	1.21	1.40
August	47	11.2	20.3	2.06	2.38
September	20	6.0	8.88	.900	1.00
The year	149	4.20	21.1	2.14	29.10

SWANNANOA RIVER AT SWANNANOA, N. C.

LOCATION.—Staff gage at Swannanoa, Buncombe County, 1½ miles downstream from mouth of North Fork and 2⅛ miles upstream from mouth of Beetree Creek.

DRAINAGE AREA.—60 square miles.

RECORDS AVAILABLE.—May, 1907, to June, 1909; January, 1926, to December, 1931 (discontinued).

EXTREMES.—Maximum discharge during period, 1,240 second-feet Apr. 4 (gage height, 4.38 feet); minimum, 8.0 second-feet Oct. 17–19, 1931 (gage height, 0.82 foot).

1907–1909, 1926–1931: Maximum discharge (estimated), 10,400 second-feet Aug. 16, 1928; minimum, 7.6 second-feet July 20–22, 1926.

REMARKS.—Records good. The city of Asheville diverts water for water supply from North Fork of Swannanoa River. Slight regulation caused by operation of a sand and gravel plant 2 miles upstream.

Daily discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	18	18	50	49	41	58	137	114	50	23	27	38
2	17	17	52	48	40	54	127	104	48	21	28	34
3	15	17	49	44	39	49	125	95	47	20	30	92
4	14	23	45	40	38	48	1,180	95	45	53	46	71
5	14	23	87	73	37	46	997	147	42	79	59	49
6	14	21	181	181	36	47	682	398	42	50	52	40
7	12	21	147	90	35	53	247	293	41	38	90	37
8	15	20	79	73	36	58	193	193	39	28	70	32
9	17	18	68	88	48	54	181	169	36	35	50	32
10	16	18	54	85	54	49	169	147	34	39	33	33
11	15	21	48	80	54	47	147	158	32	26	59	28
12	14	114	47	77	55	47	123	158	32	21	73	25
13	14	85	46	67	53	46	116	147	31	20	56	23
14	14	59	42	60	52	50	103	127	33	21	48	21
15	15	104	42	56	50	56	99	118	32	24	42	18
16	14	277	42	53	54	49	92	104	30	21	137	18
17	13	247	47	52	67	42	85	87	26	25	56	20
18	12	137	56	58	59	41	82	85	24	46	39	19
19	12	121	41	53	56	40	84	84	22	55	30	18
20	12	71	34	52	52	49	84	97	23	44	110	17
21	12	61	32	52	46	42	110	119	23	38	114	16
22	13	49	32	52	42	66	732	88	48	74	137	15
23	16	45	42	50	41	73	343	95	63	55	101	14
24	17	41	45	48	44	67	206	84	47	42	61	15
25	14	39	47	46	42	68	158	73	30	32	63	15
26	14	37	42	48	48	66	158	66	25	27	79	15
27	16	38	35	48	52	68	147	63	25	34	87	14
28	15	34	31	46	55	127	137	56	25	32	73	13
29	28	28	38	45	------	158	125	56	23	28	64	14
30	23	34	47	44	------	137	118	54	21	28	47	14
31	21	------	49	42	------	137	------	53	------	34	45	------

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1931											
1	11	17	18	11	10	18	60	21	9.0	21	181
2	10	17	28	12	10	18	64	22	10	21	343
3	10	18	80	13	10	14	110	23	11	20	169
4	10	18	147	14	10	14	398	24	10	19	114
5	10	19	61	15	9.5	14	147	25	10	17	97
6	10	18	48	16	9.0	14	70	26	11	15	82
7	10	19	41	17	8.0	15	80	27	12	15	77
8	12	18	44	18	8.0	16	79	28	13	16	70
9	12	18	49	19	8.5	17	74	29	12	15	67
10	11	20	55	20	8.5	21	70	30	15	16	59
								31	17	------	116

Monthly discharge, in second-feet, of Swannanoa River at Swannanoa, N. C., 1930–31

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
1930–31				1930–31			
October	28	12	15.4	August	137	27	64.7
November	277	17	61.3	September	92	13	27.0
December	181	31	54.7				
January	181	40	61.3	The year	1,180	12	69.0
February	67	35	47.4				
March	158	40	64.0	1931			
April	1,180	82	243	October	17	8.0	10.6
May	398	53	120	November	21	14	17.3
June	63	21	34.6	December	398	18	99.9
July	79	20	35.9				

NORTH FORK OF SWANNANOA RIVER NEAR BLACK MOUNTAIN, N. C.

LOCATION.—Water-stage recorder a quarter of a mile downstream from emergency pumping plant of Asheville water department, 3 miles downstream from forks of river, and 3 miles northwest of Black Mountain, Buncombe County.

DRAINAGE AREA.—23 square miles.

RECORDS AVAILABLE.—January, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year (estimated), 1,050 second-feet Apr. 4 (gage height, 3.83 feet); minimum, 3.15 second-feet Oct. 18 (gage height, 1.11 feet).

1926–1931: Maximum discharge (estimated), 5,050 second-feet Aug. 15, 1928 (gage height, 7.04 feet); minimum, 0.73 second-foot July 20, 21, 1926 (gage height, 0.88 foot).

REMARKS.—Records good except those above 1,200 second-feet and those estimated for Feb. 9–11, which are fair. The city of Asheville diverted an average of 3.48 million gallons (5.4 second-feet) daily 3 miles above station for water supply. Emergency pumping plant not in operation during year.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	6.9	61	16.1	21	33	73	53	30	5.8	13.7	19.2
2	5.0	6.1	40	14.4	19.2	30	66	52	23	5.6	13.0	16.9
3	4.50	5.8	30	14.4	17.8	27	73	46	19.9	5.9	13.4	45
4	4.20	6.1	23	14.8	16.9	24	498	44	18.2	9.2	12.4	46
5	4.05	6.7	22	119	16.5	22	206	44	16.5	12.4	21	30
6	3.90	6.3	103	96	15.7	21	140	63	15.7	10.2	18.2	22
7	3.75	6.3	71	68	14.8	22	108	140	15.7	8.7	21	17.8
8	4.35	6.7	52	58	15.7	34	101	131	15.2	7.6	48	15.7
9	5.0	7.4	41	49	30	27	98	92	13.7	9.2	37	15.2
10	4.50	7.6	34	43	27	23	88	78	13.0	10.5	22	17.8
11	4.20	9.7	29	40	25	21	84	69	12.0	7.8	16.1	13.4
12	3.90	53	23	41	22	19.9	73	68	11.3	6.3	36	11.0
13	3.75	73	19.9	38	22	19.2	64	61	11.0	6.1	42	9.4
14	3.90	38	17.3	33	43	19.9	62	56	11.3	6.7	22	8.7
15	4.05	83	16.1	29	34	31	58	52	13.0	6.3	19.9	8.0
16	3.75	197	14.4	26	29	25	52	46	11.0	7.0	17.8	7.6
17	3.60	123	14.8	25	40	21	49	45	10.0	8.4	14.8	6.9
18	3.30	96	13.0	26	43	19.2	48	43	9.2	15.4	12.4	6.3
19	3.30	58	12.7	27	40	18.2	45	42	8.7	43	12.7	5.9
20	3.30	43	12.4	26	35	16.9	42	43	8.0	33	94	5.6
21	3.45	32	11.0	22	30	16.5	43	59	9.2	17.5	76	5.2
22	3.45	24	10.5	21	27	27	310	51	10.0	53	73	4.86
23	3.60	19.2	9.7	19.9	24	22	142	46	10.2	22	64	4.86
24	4.20	16.5	8.9	19.2	22	26	110	44	8.9	14.1	45	4.68
25	4.05	14.8	8.4	19.9	28	30	90	41	7.8	16.1	33	4.35
26	3.90	13.4	31	22	24	26	88	37	7.6	13.0	31	4.50
27	4.20	12.4	38	24	23	32	82	33	7.1	21	78	4.05
28	4.68	10.2	29	25	23	112	69	30	6.5	32	44	3.75
29	10.5	9.4	23	24	-------	103	62	28	5.9	22	43	3.60
30	10.2	30	19.9	22	-------	69	56	24	5.8	21	37	3.45
31	8.0	-------	17.3	22	-------	64	-------	26	-------	16.9	26	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	10.5	3.30	4.58	May	140	24	54.4
November	197	5.8	34.0	June	30	5.8	12.2
December	103	8.4	27.6	July	53	5.6	15.3
January	119	14.4	33.7	August	94	12.4	34.1
February	43	14.8	26.0	September	46	3.45	12.4
March	112	16.5	32.3				
April	498	42	103	The year	498	3.30	32.4

BEETREE CREEK NEAR SWANNANOA, N. C.

LOCATION.—Water-stage recorder 200 feet upstream from intake to Asheville water supply, 1,000 feet upstream from Beetree Reservoir, and 4 miles north of Swannanoa, Buncombe County.

DRAINAGE AREA.—5.7 square miles.

RECORDS AVAILABLE.—February, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 204 second-feet Apr. 22 (gage height, 3.55 feet); minimum, 1.16 second-feet several times during October (gage height, 0.49 foot).

1926–1931: Maximum discharge, 1,060 second-feet Aug. 15, 1928 (gage height, 5.40 feet); minimum, 0.67 second-foot July 22, 1926, Aug. 6, 1930 (gage height, 0.34 foot).

REMARKS.—Records excellent except those from 50 second-feet to 200 second-feet, which are good, and those for high stages and for estimated periods, Oct. 1, Apr. 12, 13, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	2.15	11.2	5.4	5.7	5.4	15.1	14.7	7.5	1.72	3.0	8.0
2	1.49	2.05	8.6	5.3	5.4	5.1	15.4	13.6	13.0	1.68	3.2	7.8
3	1.41	2.0	7.8	5.4	5.3	4.95	18.3	12.6	11.7	1.64	2.8	16.9
4	1.34	2.55	7.2	5.6	5.2	4.8	84	11.5	5.1	2.5	6.6	13.2
5	1.30	3.25	7.5	29	5.1	4.6	52	11.9	4.75	2.65	7.6	10.2
6	1.30	3.7	19.1	26	4.85	4.8	35	13.6	4.6	2.7	4.5	8.4
7	1.19	3.55	16.3	19.6	4.8	5.2	28	22	4.5	1.90	4.25	7.0
8	1.64	3.55	13.6	17.0	4.8	6.1	26	23	4.4	1.68	17.9	6.3
9	1.85	4.0	11.5	14.5	6.8	5.3	23	20	4.1	4.1	8.3	8.1
10	1.64	4.5	10.2	12.8	6.1	5.1	20	17.8	3.8	2.75	5.6	7.5
11	1.80	4.8	9.1	11.9	5.3	5.3	19.4	16.0	3.55	1.85	4.45	5.7
12	1.45	10.0	8.1	11.5	5.2	5.4	18	16.3	3.4	1.64	4.55	5.0
13	1.37	15.4	7.4	10.3	5.3	5.5	16	15.1	3.35	1.53	4.25	4.5
14	1.41	10.3	6.7	9.0	6.6	6.0	13.8	13.8	3.85	1.53	3.40	4.2
15	1.45	14.5	6.1	8.4	5.5	7.0	13.2	12.6	4.45	2.40	3.55	3.95
16	1.37	34	5.5	8.0	5.4	6.1	12.5	11.7	4.2	1.85	3.05	3.7
17	1.30	32	5.7	7.9	6.9	5.7	11.7	11.2	3.2	4.0	2.8	3.5
18	1.19	28	5.4	8.0	6.7	5.7	12.3	10.5	2.9	2.4	2.6	3.25
19	1.19	19.4	5.5	8.4	6.2	5.5	11.7	9.7	2.75	3.4	5.2	3.1
20	1.16	14.7	5.0	7.8	6.0	5.3	10.7	9.4	2.6	2.45	31	3.1
21	1.16	11.9	4.7	7.0	5.7	5.3	11.2	9.2	3.55	3.8	19.6	3.0
22	1.16	9.8	4.55	6.8	5.5	6.9	82	8.6	3.1	6.0	22	2.75
23	1.23	8.4	4.2	6.7	5.4	7.0	44	8.3	2.75	2.45	21	3.6
24	1.80	7.5	3.95	6.4	5.3	8.8	31	7.8	2.6	1.85	14.9	3.05
25	1.45	6.7	3.95	6.3	5.9	9.4	25	7.3	2.4	2.35	11.4	2.6
26	1.34	6.1	9.7	6.5	5.5	8.6	23	7.0	2.3	2.7	15.2	2.75
27	1.30	5.3	9.0	6.5	5.0	9.8	20	6.5	2.15	2.85	20	2.5
28	1.41	4.8	7.7	6.4	5.2	14.5	17.8	6.1	1.95	2.5	13.8	2.5
29	7.3	4.75	7.0	6.1	-------	17.6	16.6	12.6	1.76	2.3	14.9	2.7
30	3.3	8.0	6.0	6.0	-------	14.7	15.1	11.9	1.72	2.1	12.1	3.0
31	2.5	-------	5.8	5.9	-------	13.6	-------	8.2	-------	2.25	9.4	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7.3	1.16	1.69	0.296	0.34
November	34	2.00	9.59	1.68	1.87
December	19.1	3.95	7.87	1.38	1.59
January	29	5.3	9.75	1.71	1.97
February	6.9	4.80	5.59	.981	1.02
March	17.6	4.60	7.26	1.27	1.46
April	84	10.7	24.7	4.33	4.83
May	23	6.1	12.3	2.16	2.49
June	13.0	1.72	4.07	.714	.80
July	6.0	1.53	2.50	.439	.51
August	31	2.60	9.77	1.71	1.97
September	16.9	2.50	5.40	.947	1.06
The year	84	1.16	8.37	1.47	19.91

PIGEON RIVER AT CANTON, N. C.

LOCATION.—Water-stage recorder a third of a mile above State highway bridge at Canton, Haywood County.

DRAINAGE AREA.—134 square miles.

RECORDS AVAILABLE.—May, 1907, to June, 1909; December, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,420 second-feet Apr. 22 (gage height, 7.73 feet); minimum, 54 second-feet several times during October and September (gage height, 0.60 foot).

1907–1909, 1928–1931: Maximum discharge, 6,860 second-feet Sept. 26, 1929 (gage height, 8.90 feet); minimum, 39 second-feet Sept. 3, 1930.

REMARKS.—Records excellent. Slight regulation from operation of gristmill at Woodrow.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	64	196	181	135	383	600	392	184	91	231	93
2	77	60	127	149	132	279	482	388	166	89	187	97
3	75	62	115	146	127	260	536	350	154	93	127	273
4	73	70	113	143	127	242	1,910	326	149	122	115	174
5	72	80	132	887	127	220	1,090	326	140	140	99	122
6	69	83	906	482	122	220	862	410	143	143	101	110
7	67	78	379	338	120	276	704	432	138	103	303	99
8	73	73	282	310	132	439	650	399	154	87	169	93
9	95	73	234	271	284	286	605	346	132	83	143	89
10	80	75	210	245	222	260	555	326	127	108	115	83
11	77	93	197	228	154	245	525	302	122	87	108	80
12	72	176	181	267	149	231	482	294	182	80	120	78
13	67	218	166	245	149	220	451	282	235	78	120	72
14	67	120	157	217	388	220	428	271	151	99	101	73
15	67	364	146	214	204	245	379	256	157	99	146	72
16	67	694	140	238	191	217	362	242	138	73	130	72
17	64	447	146	252	283	197	354	234	125	69	105	77
18	62	356	143	204	290	191	358	245	115	122	103	72
19	62	238	146	231	245	184	366	234	113	157	105	67
20	60	200	138	197	214	178	346	252	108	120	105	69
21	60	178	120	172	197	181	472	260	120	110	135	67
22	60	160	135	172	187	204	2,510	228	171	151	345	63
23	62	149	130	166	184	207	929	220	127	95	278	64
24	67	135	105	160	178	252	694	204	115	91	169	67
25	66	125	146	160	242	275	610	197	122	95	138	62
26	59	115	368	157	200	234	570	194	187	183	125	69
27	59	93	302	154	200	290	500	197	120	171	120	70
28	59	101	220	157	243	884	451	181	103	250	105	63
29	108	108	194	146	-------	607	420	175	97	122	149	59
30	87	145	169	140	-------	424	397	169	93	117	125	59
31	69	-------	163	140	-------	452	-------	187	-------	165	101	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	108	59	70.4	0.525	0.61
November	694	60	164	1.22	1.36
December	906	105	203	1.51	1.74
January	887	140	231	1.72	1.98
February	388	120	194	1.45	1.51
March	884	178	290	2.16	2.49
April	2,510	346	653	4.87	5.43
May	432	169	275	2.05	2.36
June	235	93	140	1.04	1.16
July	250	69	116	0.866	1.00
August	345	99	146	1.09	1.26
September	273	59	86.9	0.649	0.72
The year	2,510	59	214	1.60	21.62

PIGEON RIVER NEAR HEPCO, N. C.

LOCATION.—Water-stage recorder three-quarters of a mile downstream from Jonathan Creek and 2½ miles upstream from Hepco and mouth of Fines Creek, Haywood County.

DRAINAGE AREA.—342 square miles.

RECORDS AVAILABLE.—July, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,040 second-feet Apr. 22 (gage height, 7.70 feet); minimum, 131 second-feet Sept. 30 (gage height, 1.03 feet).

1927–1931: Maximum discharge (estimated), 30,300 second-feet Aug. 16, 1928; minimum, 106 second-feet Sept. 3, 4, 1930 (gage height, 1.00 foot).

REMARKS.—Records good except those above 5,000 second-feet and those for estimated periods, Nov. 9, 10, Aug. 3, 4, 6, 10, 11, 14, 15, 17–19, 25, which are fair. Some regulation from storage at Lake Junaluska and operation of mill at Canton.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	338	474	341	324	618	1,200	748	453	213	448	210
2	198	166	334	282	324	511	1,030	748	391	207	364	210
3	192	169	299	338	324	474	900	689	360	217	306	652
4	192	189	292	316	324	461	3,590	638	349	310	272	501
5	192	217	286	1,300	324	427	2,550	638	338	382	286	296
6	189	213	927	1,280	327	427	1,980	689	330	406	252	256
7	183	195	700	838	324	436	1,600	838	327	272	473	229
8	195	192	516	778	324	733	1,440	808	341	223	409	213
9	242	201	466	718	492	521	1,300	672	324	213	345	201
10	223	207	440	672	620	484	1,160	644	316	246	265	192
11	210	210	411	644	383	461	1,100	596	316	213	239	186
12	198	259	387	644	360	444	998	596	320	189	294	180
13	183	470	360	644	356	436	869	575	639	207	308	171
14	177	292	334	461	817	427	808	560	411	229	256	166
15	177	544	310	403	521	479	748	530	391	246	265	166
16	177	1,150	296	395	453	436	718	506	352	223	303	163
17	174	1,010	306	436	540	407	683	497	316	204	259	163
18	163	741	316	440	606	391	701	559	313	272	252	169
19	157	497	320	466	530	379	748	612	310	306	262	157
20	155	423	320	427	474	371	649	516	306	269	293	155
21	157	379	272	379	444	375	720	606	364	314	383	155
22	155	352	282	356	427	448	3,530	497	419	463	502	149
23	155	330	272	371	415	466	1,760	492	349	262	660	152
24	171	306	242	360	407	560	1,300	457	289	276	360	160
25	174	289	236	352	492	570	1,130	436	265	372	279	146
26	163	272	622	345	448	488	1,130	453	349	749	252	155
27	149	249	749	345	423	530	998	448	282	588	249	166
28	152	229	474	345	423	1,180	869	411	239	453	236	149
29	259	249	239	330	-------	1,300	808	399	223	316	334	141
30	269	316	371	324	-------	808	748	453	213	345	324	136
31	360	-------	313	324	-------	748	-------	419	-------	332	229	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	360	149	192	0.561	0.65
November	1,150	166	355	1.04	1.16
December	927	236	392	1.15	1.33
January	1,300	282	505	1.48	1.71
February	817	324	437	1.28	1.33
March	1,300	371	542	1.58	1.82
April	3,590	649	1,260	3.68	4.11
May	838	399	572	1.67	1.92
June	639	213	340	.994	1.11
July	749	189	307	.898	1.04
August	660	229	321	.939	1.08
September	652	136	205	.599	.67
The year	3,590	136	451	1.32	17.93

PIGEON RIVER AT HARTFORD, TENN.

LOCATION.—Water-stage recorder 600 feet below highway bridge at Hartford, Cocke County. Zero of gage is 1,245.84 feet above mean sea level.

DRAINAGE AREA.—538 square miles.

RECORDS AVAILABLE.—August, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,160 second-feet Apr. 4 (gage height, 7.24 feet); minimum, 35 second-feet Oct. 2 (gage height, 0.87 foot). 1925–1931: Maximum discharge, about 17,200 second-feet Aug. 16, 1928 (gage height, 10.2 feet); minimum, 11 second-feet Aug. 17, 18, 1930 (gage height, 0.62 foot).

REMARKS.—Records fair. Discharge based on daily reading of staff gage Dec. 30 to Jan. 3. Considerable regulation caused by operation of hydroelectric plant 5 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	126	774	660	144	171	1,200	1,100	1,040	458	594	705
2	386	63	646	675	600	818	1,170	885	882	464	274	584
3	392	336	716	650	684	930	1,160	735	902	399	606	1,530
4	252	342	692	298	678	955	4,000	1,370	902	99	782	1,320
5	44	360	695	1,040	684	948	4,450	1,090	906	126	1,120	812
6	388	396	516	1,380	589	935	3,630	1,100	706	798	933	360
7	444	338	363	1,350	232	630	3,440	1,100	362	546	1,020	620
8	407	182	1,030	1,180	70	202	2,740	1,020	935	510	740	765
9	387	66	1,070	1,020	602	849	2,580	698	982	514	369	758
10	348	362	1,010	854	594	948	2,050	422	930	492	780	724
11	186	353	996	454	606	957	1,930	1,150	730	296	832	644
12	48	420	726	991	687	956	1,830	958	780	91	768	384
13	445	452	254	1,020	674	941	1,870	942	506	494	742	99
14	443	448	110	1,010	828	607	1,180	970	80	490	684	466
15	418	264	647	946	344	186	1,090	1,120	498	472	353	486
16	423	304	642	958	924	645	1,050	882	479	456	132	485
17	382	818	600	856	1,010	740	1,230	435	484	487	540	460
18	214	907	480	548	980	705	1,010	1,010	491	391	630	468
19	61	688	517	946	928	711	704	1,060	509	335	638	288
20	448	604	252	1,030	915	579	1,350	1,080	271	572	647	78
21	478	614	78	994	689	318	1,080	1,020	98	664	598	453
22	472	343	474	975	180	109	3,580	862	522	1,010	639	474
23	478	134	470	970	630	574	2,380	565	547	1,200	478	460
24	464	600	346	680	946	710	1,850	160	478	1,380	685	346
25	180	606	64	294	1,020	750	1,630	675	461	546	720	331
26	58	621	338	869	902	702	1,700	692	462	226	728	216
27	415	247	408	877	822	688	1,740	778	280	669	745	56
28	448	825	346	986	600	626	1,090	908	48	807	652	333
29	410	674	623	971	------	617	1,380	878	470	694	559	334
30	376	115	660	672	------	954	1,160	942	520	700	249	348
31	224	------	827	346	------	1,070	------	578	------	718	602	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	478	44	339	0.630	0.73
November	907	63	420	.781	.87
December	1,070	64	560	1.04	1.20
January	1,380	294	855	1.59	1.83
February	1,020	70	663	1.23	1.28
March	1,070	109	695	1.29	1.49
April	4,450	704	1,910	3.55	3.96
May	1,370	160	877	1.63	1.88
June	1,040	48	575	1.07	1.19
July	1,380	91	552	1.03	1.19
August	1,120	132	638	1.19	1.37
September	1,530	56	513	.954	1.06
The year	4,450	44	715	1.33	18.05

JONATHAN CREEK NEAR COVE CREEK, N. C.

LOCATION.—Water-stage recorder 500 yards downstream from ford, three-quarters of a mile upstream from confluence with Pigeon River, and 2 miles downstream from mouth of Cove Creek and Cove Creek post office, Haywood County.

DRAINAGE AREA.—67 square miles.

RECORDS AVAILABLE.—May, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,160 second-feet Apr. 4 (gage height, 4.43 feet); minimum, 34 second-feet several times in October (gage height, 0.83 foot).

1930–31: Maximum discharge, that of Apr. 4, 1931; minimum, 24 second-feet Sept. 2, 3, 1930 (gage height, 0.73 foot).

REMARKS.—Records excellent. Slight regulation from operation of gristmills upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	40	99	66	61	92	187	169	94	45	77	48
2	41	38	70	65	60	86	158	167	86	45	74	54
3	41	38	63	63	59	84	156	149	81	51	58	190
4	40	43	60	62	59	82	816	141	77	67	65	90
5	39	45	64	216	58	78	488	147	76	62	66	67
6	38	43	128	154	56	77	400	164	75	69	75	60
7	38	39	84	114	57	84	332	162	74	54	88	55
8	45	38	74	108	61	102	302	145	75	47	84	52
9	48	37	68	99	156	86	279	141	69	46	70	54
10	42	40	65	92	100	85	253	133	68	47	61	48
11	40	41	64	86	81	82	258	130	66	43	66	47
12	38	65	62	119	75	81	220	137	68	41	69	46
13	38	68	58	99	98	80	203	128	105	46	58	45
14	37	51	57	90	200	84	190	122	90	49	53	44
15	38	122	55	87	122	98	180	114	86	47	57	43
16	37	282	53	96	108	82	171	110	82	45	52	43
17	36	162	57	99	161	77	162	110	68	46	48	42
18	36	112	57	108	139	76	178	114	62	77	59	42
19	35	85	60	92	122	75	158	119	60	62	58	41
20	35	73	58	82	112	72	149	124	58	67	82	41
21	35	66	56	75	104	75	145	133	63	110	108	38
22	35	61	60	75	96	90	405	114	70	127	102	38
23	36	57	54	73	92	102	236	114	83	62	90	45
24	44	54	52	72	90	117	208	100	63	91	68	42
25	38	53	72	70	119	107	196	96	61	78	59	38
26	36	52	191	69	94	93	238	115	61	171	55	46
27	35	50	126	70	89	118	201	102	52	175	57	43
28	36	52	94	69	89	253	180	90	50	114	53	39
29	76	52	82	65	-------	196	169	96	47	73	90	38
30	50	100	73	64	-------	152	162	113	45	64	60	36
31	42	-------	73	62	-------	147	-------	96	-------	89	52	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	76	35	40.3	0.601	0.70
November	282	37	68.6	1.02	1.14
December	191	52	73.8	1.10	1.27
January	216	62	89.1	1.33	1.53
February	200	56	97.1	1.45	1.51
March	253	72	100	1.49	1.72
April	816	145	246	3.67	4.10
May	169	90	126	1.88	2.17
June	105	45	70.5	1.05	1.17
July	175	41	71.3	1.06	1.22
August	108	48	68.2	1.02	1.18
September	190	36	51.7	.772	.86
The year	816	35	91.7	1.37	18.57

NOLICHUCKY RIVER AT POPLAR, N. C.

LOCATION.—Staff gage at Poplar, Mitchell County, 4 miles downstream from Cane River and 5 miles upstream from State line.
DRAINAGE AREA.—609 square miles.
RECORDS AVAILABLE.—July, 1925, to September, 1931.
EXTREMES.—Maximum discharge during year, 9,810 second-feet Apr. 4 (gage height, 6.30 feet); minimum, 230 second-feet Oct. 22 (gage height, 1.18 feet).
1925–1931: Maximum discharge 34,600 second-feet Aug. 16, 1928 (gage height, 14.7 feet); minimum, 89 second-feet Sept. 7, 1925.
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	339	480	790	432	695	2,210	1,110	1,000	372	742	546
2	326	306	605	596	440	742	2,050	1,000	890	388	890	890
3	346	306	695	456	418	695	1,900	1,000	695	650	742	2,050
4	313	346	742	571	372	546	5,210	890	605	742	840	2,210
5	288	440	695	1,610	352	588	6,150	840	650	1,170	1,170	1,820
6	288	488	1,480	2,550	425	554	3,100	1,000	790	1,060	1,290	1,420
7	258	358	1,540	2,050	464	580	2,730	1,420	588	742	1,060	890
8	288	332	1,000	2,050	496	650	2,550	1,900	605	580	945	580
9	395	346	840	1,750	432	605	2,380	1,820	554	528	890	456
10	332	358	742	1,420	464	588	2,050	1,350	496	742	790	358
11	306	425	695	1,000	580	546	1,900	1,000	480	605	695	488
12	320	372	650	890	650	520	1,610	945	537	496	840	488
13	313	840	554	790	790	504	1,350	945	605	440	1,480	418
14	339	790	512	742	695	537	1,230	890	945	554	1,290	352
15	320	790	504	695	605	588	1,170	840	1,170	496	1,000	432
16	346	1,610	448	742	650	650	1,060	790	1,060	472	840	380
17	306	1,540	456	695	650	546	1,000	890	890	464	742	372
18	288	1,000	528	742	742	571	1,060	890	742	695	1,000	332
19	300	840	546	554	695	546	1,000	790	472	695	1,290	313
20	294	695	480	480	596	588	890	742	395	588	1,820	388
21	264	546	432	440	650	650	945	1,060	346	742	1,610	346
22	235	496	448	520	605	650	3,690	1,420	1,000	840	1,290	332
23	258	596	496	650	520	790	3,100	1,610	1,060	945	1,000	320
24	294	571	456	650	546	840	1,610	1,290	650	790	695	358
25	326	464	410	528	580	742	1,610	1,000	580	695	605	294
26	282	410	596	546	650	695	1,680	1,060	504	1,000	402	320
27	313	464	1,230	546	695	650	1,420	1,000	472	1,420	402	320
28	313	562	1,350	520	605	890	1,230	790	425	1,540	790	320
29	380	528	1,170	480	-------	1,110	1,110	742	395	1,290	890	282
30	504	448	945	448	-------	1,290	1,110	742	358	695	790	294
31	380	-------	840	456	-------	1,110	-------	790	-------	742	650	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	504	235	317	0.521	0.60
November	1,610	306	587	.964	1.08
December	1,540	410	728	1.20	1.38
January	2,550	440	870	1.43	1.65
February	790	352	564	.926	.96
March	1,290	504	686	1.13	1.30
April	6,150	890	2,000	3.28	3.66
May	1,900	742	1,050	1.72	1.98
June	1,170	346	665	1.09	1.22
July	1,540	372	748	1.23	1.42
August	1,820	402	951	1.56	1.80
September	2,210	282	612	1.00	1.12
The year	6,150	235	816	1.34	18.17

NOLICHUCKY RIVER AT EMBREEVILLE, TENN.

LOCATION.—Chain gage at county highway bridge at Embreeville, Washington County, 3½ miles northwest of Erwin. Zero of gage is 1,513.04 feet above mean sea level.

DRAINAGE AREA.—795 square miles.

RECORDS AVAILABLE.—July, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,510 second-feet Apr. 4 (gage height, 7.10 feet); minimum, 286 second-feet Oct. 18, 22 (gage height, 2.11 feet).

1920–1931: Maximum discharge, 35,300 second-feet Aug. 16, 1928 (gage height, 13.8 feet); minimum, 85 second-feet Sept. 8, 9, 1925 (gage height, 1.60 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	400	463	785	785	660	785	2,200	1,480	1,920	463	980	785
2	387	407	832	582	620	930	2,830	1,360	1,360	435	1,030	742
3	414	368	785	582	582	832	2,200	1,300	1,080	620	1,030	2,670
4	387	414	742	742	545	785	5,240	1,140	930	832	930	3,170
5	348	442	660	1,920	545	742	6,800	1,140	880	1,190	1,360	1,660
6	324	545	660	3,910	582	700	5,000	1,190	1,140	1,540	1,300	1,240
7	348	428	1,660	2,060	545	620	4,320	1,540	1,030	1,080	2,200	930
8	318	421	1,240	1,540	545	785	4,110	2,510	1,030	880	1,360	880
9	313	407	1,140	1,300	545	880	3,910	1,790	930	660	1,300	832
10	324	414	1,080	1,080	785	742	3,000	1,660	785	1,030	980	742
11	302	449	1,030	980	785	742	2,830	1,420	700	880	1,030	785
12	318	463	785	1,030	700	742	2,350	1,360	660	620	1,190	620
13	324	470	742	1,140	700	700	1,920	1,300	620	545	1,920	582
14	335	832	742	980	1,080	700	1,660	1,240	930	742	1,140	545
15	324	742	620	880	1,080	832	1,660	1,140	1,360	660	742	545
16	335	785	660	742	930	832	1,480	1,030	1,190	545	1,190	508
17	302	1,790	620	832	930	785	1,360	1,030	880	620	832	470
18	291	1,300	620	930	980	742	1,300	1,140	700	880	742	421
19	324	1,030	620	880	930	742	1,360	1,080	620	1,140	620	470
20	335	832	582	930	930	742	1,240	930	582	1,360	1,480	508
21	313	700	620	832	785	660	1,140	1,660	545	1,140	2,510	470
22	291	620	660	742	700	700	3,170	1,420	700	1,660	2,830	449
23	324	582	582	700	742	880	4,540	2,200	1,140	1,480	3,000	435
24	361	545	620	742	742	980	3,000	1,660	880	1,030	1,540	470
25	354	508	545	700	742	930	2,350	1,360	582	980	1,420	421
26	324	508	620	700	832	930	2,200	1,420	545	1,790	1,140	463
27	324	463	742	700	742	832	2,200	1,360	545	1,660	1,080	470
28	313	449	1,080	790	709	1,030	1,920	1,190	508	1,360	1,030	463
29	394	456	1,030	700	-------	2,670	1,660	1,080	449	1,190	1,190	449
30	545	470	930	660	-------	1,790	1,480	1,080	463	930	1,140	386
31	508	-------	930	660	-------	1,420	-------	1,080	-------	1,030	880	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	545	291	349	0.439	0.51
November	1,790	368	610	.767	.86
December	1,660	545	805	1.01	1.16
January	3,910	582	1,020	1.28	1.48
February	1,080	545	749	.942	.98
March	2,670	620	909	1.14	1.31
April	6,800	1,140	2,680	3.37	3.76
May	2,510	930	1,360	1.71	1.97
June	1,920	449	856	1.08	1.20
July	1,790	435	999	1.26	1.45
August	3,000	620	1,330	1.67	1.92
September	3,170	380	786	.989	1.10
The year	6,800	291	1,040	1.31	17.70

NOLICHUCKY RIVER NEAR MORRISTOWN, TENN.

LOCATION.—Water-stage recorder at Jones Bridge on main road between Morristown and Newport, 3 miles below mouth of Bent Creek and 9 miles southeast of Morristown, Hamblen County. Zero of gage is 1,004.40 feet above mean sea level.

DRAINAGE AREA.—1,690 square miles.

RECORDS AVAILABLE.—November, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,800 second-feet Apr. 5 (gage height, 11.8 feet); minimum mean daily discharge, about 226 second-feet Oct. 20 (gage height, estimated, 1.59 feet).

1920–1931: Maximum discharge, about 27,700 second-feet Feb. 24, 1927, Aug. 16, 1928; maximum gage height, 18.9 feet Aug. 16, 1928; minimum discharge, 22 second-feet Sept. 7, 28, 1925 (gage height, 1.00 foot).

REMARKS.—Records good except those for estimated periods, Dec. 13–20, Apr. 12–19, 25–28, July 18, which are fair. Considerable regulation at low water caused by operation of power plant 22 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	530	466	504	1,140	926	1,160	1,970	2,250	5,180	782	1,320	1,390
2	556	878	1,170	968	591	1,200	3,010	2,110	3,680	840	1,270	1,160
3	557	552	1,170	1,110	1,120	1,400	3,480	1,990	2,280	932	1,480	2,150
4	574	493	1,250	813	1,180	1,260	7,870	2,040	1,800	1,130	1,480	4,850
5	490	602	1,140	988	1,210	1,190	12,600	1,880	1,630	857	1,750	3,630
6	590	630	637	1,810	1,180	1,130	12,000	1,760	1,790	1,290	2,110	2,220
7	460	556	502	3,850	1,180	1,100	8,940	1,910	1,800	1,970	2,360	1,810
8	398	630	348	2,710	957	890	6,740	2,530	1,700	1,500	2,600	1,600
9	616	1,030	1,010	2,260	716	912	5,820	3,170	1,650	1,330	1,880	1,380
10	509	574	1,110	2,000	1,380	1,240	4,960	2,760	1,390	1,640	1,800	1,210
11	424	502	1,140	1,680	1,250	1,110	5,330	2,500	1,230	1,070	1,450	1,180
12	452	413	1,140	1,610	1,180	1,080	4,800	2,230	1,200	820	1,810	1,150
13	245	548	1,100	1,610	1,250	1,070	4,000	2,200	1,180	970	2,170	944
14	664	866	1,000	1,640	3,410	1,040	3,400	2,020	980	1,470	2,180	812
15	522	1,110	700	1,480	2,300	920	3,600	1,900	1,240	1,770	1,520	1,270
16	304	1,020	1,050	1,220	1,480	850	3,200	1,680	2,000	1,400	1,140	1,230
17	454	617	1,050	1,040	1,310	1,230	2,800	1,510	1,640	1,280	1,320	1,270
18	476	1,430	1,050	1,110	1,340	1,150	2,400	1,680	1,320	1,060	1,220	1,220
19	496	1,720	1,000	2,060	1,260	1,090	2,400	1,730	1,160	2,090	1,100	1,200
20	226	1,460	1,000	1,970	1,290	1,060	2,150	1,750	1,090	749	2,060	1,080
21	532	1,180	968	1,440	1,380	944	1,910	1,950	950	2,820	3,750	738
22	652	1,090	766	1,310	1,200	905	3,010	2,310	810	4,620	3,260	499
23	500	1,000	1,240	1,150	1,320	682	6,930	2,340	1,210	3,250	3,380	460
24	508	604	1,180	1,030	1,250	1,180	5,240	2,700	1,110	2,600	3,640	552
25	520	1,090	952	844	2,320	1,140	4,200	2,400	1,180	2,460	2,470	438
26	428	1,320	776	973	2,410	1,180	3,750	2,100	1,130	2,670	1,890	585
27	242	1,190	1,330	1,120	1,590	1,170	3,900	2,160	1,090	2,720	1,580	896
28	412	872	971	1,020	1,300	1,190	3,300	1,940	919	2,450	1,540	799
29	638	1,180	522	1,020	-------	1,780	2,780	1,700	532	2,030	1,550	1,080
30	690	626	992	1,060	-------	2,740	2,430	1,510	840	1,680	1,440	462
31	440	-------	1,100	984	-------	2,260	-------	2,030	-------	1,410	1,620	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	690	226	487	0.288	0.33
November	1,720	413	875	.518	.58
December	1,330	348	963	.570	.66
January	3,850	813	1,450	.858	.99
February	3,410	591	1,400	.828	.86
March	2,740	682	1,200	.710	.82
April	12,600	1,910	4,630	2.74	3.06
May	3,170	1,510	2,090	1.24	1.43
June	5,180	532	1,520	.899	1.00
July	4,620	749	1,730	1.02	1.18
August	3,750	1,100	1,940	1.15	1.33
September	4,850	438	1,310	.775	.86
The year	12,600	226	1,630	.964	13.10

LITTLE PIGEON RIVER AT SEVIERVILLE, TENN.

LOCATION.—Water-stage recorder at Eckel's farmhouse, half a mile below Sevierville, Sevier County, and confluence of East and West Forks. Zero of gage is 882.26 feet above mean sea level.

DRAINAGE AREA.—346 square miles.

RECORDS AVAILABLE.—November, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 13,500 second-feet Apr. 4 (gage height, 9.50 feet); minimum, 17 second-feet Oct. 14 (gage height, 0.58 foot).

1920–1931: Maximum discharge, about 28,300 second-feet June 29, 1928 (gage height, 15.4 feet); minimum, 5 second-feet Oct. 12, Nov. 3, 1923 (regulated flow).

REMARKS.—Records good. Low-water flow is regulated by power plants on both forks of river.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	174	341	198	174	292	775	440	1,480	150	488	446
2	111	162	311	162	170	287	911	412	815	143	440	372
3	104	150	232	170	154	268	752	372	558	154	539	1,580
4	98	150	202	158	143	254	7,340	335	434	273	423	1,030
5	82	211	186	630	139	228	3,620	346	367	911	708	644
6	85	211	546	1,280	132	215	4,830	335	341	1,530	658	464
7	85	186	565	791	136	211	2,730	482	301	565	738	383
8	77	147	464	598	150	268	1,630	565	282	330	658	311
9	104	111	351	500	520	254	1,480	565	264	330	715	287
10	80	117	282	429	578	219	1,280	617	228	268	532	232
11	69	174	264	383	341	207	2,160	526	211	202	855	223
12	69	228	268	429	273	186	1,530	476	202	162	1,020	211
13	72	452	236	440	287	182	1,080	423	417	139	978	198
14	59	273	211	378	2,260	178	855	394	330	162	665	194
15	69	440	190	316	1,100	259	722	362	254	147	506	174
16	64	903	182	254	672	236	630	311	351	186	394	154
17	72	879	178	264	700	207	552	292	241	513	351	154
18	80	708	166	254	911	190	500	296	198	630	292	147
19	85	434	174	268	871	182	476	539	178	506	264	143
20	80	316	219	264	672	178	434	506	162	417	273	147
21	72	254	202	236	552	178	389	863	154	978	378	136
22	67	219	186	215	464	250	2,380	637	202	2,790	927	124
23	80	190	166	215	400	232	1,430	526	346	855	1,280	117
24	139	162	143	202	362	223	978	446	215	565	700	117
25	124	154	132	202	378	259	768	389	166	578	500	111
26	121	136	223	190	335	236	919	362	170	470	400	111
27	101	117	452	186	301	236	839	325	139	470	458	128
28	91	111	356	198	278	1,150	651	282	136	464	429	98
29	211	111	306	194	-------	1,150	558	264	107	394	1,580	98
30	245	117	259	178	-------	658	482	372	124	330	935	91
31	174	-------	215	186	-------	532	-------	598	-------	372	584	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	245	59	99.8	0.288	0.38
November	903	111	267	.772	.86
December	565	132	265	.766	.88
January	1,280	158	334	.965	1.11
February	2,260	132	480	1.39	1.45
March	1,150	178	310	.896	1.03
April	7,340	389	1,460	4.22	4.71
May	863	264	441	1.27	1.46
June	1,480	107	312	.902	1.01
July	2,790	139	516	1.49	1.72
August	1,580	264	634	1.83	2.11
September	1,580	91	288	.832	.93
The year	7,340	59	448	1.29	17.60

SOUTH FORK OF HOLSTON RIVER AT RIVERSIDE, NEAR CHILHOWIE, VA.

LOCATION.—Chain gage at Riverside Bridge, half a mile downstream from Bebord's flour mill and 5 miles southeast of Chilhowie, Smyth County.

DRAINAGE AREA.—94.5 square miles.

RECORDS AVAILABLE.—November, 1920, to November, 1931 (discontinued). June, 1907, to December, 1909, at site below mouth of Grose Creek, 4½ miles downstream.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to Nov. 14, 1931, 1,660 second-feet Apr. 4 (gage height, 4.85 feet); minimum (caused by closing gates of dam above), 4 second-feet Oct. 3, 1931 (gage height, 0.66 foot).

1920–1931: Maximum discharge, 4,450 second-feet June 12, 1923 (gage height, 7.7 feet); minimum (caused by closing gates of dam above), 3.4 second-feet Sept. 8, 1923 (gage height, 0.28 foot).

Remarks.—Records good. Discharge estimated Dec. 24–26, Dec. 31 to Jan 4. Several small mills above gage cause considerable diurnal fluctuation during low-water periods.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	23	22	35	40	38	52	255	94	334	31	62	38
2	21	24	32	35	37	48	285	90	255	30	52	46
3	32	24	36	35	37	44	384	77	184	54	48	84
4	25	27	34	30	35	44	1,100	67	139	103	46	69
5	24	34	26	212	33	41	860	62	116	95	56	52
6	24	36	84	475	32	40	494	62	105	131	49	44
7	21	32	74	240	32	37	350	67	82	103	45	42
8	24	29	53	146	31	42	384	120	90	70	41	38
9	21	28	42	108	40	41	384	114	69	60	49	35
10	24	26	38	80	43	35	301	99	61	54	42	21
11	22	28	35	70	37	34	240	86	56	44	42	29
12	21	26	30	66	37	41	184	101	56	38	38	30
13	26	27	25	62	36	40	158	101	48	41	45	27
14	20	28	26	57	67	42	139	109	45	36	35	39
15	21	30	24	43	68	52	122	101	41	36	44	25
16	38	35	22	33	70	53	107	94	39	27	29	25
17	23	38	28	38	80	52	95	90	37	27	29	24
18	21	28	28	44	94	47	84	92	31	54	27	30
19	23	30	26	44	100	52	77	116	32	30	26	25
20	24	33	21	41	101	49	69	97	30	35	34	22
21	21	30	26	38	93	47	69	301	28	49	156	21
22	23	38	23	37	84	49	154	367	76	48	367	26
23	22	26	24	35	76	47	270	402	39	168	225	24
24	28	34	20	40	70	54	255	270	32	184	171	22
25	28	33	20	37	64	74	197	225	31	118	114	27
26	24	31	25	37	60	85	184	240	36	101	82	25
27	24	19	124	35	57	76	154	240	29	79	74	25
28	24	34	79	36	49	150	139	184	30	66	64	25
29	38	31	70	37	------	270	124	148	26	55	54	22
30	30	26	53	40	------	198	107	133	26	48	48	24
31	25	------	45	37	------	150	------	122	------	46	39	------

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1931			1931			1931		
1	21	18	11	18	18	21	22	------
2	16	21	12	14	22	22	18	------
3	10	20	13	19	18	23	19	------
4	18	17	14	23	17	24	20	------
5	21	18	15	18	------	25	18	------
6	20	14	16	16	------	26	19	------
7	19	24	17	11	------	27	19	------
8	23	16	18	16	------	28	20	------
9	24	13	19	19	------	29	22	------
10	21	15	20	22	------	30	16	------
						31	18	------

Monthly discharge, in second-feet, of South Fork of Holston River at Riverside, near Chilhowie, Va., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930–31					
October	38	20	24.6	0.260	0.30
November	38	19	29.6	.313	.35
December	124		39.6	.419	.48
January	475		74.5	.788	.91
February	101	31	57.2	.605	.63
March	270	34	67.3	.712	.82
April	1,100	69	257	2.72	3.04
May	402	62	144	1.52	1.75
June	334	26	73.4	.777	.87
July	184	27	66.5	.704	.81
August	367	26	72.0	.762	.88
September	84	21	32.9	.348	.39
The year	1,100	19	78.2	.828	11.23
1931					
October	24	10	18.7	.198	.23
November 1–14	24	13	17.9	.189	.10

SOUTH FORK OF HOLSTON RIVER AT BLUFF CITY, TENN.

LOCATION.—Water-stage recorder at highway bridge at Bluff City, Sullivan County, 250 feet below Virginia & Southwestern Railroad bridge and 1 mile below mouth of Indian Creek. Zero of gage is 1,368.09 feet above mean sea level.

DRAINAGE AREA.—828 square miles.

RECORDS AVAILABLE.—July, 1900, to September, 1931.

EXTREMES.—Maximum discharge during year, 10,300 second-feet Apr. 5 (gage height, 8.44 feet); minimum, 83 second-feet Nov. 29 (gage height, 0.36 foot, caused by regulation).

1900–1931: Maximum stage, 15.0 feet May 22, 1901 (discharge not determined); minimum discharge, that of Nov. 29, 1930.

REMARKS.—Records good. Discharge estimated June 7–13. Operation of small mills upstream causes some diurnal fluctuation.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	163	222	301	524	394	536	1,370	991	3,140	414	852	500
2	186	236	298	394	366	542	2,150	932	2,480	357	1,370	494
3	183	225	276	420	353	506	2,150	852	1,640	328	1,010	957
4	170	213	254	467	348	467	5,930	758	1,240	940	804	1,500
5	191	273	242	940	344	462	8,210	698	1,030	1,080	1,240	924
6	163	301	287	3,070	340	430	4,930	705	1,060	1,550	1,200	735
7	146	301	500	2,480	324	425	4,160	820	950	1,550	1,890	609
8	165	261	548	2,540	328	414	3,460	1,100	900	1,080	1,200	542
9	176	242	489	1,110	399	404	3,070	1,200	850	844	1,010	484
10	202	242	430	836	712	399	2,540	1,080	750	884	828	440
11	208	219	380	772	574	394	2,200	932	700	772	758	414
12	194	254	394	712	518	394	1,790	948	600	567	860	404
13	189	340	380	742	500	371	1,500	1,200	550	456	948	389
14	158	357	324	682	1,890	357	1,320	1,200	560	518	735	366
15	200	328	320	595	1,640	420	1,200	1,110	616	630	588	362
16	191	399	301	467	1,280	489	1,100	1,010	560	478	542	357
17	163	478	294	581	1,110	478	1,000	916	489	414	489	362
18	230	494	242	588	1,200	506	940	982	456	409	462	353
19	194	430	357	758	1,280	500	908	1,280	414	500	489	348
20	170	344	366	720	1,200	484	900	1,030	389	478	712	332
21	148	301	280	652	1,100	450	780	1,690	371	758	1,990	316
22	194	294	304	567	957	435	1,640	1,840	336	1,110	1,890	308
23	208	316	316	518	844	435	2,770	2,370	554	2,710	1,690	316
24	273	298	258	484	765	440	2,100	2,100	542	2,590	1,320	308
25	328	270	210	445	712	430	1,690	1,500	456	2,950	1,080	320
26	245	276	560	420	623	512	1,550	1,740	389	1,420	884	308
27	228	254	1,690	430	567	560	1,690	1,990	376	1,420	772	389
28	178	219	1,200	445	524	796	1,460	1,550	376	1,080	728	357
29	267	191	828	462	-------	1,890	1,280	1,200	332	892	638	336
30	287	287	712	430	-------	1,790	1,110	1,020	312	780	560	320
31	273	-------	489	430	-------	1,320	-------	1,090	-------	884	500	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	328	146	202	0.244	0.28
November	494	191	296	.357	.40
December	1,690	210	446	.539	.62
January	3,070	394	796	.961	1.11
February	1,890	324	757	.914	.95
March	1,890	357	582	.703	.81
April	8,210	780	2,230	2.69	3.00
May	2,370	698	1,220	1.47	1.70
June	3,140	312	781	.943	1.05
July	2,950	328	994	1.20	1.38
August	1,990	462	969	1.17	1.35
September	1,500	308	472	.570	.64
The year	8,210	146	811	.979	13.29

SOUTH FORK OF HOLSTON RIVER AT KINGSPORT, TENN.

LOCATION.—Water-stage recorder half a mile downstream from Carolina, Clinchfield & Ohio Railway bridge and 1 mile upstream from Eastman Kodak plant at Kingsport, Claiborne County. Zero of gage is 1,188.79 feet above mean sea level.

DRAINAGE AREA.—1,960 square miles.

RECORDS AVAILABLE.—September, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 21,000 second-feet Apr. 5 (gage height, 8.42 feet); minimum, 400 second-feet Oct. 13 (gage height, 0.10 foot). 1925–1931: Maximum discharge, about 43,200 second-feet Feb. 24, 1927 (gage height, 13.9 feet); minimum, 350 second-feet Oct. 7, 12, 1925.

REMARKS.—Records good. Discharge estimated Feb. 28 to Mar. 3. Slight regulation during low water caused by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	600	700	808	1,200	1,200	1,330	2,960	2,590	5,720	919	2,100	1,210
2	570	570	1,020	1,120	1,040	1,350	4,960	2,320	5,390	1,090	2,500	1,120
3	590	630	958	997	1,050	1,330	4,650	2,230	3,640	1,080	2,680	2,140
4	590	670	836	1,300	997	1,280	9,300	2,090	2,960	1,460	2,090	4,040
5	580	670	803	1,640	997	1,200	18,800	1,910	2,410	2,500	2,300	2,500
6	590	770	750	7,100	958	1,150	11,400	1,810	2,410	2,680	4,040	1,890
7	552	825	2,090	5,940	971	1,090	10,100	2,050	2,140	2,870	4,650	1,460
8	570	803	1,820	3,840	932	1,150	8,550	2,590	2,070	2,320	3,250	1,350
9	620	770	1,460	2,870	958	1,220	7,580	2,870	1,960	1,650	2,780	1,220
10	630	660	1,270	2,320	1,400	1,160	6,170	2,680	1,720	2,070	2,280	1,150
11	640	720	1,180	1,910	1,440	1,090	5,390	2,320	1,590	1,620	2,160	1,110
12	610	740	1,140	1,890	1,220	1,090	4,540	2,320	1,460	1,300	2,100	1,040
13	507	997	1,090	1,880	1,180	1,090	3,740	2,590	1,410	1,010	2,590	1,010
14	620	1,260	984	1,740	2,590	1,050	3,340	2,590	1,490	1,120	2,190	906
15	561	1,080	919	1,540	3,540	1,180	2,960	2,410	2,320	1,200	1,720	919
16	590	1,240	919	1,270	2,680	1,430	2,680	2,280	1,890	1,110	1,570	893
17	650	1,560	880	1,400	2,410	1,330	2,500	2,090	1,490	1,090	1,320	869
18	620	1,560	792	1,620	2,500	1,300	2,320	2,070	1,350	1,240	1,320	869
19	600	1,430	792	2,030	2,500	1,220	2,190	2,500	1,200	1,260	1,270	847
20	516	1,160	1,010	2,000	2,410	1,220	2,070	2,180	1,150	1,090	1,560	825
21	561	1,010	1,040	1,910	2,250	1,150	1,940	3,250	1,050	1,810	3,060	792
22	543	945	792	1,600	2,100	1,160	2,870	4,140	1,050	2,960	4,040	792
23	561	893	858	1,460	1,740	1,140	7,580	4,440	1,210	5,720	4,440	750
24	670	945	880	1,410	1,720	1,220	5,500	4,540	1,600	4,540	3,440	803
25	750	792	740	1,380	1,570	1,220	4,340	3,440	1,330	5,180	2,780	750
26	740	814	803	1,210	1,490	1,180	3,840	3,840	1,120	3,060	2,280	792
27	630	792	3,250	1,220	1,400	1,350	4,240	4,140	1,050	3,160	1,910	1,080
28	650	650	2,960	1,240	1,350	1,590	3,640	3,440	1,010	2,780	1,600	958
29	640	750	2,180	1,260	-------	3,250	3,160	2,780	945	2,230	1,460	825
30	750	690	1,790	1,210	-------	3,940	2,780	2,500	847	1,840	1,460	803
31	770	-------	1,360	1,150	-------	3,060	--------	2,320	-------	1,930	1,240	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	770	507	615	0.314	0.36
November	1,560	570	903	.461	.51
December	3,250	740	1,230	.628	.72
January	7,100	997	1,960	1.00	1.15
February	3,540	932	1,660	.847	.88
March	3,940	1,050	1,440	.735	.85
April	18,800	1,940	5,200	2.65	2.96
May	4,540	1,810	2,750	1.40	1.61
June	5,720	847	1,900	.969	1.08
July	5,720	919	2,130	1.09	1.26
August	4,650	1,240	2,390	1.22	1.41
September	4,040	750	1,190	.607	.68
The year	18,800	507	1,950	.995	13.47

HOLSTON RIVER NEAR ROGERSVILLE, TENN.

LOCATION.—Water-stage recorder at highway bridge 1,600 feet downstream from Austin Mill and Dam and 3 miles south of Rogersville, Hawkins County. Zero of gage is 1,057.04 feet above mean sea level.

DRAINAGE AREA.—3,060 square miles.

RECORDS AVAILABLE.—March, 1902, to September, 1931.

EXTREMES.—Maximum discharge during year, 33,600 second-feet Apr. 5 (gage height, 10.3 feet); minimum, 590 second-feet Oct. 14 (gage height, −0.10 foot). 1902–1931: Maximum discharge, about 70,900 second-feet Jan. 29, 1918 (gage height, 20.0 feet, old gage); minimum, 438 second-feet Sept. 9, 1925. Maximum stage known, 38.4 feet Mar. 10, 1867.

REMARKS.—Records excellent. Some diurnal fluctuation during low water caused by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	790	1,010	935	1,670	1,520	1,890	4,390	3,760	4,180	1,180	2,460	1,610
2	810	935	1,110	1,660	1,440	1,890	6,170	3,560	7,840	1,280	2,810	1,500
3	760	810	1,230	1,390	1,390	1,960	6,840	3,360	5,660	1,340	3,180	1,710
4	760	850	1,200	1,550	1,330	1,840	16,000	3,080	4,280	1,380	3,180	3,960
5	770	880	1,070	2,370	1,320	1,740	31,300	2,810	3,460	2,120	2,810	3,860
6	750	902	1,100	5,780	1,300	1,680	20,600	2,540	2,990	2,990	3,760	2,630
7	780	1,020	1,300	9,370	1,280	1,630	16,000	2,720	3,080	3,460	5,910	2,040
8	740	1,080	2,540	6,170	1,240	1,630	13,000	3,360	2,540	3,560	4,610	1,820
9	750	1,040	2,280	4,500	1,440	1,610	11,700	4,280	2,540	2,810	3,560	1,600
10	760	1,010	1,880	3,560	1,800	1,830	10,000	4,840	2,200	2,630	2,900	1,470
11	790	913	1,630	2,990	2,370	1,630	8,750	4,070	2,040	2,370	2,460	1,390
12	800	990	1,540	2,540	2,120	1,610	7,260	3,760	1,890	1,880	2,990	1,330
13	790	1,150	1,470	2,630	2,040	1,630	5,910	4,070	1,700	1,610	3,660	1,270
14	730	1,480	1,380	2,540	4,390	1,550	5,060	4,070	1,680	1,440	3,180	1,200
15	800	1,440	1,340	2,370	6,980	1,600	4,500	3,860	2,200	1,440	2,540	1,120
16	730	1,440	1,220	1,960	5,180	1,800	4,180	3,660	2,720	1,520	2,120	1,090
17	750	1,610	1,240	1,760	4,390	2,120	3,760	3,270	2,120	1,370	1,800	1,080
18	840	2,120	1,180	2,200	4,390	2,040	3,270	2,990	1,760	1,540	1,660	1,040
19	780	1,880	1,080	2,900	4,720	1,960	3,270	3,360	1,640	1,680	1,570	1,040
20	780	1,740	1,220	3,080	4,610	1,890	2,990	3,660	1,520	1,540	1,890	1,060
21	730	1,430	1,320	2,720	4,180	1,820	2,810	3,860	1,430	1,670	3,860	1,030
22	730	1,290	1,300	2,370	3,560	1,730	4,610	5,420	1,340	3,180	6,170	1,010
23	700	1,230	1,100	2,120	2,990	1,670	10,700	5,180	1,560	6,560	6,700	1,010
24	800	1,200	1,220	1,960	2,810	1,830	9,060	6,300	1,960	6,840	5,180	968
25	880	1,160	1,120	1,860	2,810	1,740	6,700	5,540	2,040	7,840	3,960	1,020
26	946	1,060	1,340	1,730	2,370	1,830	6,170	5,180	1,670	6,040	3,080	1,000
27	968	1,070	2,810	1,680	2,200	1,960	6,430	6,430	1,460	4,280	2,540	1,100
28	946	1,020	4,610	1,670	2,040	2,370	5,780	5,780	1,390	4,280	2,200	1,380
29	870	891	3,360	1,660	-------	4,070	4,950	4,500	1,350	3,270	2,040	1,140
30	870	957	2,720	1,710	-------	7,120	4,280	3,860	1,230	2,630	1,960	1,060
31	968	-------	2,280	1,570	-------	5,420	--------	3,460	-------	2,370	1,820	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	968	700	802	0.262	0.30
November	2,120	810	1,190	.389	.43
December	4,610	935	1,650	.539	.62
January	9,370	1,390	2,710	.886	1.02
February	6,980	1,240	2,790	.912	.95
March	7,120	1,550	2,160	.706	.81
April	31,300	2,810	8,210	2.68	2.99
May	6,430	2,540	4,080	1.33	1.53
June	7,840	1,230	2,450	.801	.89
July	7,840	1,180	2,840	.928	1.07
August	6,700	1,570	3,180	1.04	1.20
September	3,960	968	1,480	.484	.54
The year	31,300	700	2,790	.912	12.35

HOLSTON RIVER AT STRAWBERRY PLAINS, TENN.

LOCATION.—Water-stage recorder just below County highway bridge 1 mile below Southern Railway bridge at Strawberry Plains, Jefferson County, and 17 miles above mouth of river. Prior to June 9, 1931, a staff gage at same site was used.

DRAINAGE AREA.—3,650 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, about 31,400 second-feet Apr. 6 (gage height, 11.1 feet); minimum, 781 second-feet Oct. 16 (gage height, 0.71 foot).

REMARKS.—Records good except those above 25,000 second-feet and those for estimated periods, which are fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	990	1,110	2,700	1,960	2,700	6,390	5,010	4,020	1,510	3,020	2,150
2	990	1,110	1,110	2,220	1,800	2,500	5,540	4,500	4,750	1,440	2,800	1,940
3	880	1,110	1,110	1,800	1,880	2,500	6,990	4,260	7,590	1,500	3,230	2,040
4	880	1,050	1,440	1,880	1,650	2,500	9,140	4,020	5,820	1,660	3,340	2,110
5	*880	935	1,300	1,650	1,720	2,500	*19,500	3,560	4,500	2,130	3,680	3,900
6	*880	990	1,370	2,700	1,580	2,130	*29,400	3,340	3,790	2,500	3,120	4,140
7	*880	990	1,370	6,100	1,580	2,130	*19,200	3,120	3,340	3,560	4,020	3,020
8	*880	1,050	1,370	9,140	1,580	2,130	14,900	3,340	3,340	3,790	5,960	2,500
9	*880	1,110	2,700	6,690	1,580	2,040	12,600	3,790	2,910	*3,900	5,010	2,100
10	880	1,240	2,500	5,010	1,880	2,040	11,600	5,270	2,800	*3,300	4,020	1,960
11	880	1,110	2,220	4,260	2,220	2,040	10,700	5,540	2,700	2,800	*3,500	1,780
12	880	1,180	1,960	3,560	2,700	2,040	9,760	4,750	2,460	2,800	*2,800	1,660
13	880	1,180	1,800	3,120	2,910	1,960	7,900	4,750	2,350	2,310	*3,400	1,620
14	935	1,240	1,720	3,120	2,910	1,960	6,690	4,750	2,130	2,040	3,900	1,450
15	880	1,440	1,650	3,120	6,100	1,960	5,820	4,750	2,130	1,720	3,680	1,410
16	825	2,040	1,510	2,700	7,590	1,960	5,540	4,500	2,400	1,770	2,910	1,340
17	935	1,880	1,510	2,400	5,820	1,960	5,010	4,260	3,120	*1,750	2,460	1,330
18	880	1,960	1,370	2,130	5,270	2,310	4,500	4,020	2,500	*1,700	2,200	1,270
19	880	2,310	1,440	2,700	5,270	2,310	4,260	3,790	2,130	*1,800	1,930	1,250
20	935	2,310	1,300	3,790	*5,270	2,310	3,790	3,560	1,960	1,960	2,100	1,300
21	880	2,040	1,180	3,790	5,270	2,310	3,560	4,750	*1,800	2,260	2,910	1,270
22	880	1,800	1,580	3,340	4,750	2,220	3,790	4,500	1,720	2,400	4,750	1,230
23	825	1,580	1,580	2,910	4,260	2,220	6,390	6,100	1,650	3,340	6,240	1,210
24	880	1,440	1,370	2,700	3,790	2,130	11,000	5,540	1,650	6,540	6,690	1,160
25	880	1,370	1,300	2,400	3,560	2,040	9,140	6,690	1,880	7,140	5,270	1,120
26	935	1,370	1,370	2,310	4,260	2,130	7,290	6,100	2,310	8,210	4,380	1,150
27	1,050	1,180	1,510	2,220	3,340	2,130	6,990	5,820	2,130	6,390	3,560	1,150
28	1,110	1,180	2,500	2,040	2,910	2,700	7,290	6,990	1,720	4,880	2,910	1,150
29	1,110	1,180	5,010	2,040	-------	4,500	6,390	6,100	1,580	4,620	2,600	1,370
30	1,050	1,110	3,790	1,960	-------	5,270	5,540	5,010	1,550	3,790	2,400	1,480
31	990	-------	3,120	1,960	-------	7,590	-------	4,500	-------	3,120	2,240	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,110	825	922	0.253	0.29
November	2,310	935	1,380	.378	.42
December	5,010	1,110	1,810	.496	.57
January	9,140	1,650	3,180	.871	1.00
February	7,590	1,580	3,410	.934	.97
March	7,590	1,960	2,560	.701	.81
April	29,400	3,560	8,890	2.44	2.72
May	6,990	3,120	4,740	1.30	1.50
June	7,590	1,550	2,820	.773	.86
July	8,210	1,440	3,180	.871	1.00
August	6,690	1,930	3,580	.981	1.13
September	4,140	1,120	1,750	.479	.53
The year	29,400	825	3,180	.871	11.80

* Estimated.

MIDDLE FORK OF HOLSTON RIVER AT CHILHOWIE, VA.

LOCATION.—Chain gage at highway bridge at Chilhowie, Smyth County.
DRAINAGE AREA.—144 square miles.
RECORDS AVAILABLE.—June, 1907, to December, 1909; November, 1920, to November, 1931 (discontinued).
EXTREMES.—Maximum discharge during period Oct. 1, 1930, to Nov. 16, 1931, 3,570 second-feet Apr. 4 (gage height, 6.80 feet); minimum, 13 second-feet Sept. 17 (gage height, 0.80 foot).
1907–1909, 1920–1931: Maximum discharge, 7,710 second-feet June 12, 1923 (gage height, 11.4 feet); minimum, 13 second-feet July 28, 1926, Sept. 17, 1931.
REMARKS.—Records fair. Discharge estimated Nov. 26–28, Dec. 17, 24–26, 31, Jan. 1, 2, 15, 16. Operation of small mills upstream causes some diurnal fluctuation.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	24	35	39	45	38	57	400	112	590	38	302	47
2	28	27	42	40	34	64	590	112	302	41	324	40
3	37	21	41	61	35	46	640	96	188	490	134	60
4	32	30	42	41	34	46	2,140	88	137	795	101	76
5	30	59	42	145	36	46	1,240	83	118	209	104	51
6	26	44	61	515	35	49	795	80	101	252	115	51
7	32	41	129	228	36	46	740	104	93	213	98	43
8	37	37	79	136	36	48	690	324	90	153	76	41
9	30	37	52	106	42	51	440	213	80	101	71	38
10	33	37	44	84	106	49	324	150	71	170	68	32
11	33	37	41	70	75	49	260	131	66	83	66	32
12	27	52	46	68	61	49	202	124	60	68	58	26
13	28	44	33	61	61	46	153	134	60	83	58	34
14	44	35	28	57	310	46	157	140	60	58	60	29
15	37	48	32	50	200	57	137	140	58	62	53	31
16	39	61	32	45	146	84	124	121	60	60	51	38
17	33	61	35	44	143	81	115	115	49	56	45	16
18	33	52	37	44	176	72	101	110	47	62	45	43
19	35	50	32	53	159	68	96	101	49	76	51	32
20	33	46	42	53	149	61	93	88	47	64	60	24
21	30	46	44	48	116	57	85	164	40	137	98	27
22	39	44	50	51	103	64	369	170	49	191	209	27
23	33	48	35	46	91	75	440	690	58	690	167	31
24	56	46	30	42	84	96	260	324	53	640	118	32
25	44	39	25	38	70	169	209	416	47	252	88	29
26	35	35	25	44	68	146	181	795	45	440	66	51
27	35	30	151	38	66	119	157	515	43	181	47	73
28	39	35	90	40	51	445	137	302	41	128	60	40
29	37	50	74	36	-------	565	144	213	49	104	56	38
30	39	37	56	38	-------	310	121	164	41	93	51	31
31	32	-------	50	38	-------	210	-------	181	-------	137	43	-------

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1931			11	31	40	21	34	-------
1	36	40	12	26	41	22	38	-------
2	21	43	13	21	36	23	29	-------
3	29	41	14	29	47	24	24	-------
4	31	36	15	24	34	25	29	-------
5	26	51	16	38	34	26	29	-------
6	29	49	17	32	-------	27	34	-------
7	32	40	18	29	-------	28	36	-------
8	32	34	19	24	-------	29	49	-------
9	32	29	20	38	-------	30	41	-------
10	26	40				31	41	-------

Monthly discharge, in second-feet, of Middle Fork of Holston River at Chilhowie, Va., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930–31					
October	56	24	34.5	0.240	0.28
November	61	21	42.1	.292	.33
December	151		50.3	.349	.40
January	515	36	77.6	.539	.62
February	310	34	91.5	.635	.66
March	565	46	109	.757	.87
April	2,140	85	385	2.67	2.98
May	795	80	210	1.46	1.68
June	590	40	93.1	.647	.72
July	795	38	198	1.38	1.59
August	324	43	94.9	.659	.76
September	76	16	38.8	.269	.30
The year	16	2,140	119	.826	11.19
1931					
October	49	21	31.3	.217	.25
November 1–16	51	29	39.7	.276	.164

WATAUGA RIVER AT STUMP KNOB, TENN.

LOCATION.—Staff gage 400 feet below Lineback's store (site of old Stump Knob post office, Johnson County), 2¼ miles above mouth of Elk Creek, and 4½ miles above Butler. Zero of gage is 1,868.94 feet above mean sea level.

DRAINAGE AREA.—177 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 2,570 second-feet Apr. 25 (gage height, 3.9 feet); minimum, 50 second-feet Oct. 12 (gage height, 0.84 foot).

1927–1931: Maximum discharge, about 10,700 second-feet Nov. 17, 1927 (gage height, 9.2 feet); minimum, 28 second-feet Aug. 4, 5, 13, 1930 (gage height, 0.70 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	80	219	158	135	191	1,470	250	367	104	152	118
2	78	76	168	183	135	165	910	246	255	104	145	115
3	72	69	142	152	127	148	822	228	210	129	187	448
4	65	80	132	152	124	138	1,250	202	179	152	148	295
5	65	107	127	1,050	121	138	1,150	191	155	195	480	198
6	61	168	1,150	1,200	121	145	955	191	158	206	480	161
7	61	132	625	700	118	138	822	415	158	142	391	138
8	63	110	397	480	115	246	910	415	172	107	237	132
9	84	100	290	350	129	187	822	306	142	94	206	127
10	67	100	246	290	165	158	625	270	129	168	176	110
11	61	113	210	228	129	195	515	241	118	115	158	104
12	52	138	187	255	129	148	448	246	110	94	202	102
13	61	295	165	250	129	155	355	232	113	92	250	100
14	65	219	152	210	187	158	311	228	403	100	165	92
15	72	228	148	148	145	215	285	195	215	90	142	87
16	80	265	129	195	145	168	265	183	172	118	121	84
17	72	361	84	191	158	158	237	183	155	142	115	84
18	63	285	127	198	187	152	219	172	129	104	102	80
19	61	224	152	202	172	152	215	168	118	104	97	100
20	61	183	148	210	165	135	202	165	113	104	224	84
21	61	165	104	158	158	127	187	415	110	121	480	78
22	61	148	115	161	148	158	1,200	300	107	187	910	78
23	61	135	135	168	148	168	955	480	219	179	515	69
24	69	124	148	161	145	206	663	311	155	165	355	67
25	72	124	87	155	135	250	515	265	118	152	241	67
26	65	113	168	152	129	202	480	379	121	237	198	135
27	61	113	480	161	121	215	397	270	107	172	172	124
28	65	100	285	161	121	409	344	228	104	179	155	80
29	63	94	232	158	------	700	295	210	94	138	172	78
30	61	113	187	152	------	480	270	219	102	107	148	72
31	67	------	121	145	------	379	------	250	------	132	127	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	84	52	66.3	0.375	0.43
November	361	69	152	.859	.96
December	1,150	84	228	1.29	1.49
January	1,200	145	275	1.55	1.79
February	187	115	141	.797	.83
March	700	127	212	1.20	1.38
April	1,470	187	603	3.41	3.80
May	480	165	260	1.47	1.70
June	403	94	160	.904	1.01
July	237	90	137	.774	.89
August	910	97	247	1.40	1.61
September	448	67	120	.678	.76
The year	1,470	52	217	1.23	16.65

WATAUGA RIVER AT BUTLER, TENN.

LOCATION.—Staff gage at county highway bridge at Butler, Johnson County, just below mouth of Roane Creek. Zero of gage is 1,812.10 feet above mean sea level.

DRAINAGE AREA.—427 square miles.

RECORDS AVAILABLE.—August, 1900, to December, 1901; November, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,150 second-feet Apr. 22 (gage height, 4.40 feet); minimum, 148 second-feet Oct. 6, 7, 8 (gage height, 1.30 feet).

1900–1901, 1920–1931: Maximum stage, 16.27 feet, old-gage datum, May 21, 1901 (discharge not determined); minimum discharge, 85 second-feet Sept. 7, 1925.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	180	354	392	342	460	2,450	605	1,650	337	605	280
2	171	166	360	337	337	380	1,880	605	980	325	439	264
3	157	171	319	386	331	348	1,380	564	735	354	646	980
4	157	199	302	386	325	342	2,810	564	564	354	446	735
5	157	238	291	735	319	342	2,630	526	526	474	1,200	526
6	153	331	1,380	2,450	319	360	2,280	488	526	782	1,720	412
7	148	285	1,080	1,380	313	354	2,200	646	488	481	1,140	360
8	153	223	690	930	302	526	2,110	880	488	360	782	319
9	185	223	526	782	373	392	1,800	690	418	291	605	302
10	180	223	467	646	412	331	1,440	646	373	367	526	275
11	166	228	425	564	367	285	1,260	564	348	313	488	264
12	157	296	399	605	331	337	930	564	331	270	425	254
13	157	605	360	564	319	319	782	605	325	254	690	243
14	209	405	337	526	467	342	690	564	1,030	238	488	228
15	223	405	313	367	453	526	646	526	690	264	405	214
16	180	488	296	275	425	425	605	526	564	337	360	214
17	166	690	259	360	481	399	564	488	412	342	331	204
18	162	564	275	460	488	360	564	474	342	367	291	204
19	157	453	319	564	453	354	526	453	342	319	296	248
20	157	392	354	564	432	319	526	446	342	319	526	223
21	157	348	275	481	425	313	488	1,140	337	380	1,080	214
22	157	313	259	425	392	392	2,450	930	319	488	1,650	204
23	162	296	354	453	380	446	2,030	1,260	605	690	488	204
24	199	285	270	425	367	526	1,440	930	453	526	690	199
25	204	275	259	399	354	526	1,140	782	354	526	564	194
26	171	264	380	392	331	467	1,140	1,140	342	605	467	302
27	157	233	1,080	412	319	467	1,030	830	325	690	418	254
28	162	238	646	412	308	980	880	782	319	564	386	214
29	194	233	564	373	-------	1,380	735	605	319	446	392	204
30	233	259	392	354	-------	980	646	605	319	360	354	189
31	189	-------	342	354	-------	830	-------	646	-------	446	302	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	233	148	173	0.405	0.47
November	690	166	317	.742	.83
December	1,380	259	449	1.05	1.21
January	2,450	275	573	1.34	1.54
February	488	302	374	.876	.91
March	1,380	285	478	1.12	1.29
April	2,810	488	1,340	3.14	3.50
May	1,260	446	680	1.59	1.83
June	1,650	319	506	1.19	1.33
July	782	238	415	.972	1.12
August	1,720	291	619	1.45	1.67
September	980	189	298	.698	.78
The year	2,810	148	518	1.21	16.48

WATAUGA RIVER AT ELIZABETHTON, TENN.

LOCATION.—Water-stage recorder at Virginia & Southwestern Railway bridge at Elizabethton, Carter County, half a mile below mouth of Doe River. Zero of gage is 1,486.03 feet above mean sea level.

DRAINAGE AREA.—703 square miles.

RECORDS AVAILABLE.—February, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,090 second-feet Apr. 4 (gage height, 7.96 feet); minimum, 93 second-feet Nov. 29 (gage height, 1.61 feet).

1926–1931: Maximum discharge, about 13,400 second-feet Feb. 23, 1927 (gage height, 11.1 feet); minimum, 84 second-feet Aug. 3, 1930.

Maximum stage known, 22.0 feet Feb. 27 or 28, 1902.

REMARKS.—Records good. Discharge based on two daily readings of staff gage Sept. 23–26. Considerable diurnal fluctuation caused by operation of Watauga Power Co.'s plant 7 miles upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	236	706	657	554	599	2,210	1,170	2,780	432	881	488
2	306	300	616	486	653	727	2,360	1,070	1,850	426	934	524
3	293	338	533	675	532	575	1,970	971	1,420	543	1,260	1,470
4	268	314	487	671	552	604	4,470	973	1,180	678	814	1,570
5	288	388	430	2,520	532	564	5,090	852	1,000	822	1,440	998
6	273	471	1,000	3,450	532	563	3,730	844	948	1,070	1,850	712
7	268	453	1,500	2,010	494	542	3,300	1,030	783	904	1,950	732
8	272	464	1,070	1,530	482	606	3,430	1,430	924	604	1,360	603
9	309	328	842	1,260	578	731	3,000	1,230	725	642	1,170	564
10	320	406	722	1,060	686	584	2,340	1,140	686	609	1,070	554
11	296	406	692	908	616	602	2,040	1,110	590	479	1,060	491
12	215	522	663	1,000	538	602	1,640	1,040	550	386	970	469
13	345	870	580	932	572	555	1,520	1,110	550	356	1,210	406
14	276	634	547	872	1,100	594	1,330	1,060	1,100	396	978	477
15	284	712	573	746	994	718	1,230	1,010	1,200	488	830	402
16	366	746	491	676	958	806	1,150	908	829	506	636	400
17	326	1,070	477	805	898	681	1,020	828	648	634	660	405
18	292	854	362	779	972	635	963	999	578	568	565	386
19	244	786	592	1,040	898	630	892	848	536	406	555	355
20	306	644	616	1,010	860	614	924	935	464	600	1,060	363
21	275	556	418	874	838	584	811	1,830	454	884	1,550	402
22	264	545	458	778	664	524	2,210	1,620	454	1,070	2,060	268
23	293	582	518	776	766	708	3,190	2,010	750	1,330	1,590	435
24	335	448	433	754	656	652	2,270	1,640	579	1,160	1,260	285
25	331	472	349	622	660	741	1,870	1,410	495	969	959	265
26	284	456	839	706	637	668	1,780	1,870	470	1,160	811	402
27	324	324	1,580	649	596	682	1,800	1,630	432	1,310	718	595
28	284	476	1,110	679	580	1,010	1,540	1,360	402	1,180	677	416
29	346	364	941	720	-------	1,720	1,380	1,210	394	881	716	393
30	414	430	786	626	-------	1,490	1,230	1,150	394	711	624	299
31	346	-------	590	675	-------	1,300	-------	1,060	-------	671	598	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	414	215	301	0.428	0.50
November	1,070	236	516	.734	.82
December	1,580	349	694	.987	1.14
January	3,450	486	998	1.42	1.64
February	1,100	482	692	.984	1.02
March	1,720	524	729	1.04	1.20
April	5,090	811	2,090	2.97	3.31
May	2,010	828	1,200	1.71	1.97
June	2,780	394	806	1.15	1.28
July	1,330	356	738	1.05	1.21
August	2,060	555	1,060	1.51	1.74
September	1,570	265	538	.765	.85
The year	5,090	215	864	1.23	16.68

DOE RIVER AT VALLEY FORGE, TENN.

LOCATION.—Chain gage at highway bridge 50 feet downstream from East Tennessee & Western North Carolina Railroad bridge and a quarter of a mile north of Valley Forge, Carter County.

DRAINAGE AREA.—132 square miles.

RECORDS AVAILABLE.—December, 1911, to October, 1916; November, 1920, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,690 second-feet Apr. 4 (gage height, 3.75 feet); minimum, 41 second-feet Oct. 2, 7, 13 (gage height, 0.89 foot).

1911–1916; 1920–1931: Maximum discharge, determined by slope-area method, about 5,040 second-feet June 13, 1924 (gage height, from high-water mark, 6.7 feet); minimum, 17 second-feet Aug. 31, Sept. 7, 1925 (gage height, 0.60 foot).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	59	129	91	99	115	370	212	850	74	156	127
2	43	55	122	85	99	124	345	202	480	202	156	115
3	46	52	95	119	95	112	300	178	345	110	188	740
4	46	56	95	107	87	107	1,000	162	259	229	219	450
5	43	82	91	422	83	105	925	151	300	185	244	237
6	43	85	162	602	89	110	812	162	252	222	322	215
7	41	82	172	345	89	99	775	191	198	162	345	188
8	50	75	129	255	91	117	812	252	219	110	322	151
9	58	66	112	208	129	107	705	202	178	132	322	137
10	48	71	101	169	153	97	570	195	153	153	280	127
11	50	77	122	159	105	115	450	182	142	117	300	122
12	45	172	101	178	97	112	345	205	137	99	300	107
13	42	175	95	178	137	101	300	215	132	107	233	103
14	46	110	91	191	345	107	255	178	219	97	212	112
15	50	105	85	159	222	102	229	159	300	110	185	103
16	48	127	82	140	185	159	208	145	151	110	172	95
17	48	137	71	151	222	137	208	195	124	132	142	87
18	52	185	75	153	212	127	188	222	112	101	132	87
19	48	132	91	172	182	115	175	159	105	91	124	83
20	50	101	101	198	178	117	162	205	99	97	172	83
21	47	87	107	175	162	112	145	570	95	151	370	83
22	45	89	99	156	148	129	450	422	97	259	510	79
23	52	85	83	142	137	119	570	480	105	300	395	80
24	66	85	59	127	137	117	450	370	85	208	322	80
25	61	87	69	129	132	115	345	300	82	156	237	80
26	52	85	259	122	127	129	480	775	82	540	191	85
27	51	85	300	124	115	166	370	480	77	635	169	95
28	58	80	166	117	110	229	300	322	77	280	153	105
29	95	80	142	110	-------	208	280	237	72	188	191	93
30	80	103	137	107	-------	195	240	248	72	178	191	80
31	72	-------	101	103	-------	169	-------	422	-------	169	134	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	95	41	52.2	0.395	0.46
November	185	52	95.7	.725	.81
December	300	59	118	.894	1.03
January	602	85	177	1.34	1.54
February	345	83	142	1.08	1.12
March	229	97	130	.985	1.14
April	1,000	145	425	3.22	3.59
May	775	145	271	2.05	2.36
June	850	72	187	1.42	1.58
July	635	74	184	1.39	1.60
August	510	124	238	1.80	2.08
September	740	79	144	1.09	1.22
The year	1,000	41	180	1.36	18.53

NORTH FORK OF HOLSTON RIVER NEAR SALTVILLE, VA.

LOCATION.—Chain gage at Cedar Branch Bridge, 1½ miles northeast of Saltville, Smyth County, and 3 miles upstream from Sturgeon Creek.

DRAINAGE AREA.—228 square miles.

RECORDS AVAILABLE.—November, 1920, to September, 1931. June, 1907, to November, 1908, at station 1½ miles downstream.

EXTREMES.—Maximum discharge during year, 5,440 second-feet Apr. 4 (gage height, 10.10 feet); minimum, 20 second-feet Sept. 13 (gage height, 1.26 feet).

1907–8, 1920–1931: Maximum discharge, 8,220 second-feet Feb. 3, 1923 (gage height, 13.97 feet); minimum, 19 second-feet Sept. 30, 1930 (gage height, 1.28 feet).

REMARKS.—Records good. Discharge estimated Jan. 1, 2, Sept. 14. Possibly some regulation from mills above station during periods of extremely low water.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	27	29	35	44	105	680	204	635	43	159	51
2	26	29	33	35	43	100	970	192	400	47	349	38
3	25	28	32	54	44	97	920	170	285	57	216	59
4	29	28	30	65	39	99	3,220	148	229	91	170	104
5	25	32	34	148	37	99	2,810	128	192	119	170	86
6	22	31	57	770	35	84	1,450	128	170	128	192	66
7	24	30	170	510	40	86	1,320	192	148	181	192	47
8	24	29	128	256	39	88	1,140	550	170	170	128	39
9	23	32	94	181	60	79	970	454	159	107	105	36
10	26	27	83	148	192	74	725	332	119	99	93	38
11	24	26	67	110	192	80	510	256	100	87	86	35
12	21	26	51	105	148	77	400	242	90	72	90	31
13	21	33	49	107	138	63	332	316	93	54	148	22
14	23	30	40	90	400	61	300	472	83	56	104	25
15	26	45	35	56	472	148	242	454	86	59	80	26
16	26	34	38	49	216	229	216	349	96	52	61	29
17	22	38	41	84	285	192	192	300	86	46	60	32
18	25	71	44	88	383	170	181	270	74	46	51	31
19	22	65	43	75	400	148	159	229	65	59	61	34
20	23	43	50	87	366	119	138	204	55	71	84	33
21	26	40	36	72	270	108	128	270	56	61	204	29
22	24	33	30	32	216	119	300	316	66	119	635	26
23	26	34	40	49	181	128	550	1,450	229	332	418	21
24	35	30	30	66	159	138	383	680	119	1,260	332	35
25	27	29	25	75	138	216	332	550	100	472	216	32
26	26	29	45	52	119	229	300	770	83	285	159	32
27	30	23	105	43	110	229	316	635	66	242	138	38
28	28	32	170	59	105	550	285	454	67	159	119	35
29	30	27	119	50	-------	1,200	256	316	60	119	99	46
30	27	30	80	50	-------	770	229	270	47	96	83	32
31	29	-------	41	45	-------	510	-------	229	-------	90	67	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	21	35	25.4	0.111	0.13
November	23	71	33.7	.148	.17
December	25	170	60.3	.264	.30
January	32	770	118	.518	.60
February	35	472	174	.763	.79
March	61	1,200	206	.904	1.04
April	128	3,220	665	2.92	3.26
May	128	1,450	372	1.63	1.88
June	47	635	141	.618	.69
July	43	1,260	157	.689	.79
August	51	635	164	.719	.83
September	21	104	39.6	.174	.19
The year	21	3,220	179	.785	10.67

NORTH FORK OF HOLSTON RIVER AT MENDOTA, VA.

LOCATION.—Chain gage at highway bridge a quarter of a mile east of Mendota, Washington County.
DRAINAGE AREA.—500 square miles.
RECORDS AVAILABLE.—October, 1920, to November, 1931 (discontinued).
EXTREMES.—Maximum discharge during period Oct. 1, 1930, to Nov. 14, 1931, 9,500 second-feet Apr. 5 (gage height, 9.88 feet); minimum, 28 second-feet Oct. 3, 1930 (gage height, 1.60 feet).
1920–1931: Maximum discharge, 19,600 second-feet Feb. 3, 1923 (gage height, 14.4 feet); minimum, that of Oct. 3, 1930.
REMARKS.—Records good. Discharge estimated Nov. 27–29, Dec. 24–26, Dec. 31 to Jan. 4, Jan. 15–17, May 26, 27, Nov. 2–4, 1931.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	44	71	56	130	121	235	930	418	778	101	226	167
2	49	71	77	120	106	230	1,370	390	890	101	331	186
3	29	69	75	110	86	208	1,450	390	670	137	604	282
4	44	99	71	100	94	215	5,070	331	448	208	357	278
5	50	77	65	362	101	197	8,120	282	362	218	478	243
6	44	73	116	1,530	81	193	3,190	278	418	390	362	197
7	44	86	315	1,290	92	167	2,850	418	448	970	740	154
8	47	81	362	740	99	193	2,430	778	326	740	336	132
9	50	86	235	478	137	215	2,230	1,050	292	418	310	118
10	52	69	186	346	418	193	1,610	970	243	287	204	108
11	45	73	146	282	448	180	1,370	705	211	222	218	99
12	54	77	132	273	346	173	890	637	197	190	204	97
13	49	88	134	222	296	173	778	670	186	157	572	92
14	44	116	118	180	1,290	176	637	740	186	157	357	88
15	45	99	106	160	1,370	235	637	890	186	146	269	86
16	49	118	101	140	930	341	478	740	176	132	215	81
17	47	124	83	130	778	478	418	604	180	132	183	86
18	45	134	83	170	1,010	390	418	509	157	126	157	90
19	61	164	83	167	1,210	320	352	509	143	134	151	83
20	54	124	104	167	1,050	292	305	418	129	118	362	79
21	47	116	101	164	740	256	269	478	137	170	1,290	81
22	50	104	99	160	604	218	778	604	116	278	970	77
23	54	99	90	140	509	222	1,530	637	215	1,210	1,010	69
24	67	75	85	129	418	193	970	1,290	310	1,370	815	69
25	83	71	75	134	346	256	815	890	190	2,050	572	71
26	77	67	65	126	296	269	778	1,650	154	815	418	97
27	75	60	362	121	256	362	815	1,350	134	1,050	310	99
28	67	55	448	118	230	540	705	890	134	572	269	106
29	88	50	341	124	-------	2,140	604	670	126	362	243	92
30	81	75	230	124	-------	1,780	509	540	116	301	222	83
31	83	-------	170	124	-------	930	-------	448	-------	273	186	-------

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1931			1931			1931		
1	83	73	11	65	54	21	50	-------
2	79	70	12	54	49	22	50	-------
3	69	65	13	57	59	23	54	-------
4	69	65	14	50	52	24	59	-------
5	69	59	15	49	-------	25	71	-------
6	63	56	16	52	-------	26	45	-------
7	63	63	17	59	-------	27	59	-------
8	65	59	18	56	-------	28	56	-------
9	61	56	19	54	-------	29	75	-------
10	52	56	20	50	-------	30	97	-------
						31	77	-------

Monthly discharge, in second-feet, of North Fork of Holston River at Mendota, Va., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930–31					
October	88	29	55.4	0.111	0.13
November	164		89.0	.178	.20
December	448	56	152	.304	.35
January	1,530		276	.552	.64
February	1,370	81	481	.962	1.00
March	2,140	167	386	.772	.89
April	8,120	269	1,440	2.88	3.21
May		278	683	1.37	1.58
June	890	116	275	.550	.61
July	2,050	101	437	.874	1.01
August	1,290	151	417	.834	.96
September	282	69	120	.240	.27
The year	8,120	29	400	.800	10.85
1931					
October	97	45	61.7	.123	.14
November 1–14	73	49	59.7	.119	.06

LITTLE RIVER AT WALLAND, TENN.

LOCATION.—Staff gage half a mile above Walland, Blount County, and three-quarters of a mile above dam of England, Walton & Co.'s tannery. Zero of gage is 912.00 feet above mean sea level.

DRAINAGE AREA.—174 square miles.

RECORDS AVAILABLE.—July, 1925, to July, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, about 6,180 second-feet Apr. 4 (gage height, 7.65 feet); minimum, 30 second-feet Oct. 15, 17 (gage height, 0.84 foot).

1925–1931: Maximum discharge, about 10,600 second-feet Mar. 23, 1929 (gage height, 11.0 feet); minimum, 15 second-feet Aug. 31, 1925 (gage height, 0.55 foot).

REMARKS.—Records good below 3,000 second-feet and fair above.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	66	77	203	167	132	251	690	390	311	128
2	68	63	160	125	122	219	780	365	259	95
3	64	63	136	139	119	207	690	320	235	116
4	60	60	125	132	113	203	5,660	306	215	188
5	56	86	116	440	110	188	2,310	311	195	271
6	60	95	492	1,000	107	188	2,310	306	188	227
7	52	74	390	602	101	184	1,460	365	174	167
8	54	68	320	465	110	239	1,220	440	174	122
9	47	65	259	390	440	203	1,080	440	160	113
10	58	60	219	320	365	192	875	575	150	132
11	52	95	203	284	259	184	1,220	465	139	107
12	48	107	203	390	219	178	940	415	132	------
13	50	243	174	440	203	167	780	365	365	------
14	48	150	160	365	1,910	170	630	342	184	------
15	42	275	142	302	875	247	520	302	203	------
16	44	720	132	251	602	207	465	271	178	------
17	38	492	136	259	660	178	415	267	153	------
18	56	415	119	227	750	170	465	251	139	------
19	51	280	122	267	720	174	415	311	125	------
20	51	207	125	247	602	160	415	320	119	------
21	42	170	110	231	465	160	365	520	113	------
22	40	153	107	211	390	239	2,510	440	107	------
23	38	128	98	192	342	195	1,140	415	128	------
24	89	113	74	181	298	227	810	365	128	------
25	86	113	68	170	302	259	660	342	101	------
26	54	92	259	160	267	235	750	298	139	------
27	56	77	390	156	235	251	602	271	113	------
28	51	60	284	160	219	602	548	251	98	------
29	146	65	247	156	------	810	492	231	89	------
30	132	77	207	142	------	575	415	342	83	------
31	89	------	178	139	------	465	------	251	------	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	146	38	60.9	0.350	0.40
November	720	60	158	.908	1.01
December	492	68	192	1.10	1.27
January	1,000	125	281	1.61	1.86
February	1,910	101	394	2.26	2.35
March	810	160	256	1.47	1.70
April	5,660	365	1,050	6.03	6.73
May	575	231	350	2.01	2.32
June	365	83	163	.937	1.05
July 1–11	271	95	151	.868	.36

LITTLE RIVER NEAR WALLAND, TENN.

LOCATION.—Water-stage recorder half a mile above concrete bridge over Little River on State highway 73, 1¼ miles above mouth of Ellejoy Creek, and 3 miles below Walland, Blount County. Zero of gage is 876.89 feet above mean sea level.

DRAINAGE AREA.—190 square miles.

RECORDS AVAILABLE.—July to September, 1931.

EXTREMES.—Maximum discharge during period, 1,780 second-feet Aug. 29 (gage height, 3.90 feet); minimum, 30 second-feet Sept. 30 (gage height, 1.15 feet).

REMARKS.—Records fair. Gage heights estimated Aug. 15–17, Aug. 30 to Sept. 10.

Daily and monthly discharge, in second-feet, 1931

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		360	420	11	137	669	192	21	514	265	86
2		344	332	12	112	641	158	22	1,120	408	86
3		408	332	13	99	648	141	23	530	728	81
4		280	360	14	115	498	117	24	390	472	86
5		599	390	15	112	390	117	25	300	354	79
6		1,080	332	16	129	332	108	26	237	280	74
7		923	255	17	163	280	105	27	220	332	69
8		795	211	18	206	233	97	28	255	275	71
9	126	585	192	19	147	246	94	29	246	862	64
10	202	452	192	20	144	220	92	30	203	765	62
								31	215	550	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
July 9–31	1,120	99	257	1.35	1.15
August	1,080	220	493	2.59	2.99
September	420	62	166	.875	.98

LITTLE TENNESSEE RIVER AT IOTLA, N. C.

LOCATION.—Water-stage recorder 500 feet upstream from Iotla Creek and 1,000 feet upstream from State highway crossing at Iotla, Macon County.
DRAINAGE AREA.—326 square miles.
RECORDS AVAILABLE.—June, 1929, to September, 1931.
EXTREMES.—Maximum discharge during year, 3,750 second-feet Apr. 22 (gage height, 5.40 feet); minimum, 67 second-feet several times in September (gage height, 0.90 foot).
1929–1931: Maximum discharge (estimated), 10,100 second-feet Sept. 26, 1929 (gage height, 8.52 feet); minimum, that of September, 1931.
REMARKS.—Records good between 100 and 5,000 second-feet and fair beyond.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	252	232	442	410	362	728	1,830	814	520	436	514	226
2	248	190	362	371	384	500	388	936	424	446	566	226
3	234	255	326	392	362	647	1,130	804	431	300	296	628
4	233	216	318	380	354	520	2,260	820	430	428	362	408
5	215	236	322	1,300	358	492	2,430	716	460	409	300	332
6	244	223	1,460	1,100	350	482	1,850	867	353	548	234	181
7	230	225	768	718	350	558	1,650	1,110	370	368	390	332
8	230	263	624	663	338	851	1,280	960	466	374	388	254
9	306	172	466	635	424	691	1,260	867	380	336	322	229
10	280	240	454	583	492	474	1,090	744	320	528	241	230
11	264	235	427	552	392	536	1,070	776	412	332	285	230
12	298	284	398	663	370	524	894	806	376	270	296	244
13	278	448	376	728	457	502	970	736	410	264	260	215
14	216	327	358	614	942	497	851	692	338	627	300	223
15	218	603	365	480	655	502	862	649	568	404	292	241
16	208	1,210	343	487	562	482	788	663	405	394	218	210
17	216	1,260	358	519	1,220	457	827	496	384	200	386	200
18	220	1,060	371	547	812	447	732	776	370	203	332	238
19	184	682	358	556	670	442	1,130	594	264	267	432	218
20	238	542	358	519	602	433	820	518	382	386	402	153
21	228	449	326	472	464	458	1,020	692	289	326	264	221
22	236	398	342	452	487	812	2,860	635	334	422	334	228
23	236	358	326	442	497	544	2,230	622	407	324	425	96
24	227	364	314	433	472	676	1,560	470	350	320	334	95
25	236	342	303	410	621	582	1,230	660	318	296	241	95
26	163	333	776	429	558	558	1,180	518	536	310	317	166
27	226	307	950	371	502	727	1,120	556	350	634	846	181
28	231	307	620	401	532	1,200	1,120	458	326	349	228	156
29	251	300	549	392	-------	1,370	888	498	343	316	362	178
30	280	307	430	384	-------	1,010	884	462	554	344	303	206
31	245	-------	410	384	-------	978	-------	456	-------	350	262	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	306	163	238	0.730	0.84
November	1,260	172	412	1.26	1.41
December	1,460	303	471	1.44	1.66
January	1,300	371	542	1.66	1.91
February	1,220	338	521	1.60	1.67
March	1,370	433	635	1.95	2.25
April	2,860	388	1,270	3.90	4.35
May	1,110	456	689	2.11	2.43
June	568	264	396	1.21	1.35
July	634	200	371	1.14	1.31
August	566	218	330	1.01	1.16
September	623	95	228	0.699	0.78
The year	2,860	95	508	1.56	21.12

LITTLE TENNESSEE RIVER AT JUDSON, N. C.

LOCATION.—Staff gage a quarter of a mile below highway bridge at railroad station at Judson, Swain County, and half a mile below mouth of Yalaka Creek.

DRAINAGE AREA.—668 square miles.

RECORDS AVAILABLE.—April, 1912, to September, 1931. June, 1896, to September, 1913, at Southern Railway bridge 1 mile downstream.

EXTREMES.—Maximum discharge during year, 6,740 second-feet Apr. 22 (gage height, 22.08 feet); minimum, 385 second-feet Oct. 27 (gage height, 17.00 feet).

1896–1931: Maximum discharge, 40,800 second-feet Feb. 28, 1902 (gage height, 16.19 feet, old gage datum); minimum, 165 second-feet Oct. 10, 1925 (gage height, 16.70 feet).

REMARKS.—Records good. Slight diurnal fluctuation during low water, owing to operation of municipal plants at Franklin and Bryson.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	465	439	815	890	740	1,330	3,340	1,860	1,140	890	1,050	565
2	458	452	705	705	740	1,230	2,950	1,860	1,010	890	970	565
3	439	387	635	815	705	1,050	2,320	1,750	890	815	1,010	1,530
4	439	387	600	890	705	1,100	4,960	1,640	815	740	815	1,530
5	426	406	635	1,750	705	930	4,800	1,640	890	1,100	778	778
6	426	420	1,860	2,440	670	1,010	4,190	1,750	815	1,230	740	740
7	426	413	1,640	1,640	670	890	3,480	2,320	852	1,010	740	600
8	465	406	1,140	1,180	670	1,430	2,820	1,640	970	740	970	740
9	530	426	970	1,330	1,010	1,330	2,690	1,750	852	815	852	565
10	530	361	740	1,180	1,100	1,140	2,320	1,640	705	970	670	635
11	530	439	815	1,140	815	1,010	2,200	1,640	778	815	705	600
12	465	635	815	1,330	778	1,010	2,320	1,640	778	530	705	600
13	498	930	670	1,530	778	1,010	1,970	1,530	815	498	705	565
14	426	635	705	1,230	2,560	970	2,080	1,430	852	740	670	530
15	413	970	705	1,100	1,750	1,050	1,750	1,330	815	930	705	565
16	400	2,200	670	970	1,530	970	1,640	1,330	890	778	670	600
17	413	2,820	670	1,050	1,750	970	1,530	1,180	778	670	705	600
18	400	1,860	740	1,230	1,750	970	1,530	1,330	670	740	815	565
19	368	1,330	778	1,330	1,640	852	2,440	1,330	635	815	815	530
20	368	970	705	1,050	1,430	890	1,750	1,230	635	740	1,100	530
21	400	890	705	970	1,330	890	1,970	1,330	778	1,230	1,230	498
22	420	852	705	930	1,430	1,530	5,810	1,230	705	1,330	740	530
23	439	705	670	890	1,100	1,430	4,490	1,230	705	1,010	890	565
24	465	670	565	890	1,010	1,230	3,480	1,010	740	778	890	565
25	439	670	530	852	1,330	1,230	2,690	1,430	740	705	600	530
26	374	670	1,050	852	1,140	1,230	2,950	1,140	852	970	600	565
27	335	565	1,970	815	1,050	1,230	2,560	1,100	778	1,430	890	530
28	439	530	1,230	815	1,010	2,690	2,320	1,050	670	930	670	458
29	600	565	970	778	-------	2,690	1,970	1,010	600	890	778	465
30	530	635	1,180	778	-------	2,080	1,860	1,010	1,330	852	815	498
31	498	-------	778	740	-------	2,560	-------	1,100	-------	930	670	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	600	335	446	0.668	0.77
November	2,820	361	788	1.18	1.32
December	1,970	530	883	1.32	1.52
January	2,440	705	1,100	1.65	1.90
February	2,560	670	1,140	1.71	1.78
March	2,690	852	1,290	1.93	2.22
April	5,810	1,530	2,770	4.15	4.63
May	2,320	1,010	1,430	2.14	2.47
June	1,330	600	816	1.22	1.36
July	1,430	498	887	1.33	1.53
August	1,230	600	805	1.21	1.40
September	1,530	458	638	.955	1.07
The year	5,810	335	1,080	1.62	21.97

LITTLE TENNESSEE RIVER AT CALDERWOOD, TENN.

LOCATION.—Water-stage recorder at pump house of Knoxville Power Co. at Calderwood, Blount County, 2½ miles downstream from Calderwood Dam. Zero of gage is 861.78 feet above mean sea level.

DRAINAGE AREA.—1,870 square miles.

RECORDS AVAILABLE.—January, 1912, to December, 1918; January, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 22,700 second-feet Apr. 4 (gage height, 5.5 feet); minimum, 538 second-feet Aug. 19, caused by regulation (gage height, 0.32 foot).

1912–1918, 1921–1931: Maximum mean daily discharge, about 70,000 second-feet Mar. 4, 1917; minimum (estimated), 50 second-feet Apr. 16–18, 1930 (gage height, −0.12 foot, caused by closing of gates in dam).

REMARKS.—Records good except those for estimated periods, Dec. 9 to Jan. 1 and July 14–17, which are fair. Flow is very largely regulated by three large power developments upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,720	1,530	2,370	2,500	2,270	2,840	6,860	5,030	3,220	2,320	2,200	1,930
2	1,940	1,410	2,310	2,470	2,320	2,860	6,270	4,960	2,730	2,080	2,240	1,920
3	2,030	1,490	2,010	2,360	2,450	2,490	5,190	4,660	2,520	2,100	2,780	3,150
4	1,900	1,540	2,070	2,120	2,440	2,760	13,800	4,430	2,370	1,950	2,180	4,470
5	1,560	1,440	2,040	2,260	2,240	2,380	14,300	4,440	2,430	2,240	2,260	2,880
6	1,840	1,500	2,700	6,140	1,860	2,220	10,600	4,220	2,440	3,380	2,300	2,100
7	1,620	1,260	4,280	4,180	1,900	2,360	8,450	5,540	2,290	3,200	2,310	2,010
8	1,850	1,380	2,700	3,700	1,880	2,970	7,260	5,500	2,380	2,110	2,420	1,840
9	2,020	1,280	2,600	3,240	2,430	2,760	6,320	5,100	2,160	2,260	2,160	2,008
10	2,130	1,380	2,200	2,790	2,250	2,580	5,720	4,810	1,980	1,900	2,230	2,200
11	1,790	1,210	2,100	2,860	2,270	2,440	5,990	4,350	2,090	2,160	2,180	2,140
12	1,640	1,670	2,200	3,290	2,430	2,300	5,420	4,540	1,780	1,970	2,030	2,260
13	1,760	2,410	2,200	3,760	2,450	2,360	4,440	4,180	2,280	1,960	2,200	1,960
14	1,950	2,180	2,100	3,280	4,500	2,220	4,370	4,020	2,140	2,000	2,120	1,910
15	1,660	2,260	1,950	3,740	4,520	2,460	4,100	3,980	2,270	1,920	1,950	1,950
16	1,660	5,390	1,900	2,330	3,000	2,440	3,790	3,850	3,170	2,140	1,810	2,000
17	1,710	6,980	2,200	1,970	4,220	2,260	3,720	3,810	2,540	2,050	2,010	1,940
18	1,900	4,840	2,100	2,280	4,660	2,360	4,000	4,010	2,050	2,070	1,990	1,930
19	1,590	3,460	2,100	2,810	3,800	2,260	4,520	4,500	2,210	2,000	2,230	1,920
20	1,760	2,590	2,200	2,640	3,620	2,290	4,200	4,090	1,940	2,240	2,250	1,880
21	1,610	2,340	2,000	2,450	3,260	2,310	3,970	4,110	1,940	3,340	2,360	1,900
22	1,570	2,120	1,800	2,280	2,840	2,220	12,600	4,080	2,110	5,590	2,330	1,980
23	1,850	1,810	1,800	2,240	2,840	2,680	10,200	3,100	2,060	3,490	2,200	1,990
24	1,800	1,770	1,750	2,240	2,730	2,560	7,500	2,390	2,050	2,390	2,300	1,930
25	1,570	1,780	1,600	2,240	2,960	2,910	6,310	2,360	1,990	2,320	2,140	1,940
26	1,460	1,530	2,300	2,300	2,880	2,720	6,300	2,210	2,110	2,140	2,080	1,890
27	1,490	1,620	2,950	2,240	2,580	2,900	6,640	2,590	2,040	2,340	2,000	1,880
28	1,420	1,470	2,750	2,100	2,520	6,430	5,550	3,360	1,890	3,190	2,000	1,880
29	1,610	1,420	2,600	2,290	-------	7,780	5,300	2,820	2,100	2,390	2,130	1,980
30	1,630	1,460	2,550	2,320	-------	5,190	5,070	3,040	1,860	2,800	2,200	1,980
31	1,680	-------	2,550	2,290	-------	4,700	-------	3,230	-------	2,260	2,180	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,130	1,420	1,730	0.925	1.07
November	6,980	1,210	2,150	1.15	1.28
December	4,280	1,600	2,290	1.22	1.41
January	6,140	1,970	2,760	1.48	1.71
February	4,660	1,860	2,860	1.53	1.59
March	7,780	2,220	2,970	1.59	1.83
April	14,300	3,720	6,630	3.55	3.96
May	5,540	2,210	3,980	2.13	2.46
June	3,220	1,780	2,240	1.20	1.34
July	5,590	1,900	2,460	1.32	1.52
August	2,780	1,810	2,190	1.17	1.35
September	4,470	1,840	2,130	1.14	1.27
The year	14,300	1,210	2,860	1.53	20.79

LITTLE TENNESSEE RIVER AT McGHEE, TENN.

LOCATION.—Water-stage recorder at junction of Little Tennessee and Tellico Rivers, 100 feet above highway bridge and half a mile south of McGhee, Monroe County. Zero of gage is 760.07 feet above mean sea level.

DRAINAGE AREA.—2,470 square miles, including Tellico River.

RECORDS AVAILABLE.—January, 1905, to December, 1913; October, 1918, to September, 1931.

EXTREMES.—Maximum discharge during year, 30,300 second-feet Apr. 5 (gage height, 14.6 feet); minimum, 1,210 second-feet Nov. 10 (gage height, 3.24 feet).

1904–1913, 1918–1931: Maximum stage, 30.5 feet Apr. 2, 1920 (discharge not determined); minimum discharge, 480 second-feet Oct. 2, 1925. Maximum stage known, 39.0 feet March, 1867.

REMARKS.—Records excellent. Flow regulated somewhat by large power developments upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,740	1,680	2,260	2,860	2,560	3,160	9,500	6,000	3,380	2,450	2,430	2,280
2	2,000	1,540	2,660	2,760	2,660	3,580	11,500	6,120	3,480	2,410	2,470	2,100
3	2,030	1,570	2,240	2,760	2,760	3,160	8,500	5,640	2,960	2,190	2,860	3,480
4	1,900	1,630	2,240	2,660	2,860	3,160	17,900	5,280	2,760	2,240	2,660	6,500
5	1,680	1,500	2,260	2,860	2,660	2,960	23,300	5,400	2,860	2,560	2,380	3,800
6	1,730	1,650	2,860	7,500	2,280	2,860	16,800	5,160	2,760	3,690	2,660	2,860
7	1,680	1,440	5,040	6,000	2,100	2,860	13,000	6,250	2,660	4,020	3,060	2,560
8	1,790	1,380	3,480	5,040	2,190	3,060	10,500	7,000	2,660	2,470	3,060	2,280
9	1,930	1,360	3,160	4,460	2,860	3,800	8,750	6,500	2,660	2,560	2,660	2,280
10	2,230	1,520	2,660	3,580	3,270	3,160	7,750	7,000	2,140	2,660	2,560	2,410
11	1,860	1,340	2,560	3,690	2,660	2,960	8,250	5,760	2,380	2,300	2,560	2,470
12	1,630	1,600	2,660	4,240	2,860	2,860	7,500	5,640	2,140	2,100	2,430	2,560
13	1,660	2,390	2,660	5,280	2,860	2,660	6,120	5,280	2,230	1,980	2,560	2,320
14	1,900	2,560	2,560	4,460	7,250	2,860	6,000	4,810	2,660	2,080	2,430	2,100
15	1,760	2,210	2,360	4,580	7,750	2,860	5,280	4,810	2,560	1,950	2,280	2,170
16	1,680	5,040	2,300	2,860	5,160	3,060	5,040	4,580	2,960	2,450	2,070	2,170
17	1,730	9,250	2,660	2,560	4,810	2,860	4,810	4,350	3,270	2,210	2,230	2,150
18	1,980	5,880	2,560	2,660	6,120	2,860	5,040	4,580	2,300	2,240	2,240	2,150
19	1,680	4,350	2,560	3,270	5,400	2,760	5,520	4,920	2,390	2,050	2,470	2,140
20	1,760	3,160	2,660	3,380	4,810	2,660	5,520	4,700	2,300	2,300	2,860	2,050
21	1,680	2,660	2,410	3,060	4,350	2,660	5,040	5,400	2,070	3,380	2,760	2,100
22	1,580	2,430	2,150	2,760	3,800	2,860	15,300	4,920	2,320	8,500	3,160	2,140
23	1,710	2,170	2,150	2,760	3,690	2,860	17,400	4,240	2,170	4,700	2,960	2,150
24	2,020	1,960	2,100	2,660	3,380	3,480	10,500	3,060	2,320	2,960	2,960	2,140
25	1,680	1,910	1,930	2,660	3,580	3,480	8,500	2,960	2,070	2,660	2,660	2,100
26	1,580	1,830	2,760	2,660	3,690	3,480	8,250	2,760	2,430	2,410	2,430	2,100
27	1,550	1,710	3,580	2,660	3,270	3,690	9,000	2,860	2,170	2,470	2,450	2,080
28	1,520	1,650	3,160	2,470	3,060	7,000	7,250	3,800	2,150	3,270	2,340	2,020
29	1,790	1,580	3,060	2,660	-------	12,000	7,000	3,380	2,280	2,860	2,470	2,100
30	1,840	1,630	2,860	2,760	-------	8,000	6,250	2,860	1,880	2,960	2,760	2,140
31	1,840	-------	2,860	2,660	-------	6,250	-------	4,240	-------	2,560	2,560	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,230	1,520	1,780	0.721	0.83
November	9,250	1,340	2,420	.980	1.09
December	5,040	1,930	2,690	1.09	1.26
January	7,500	2,470	3,460	1.40	1.61
February	7,750	2,100	3,740	1.51	1.57
March	12,000	2,660	3,740	1.51	1.74
April	23,300	4,810	9,370	3.79	4.23
May	7,000	2,760	4,850	1.96	2.26
June	3,480	1,880	2,510	1.02	1.14
July	8,500	1,950	2,830	1.15	1.33
August	3,160	2,070	2,590	1.05	1.21
September	6,500	2,020	2,460	.996	1.11
The year	23,300	1,340	3,530	1.43	19.38

CULLASAJA CREEK AT HIGHLANDS, N. C.

LOCATION.—Water-stage recorder at municipal dam a quarter of a mile downstream from mouth of Big Creek and 2 miles northwest of Highlands, Macon County. Zero of gage is 3,603.85 feet above mean sea level.

DRAINAGE AREA.—13.3 square miles.

RECORDS AVAILABLE.—December, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 596 second-feet Apr. 22 (gage height, 3.59 feet); minimum, 5.4 second-feet Nov. 9, 10.

1927–1931: Maximum discharge (estimated), 2,420 second-feet Aug. 15, 1928 (gage height, 5.13 feet); minimum, that of Nov. 9, 10, 1930.

REMARKS.—Records fair above 20 second-feet and poor below.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	8.9	33	28	25	53	120	61	30	20	56	17
2	12	7.7	23	26	25	37	80	58	30	20	42	20
3	12	7.7	21	5.4	21	37	69	56	30	18	32	32
4	11	7.7	23	23	23	35	188	66	30	23	25	25
5	11	8.9	45	132	23	35	100	56	28	26	25	20
6	11	8.9	180	56	23	35	96	75	26	33	28	16
7	10	6.6	61	51	23	60	83	72	30	26	28	16
8	12	6	46	49	23	68	72	61	28	23	30	15
9	18	5.4	40	44	42	51	66	56	25	28	26	15
10	16	5.4	40	37	33	44	58	58	23	46	23	13
11	18	6	37	37	28	42	56	53	23	30	21	13
12	16	24	33	35	30	37	56	53	26	26	20	15
13	15	26	30	32	38	35	51	49	23	28	18	16
14	15	18	26	33	58	33	46	46	23	56	17	16
15	13	83	26	33	37	35	46	44	26	37	20	16
16	13	154	26	33	35	32	46	42	25	33	21	16
17	13	116	28	33	80	32	44	42	23	30	30	15
18	11	80	26	33	49	30	42	40	23	28	30	15
19	11	46	28	33	37	28	49	37	21	30	28	15
20	10	37	26	32	35	26	44	51	20	30	25	15
21	10	35	26	32	30	28	103	44	26	26	25	15
22	10	33	23	32	30	28	323	40	28	26	35	13
23	8.9	28	23	30	30	30	124	37	25	25	35	13
24	15	28	23	30	32	33	93	37	44	25	25	13
25	18	23	23	23	44	33	83	37	37	26	23	12
26	13	23	72	25	33	33	83	35	32	35	20	15
27	18	18	42	26	30	46	72	33	23	37	18	13
28	16	18	40	33	44	178	69	32	21	26	17	12
29	16	26	35	26	-------	98	64	32	20	23	21	11
30	12	28	33	28	-------	72	58	30	21	23	20	11
31	10	-------	30	26	-------	90	-------	30	-------	28	18	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18	8.9	13.2	0.992	1.14
November	154	5.4	30.6	2.30	2.57
December	180	21	37.7	2.83	3.26
January	132	5.4	35.4	2.66	3.07
February	80	21	34.3	2.58	2.69
March	178	26	46.9	3.53	4.07
April	323	42	82.8	6.23	6.95
May	75	30	47.2	3.55	4.09
June	44	20	26.3	1.98	2.21
July	56	18	28.7	2.16	2.49
August	56	17	25.9	1.95	2.25
September	32	11	15.6	1.17	1.30
The year	323	5.4	35.4	2.66	36.09

CULLASAJA CREEK AT CULLASAJA, N. C.

LOCATION.—Staff gage at Cullasaja, Macon County, 1 mile downstream from mouth of Ellijay Creek and 3½ miles upstream from mouth of creek.

DRAINAGE AREA.—87 square miles.

RECORDS AVAILABLE.—June, 1907, to December, 1909; February, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,980 second-feet Apr. 22 (gage height, 6.80 feet); minimum, 38 second-feet Sept. 30 (gage height, 0.70 foot).

1907–1909, 1921–1931: Maximum discharge (estimated), 9,080 second-feet Aug. 15, 1928 (gage height, 17.04 feet); minimum, 19 second-feet Sept. 19–22, 1925 (gage height, 0.32 foot).

Maximum stage known, 17.2 feet in July, 1916.

REMARKS.—Records good below 1,200 second-feet and fair above. Slight diurnal fluctuation from power operations upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	44	109	102	90	116	629	257	130	84	138	63
2	52	45	84	96	84	164	415	294	123	78	473	68
3	51	48	73	96	84	155	359	246	116	68	146	130
4	50	47	68	90	84	146	662	234	102	68	102	96
5	49	47	116	678	84	146	662	234	102	90	90	78
6	48	50	610	281	78	138	597	319	102	123	90	73
7	47	48	257	146	78	173	473	319	96	84	84	68
8	60	47	164	173	78	234	415	281	102	73	84	60
9	73	46	146	173	138	192	359	257	96	90	84	55
10	78	50	130	155	96	155	319	246	90	123	78	54
11	63	52	109	138	90	155	319	234	84	78	78	52
12	58	102	102	182	84	146	294	234	90	73	78	52
13	52	109	96	164	96	138	257	202	102	68	73	52
14	52	73	90	146	212	146	246	202	90	123	73	51
15	51	228	84	138	130	146	234	192	155	102	68	50
16	51	687	78	130	123	130	223	182	116	173	90	55
17	46	306	84	123	294	123	223	173	90	123	84	53
18	45	234	84	138	182	116	212	173	78	96	78	49
19	44	138	78	146	146	116	223	164	78	78	109	48
20	46	109	78	138	138	109	212	173	73	78	90	48
21	48	96	68	130	130	116	387	173	84	90	90	47
22	47	90	73	123	123	173	1,300	164	84	84	146	44
23	58	84	73	116	116	138	503	155	96	73	123	42
24	53	73	68	109	116	155	444	146	84	68	84	41
25	52	73	63	102	212	155	387	146	123	63	78	40
26	50	68	347	102	173	146	359	138	102	102	84	49
27	48	63	192	102	138	202	319	130	84	116	84	46
28	52	61	130	96	123	565	294	130	73	96	73	41
29	73	58	123	96	-------	387	281	123	73	109	84	40
30	61	68	109	96	-------	269	257	123	116	84	73	39
31	51	-------	109	90	-------	319	-------	146	-------	96	68	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	78	44	53.7	0.617	0.71
November	687	44	108	1.24	1.38
December	610	63	129	1.48	1.71
January	678	90	148	1.70	1.96
February	294	78	126	1.45	1.51
March	565	109	180	2.07	2.39
April	1,300	212	395	4.54	5.06
May	319	123	200	2.30	2.65
June	155	73	97.8	1.12	1.25
July	173	63	92.1	1.06	1.22
August	473	68	102	1.17	1.35
September	130	39	56.1	.645	.72
The year	1,300	39	141	1.62	21.91

NANTAHALA RIVER AT ALMOND, N. C.

LOCATION.—Staff gage 500 feet downstream from railroad station and highway bridge at Almond, Swain County, and a quarter of a mile upstream from confluence with Little Tennessee River.

DRAINAGE AREA.—177 square miles.

RECORDS AVAILABLE.—April, 1912, to November, 1917; January, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,570 second-feet Apr. 22 (gage height, 3.40 feet); minimum, 104 second-feet Oct. 20 (gage height, 0.70 foot).

1912–1917, 1921–1931: Maximum discharge probably crest of flood Mar. 4, 1917 (record of crest stage not available; mean daily discharge 15,200 second-feet); minimum, 79 second-feet Sept. 20–22, 1925 (gage height, 0.54 foot).

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	121	121	308	240	232	380	910	610	380	330	285	182
2	126	132	216	200	224	330	730	650	330	228	262	186
3	126	115	196	262	220	330	650	570	308	308	262	775
4	126	121	186	216	216	308	2,270	535	285	285	236	410
5	126	121	193	610	208	308	1,720	535	308	410	220	285
6	121	118	410	650	208	308	1,350	535	285	440	224	262
7	121	115	308	440	208	308	1,060	610	308	308	262	236
8	135	115	262	380	208	440	910	610	285	262	285	224
9	182	115	232	355	410	330	820	570	285	240	224	208
10	145	121	220	330	355	308	730	535	262	240	212	204
11	145	126	216	308	262	308	775	500	262	224	232	193
12	126	178	216	470	262	308	650	500	262	208	208	193
13	124	285	200	440	285	308	610	470	285	200	240	189
14	121	171	193	380	1,180	308	570	470	262	285	200	186
15	121	330	186	308	610	330	535	440	308	285	196	178
16	121	690	182	330	500	308	500	410	285	262	200	182
17	121	535	193	330	650	285	470	440	262	262	240	182
18	118	470	178	330	570	285	470	410	236	262	232	168
19	110	308	208	355	500	285	775	380	232	355	355	171
20	107	262	178	330	440	285	610	440	220	236	285	171
21	110	236	151	308	410	285	570	470	262	500	308	178
22	110	216	178	285	380	410	2,420	410	240	570	240	161
23	112	200	138	285	355	355	1,410	410	236	308	240	164
24	138	189	171	285	355	410	1,060	380	220	262	216	171
25	132	193	175	262	410	440	910	380	262	240	204	164
26	115	178	470	262	355	380	910	355	308	330	193	175
27	115	158	440	262	330	440	775	355	240	535	240	175
28	118	132	308	262	330	320	690	330	212	330	212	154
29	204	145	285	240	-------	775	650	330	204	330	285	148
30	164	208	262	240	-------	610	610	355	440	330	232	148
31	129	-------	196	232	-------	570	-------	410	-------	285	200	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	204	107	129	0.729	0.84
November	690	115	213	1.20	1.34
December	470	151	234	1.32	1.52
January	650	200	329	1.86	2.14
February	1,180	208	381	2.15	2.24
March	820	285	382	2.16	2.49
April	2,420	470	904	5.11	5.70
May	650	330	465	2.63	3.03
June	440	204	276	1.56	1.74
July	570	200	311	1.76	2.03
August	355	193	240	1.36	1.57
September	775	148	214	1.21	1.35
The year	2,420	107	339	1.92	25.99

TUCKASEGEE RIVER AT DILLSBORO, N. C.

LOCATION.—Staff gage at Dillsboro, Jackson County, 150 feet downstream from mouth of Scott Creek and 1,500 feet downstream from highway bridge.

DRAINAGE AREA.—348 square miles.

RECORDS AVAILABLE.—June, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,900 second-feet Apr. 22 (gage height, 5.00 feet); minimum, 150 second-feet Sept. 30.

1928–1931: Maximum discharge, about 14,000 second-feet Aug. 15, 1928 (gage height, estimated, 11.2 feet); minimum (estimated), 140 second-feet Sept. 2, 3, 1930.

REMARKS.—Records good except those for estimated periods, Oct. 24, 25, 27, Nov. 3, Sept. 14, 20, 21, which are fair. Slight diurnal fluctuation caused by operation of small power plant 1,300 feet upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	232	420	420	360	550	985	895	550	280	480	294
2	263	232	360	450	312	550	1,180	895	480	303	392	312
3	259	220	344	480	290	550	1,180	940	480	303	344	515
4	240	215	333	420	312	515	3,360	850	450	312	333	480
5	228	236	450	2,280	312	585	2,150	940	420	317	338	349
6	285	228	1,660	1,660	323	655	1,780	940	420	349	333	308
7	222	232	985	1,030	317	690	1,440	985	480	365	420	294
8	267	225	585	620	312	655	1,230	1,030	480	365	450	285
9	276	236	450	550	420	620	1,080	940	420	360	349	248
10	272	240	420	550	480	550	1,030	850	392	354	308	240
11	267	360	420	550	450	515	940	770	365	312	272	228
12	267	515	365	620	354	480	850	770	420	312	312	222
13	272	620	360	550	550	480	850	730	480	323	323	222
14	259	585	354	550	585	480	770	690	420	420	285	225
15	196	550	349	585	480	450	770	620	550	365	312	228
16	202	1,130	354	585	515	450	730	620	450	420	294	228
17	196	1,180	360	515	480	450	770	620	392	420	303	228
18	196	850	354	550	480	420	940	620	317	480	420	228
19	199	690	349	550	480	450	985	620	312	515	333	228
20	202	550	354	550	550	450	940	655	323	450	294	225
21	196	480	392	550	515	515	850	655	308	420	276	225
22	199	420	360	515	450	480	4,340	620	328	480	365	225
23	196	365	360	450	420	480	3,220	585	317	328	515	222
24	210	333	354	420	480	515	1,550	515	308	308	333	225
25	200	333	392	420	550	515	1,230	550	323	272	294	228
26	196	317	770	420	515	550	1,230	550	344	450	298	232
27	210	312	730	392	480	620	1,080	515	365	420	312	298
28	392	317	550	365	515	655	985	480	333	480	317	303
29	263	312	450	365	-------	940	940	480	312	420	420	276
30	255	392	420	360	-------	850	940	515	354	420	338	193
31	236	-------	420	360	-------	810	-------	515	-------	420	303	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	392	196	238	0.684	0.79
November	1,180	215	430	1.24	1.38
December	1,660	333	478	1.37	1.58
January	2,280	360	603	1.73	1.99
February	585	290	439	1.26	1.31
March	940	420	564	1.62	1.87
April	4,340	730	1,340	3.85	4.30
May	1,030	480	708	2.03	2.34
June	550	308	396	1.14	1.27
July	515	272	379	1.09	1.26
August	515	272	344	.989	1.14
September	515	193	267	.767	.86
The year	4,340	193	516	1.48	20.09

TUCKASEGEE RIVER AT BRYSON, N. C.

LOCATION.—Water-stage recorder 400 feet below highway bridge in Bryson Swain County, half a mile downstream from mouth of Deep Creek.

DRAINAGE AREA.—673 square miles.

RECORDS AVAILABLE.—November, 1897, to September, 1931.

EXTREMES.—Maximum discharge during year, 8,660 second-feet Apr. 4 (gage height, 5.36 feet); minimum, 293 second-feet Oct. 8.

1897–1931: Maximum discharge, 38,600 second-feet Mar. 19, 1899 (gage height, 11.0 feet, old gage datum); minimum, 27 second-feet Sept. 10, 1925 (gage height, 0.48 foot).

REMARKS.—Records excellent. Some regulation caused by operation of power plant on Oconalufty River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	516	438	1,180	802	802	1,280	2,690	1,760	1,230	768	970	579
2	476	428	885	699	768	1,160	2,340	1,770	1,010	655	885	548
3	457	419	756	802	756	1,110	2,090	1,640	945	666	970	1,940
4	448	419	733	768	744	1,070	6,340	1,550	909	744	790	1,390
5	438	457	744	2,160	744	1,010	5,280	1,580	873	995	733	873
6	457	466	2,020	2,330	733	995	4,180	1,710	849	1,360	825	722
7	419	448	1,530	1,580	733	1,020	3,380	2,080	849	861	837	655
8	457	438	1,160	1,420	744	1,350	2,890	1,970	933	699	909	600
9	600	410	1,010	1,280	1,470	1,150	2,610	1,760	825	666	756	568
10	526	438	933	1,180	1,470	1,060	2,430	1,690	779	790	733	526
11	476	476	885	1,110	1,030	1,030	2,610	1,530	768	666	744	516
12	466	733	861	1,250	958	995	2,200	1,530	780	600	677	495
13	438	1,140	802	1,280	1,010	970	1,970	1,470	1,220	590	733	466
14	419	768	768	1,120	2,160	982	1,820	1,400	897	756	633	448
15	410	1,400	744	945	1,480	1,070	1,740	1,320	958	768	622	448
16	410	2,990	710	1,010	1,280	982	1,640	1,260	1,080	802	644	438
17	438	2,700	756	1,020	1,630	933	1,600	1,250	825	837	611	448
18	391	2,160	744	1,060	1,800	909	1,660	1,220	744	958	633	438
19	346	1,460	768	1,080	1,580	885	1,960	1,200	710	1,260	688	419
20	364	1,180	699	1,030	1,400	873	1,630	1,250	710	1,110	666	419
21	400	1,030	622	933	1,290	873	1,660	1,420	825	1,290	779	419
22	364	933	644	873	1,190	1,080	5,140	1,200	873	2,110	733	419
23	382	849	666	897	1,110	1,040	3,780	1,180	873	1,080	1,030	400
24	476	790	622	873	1,100	1,080	2,800	1,110	733	1,060	744	428
25	466	756	611	849	1,260	1,120	2,520	1,070	790	849	633	400
26	400	722	1,350	849	1,190	1,030	2,520	1,060	873	921	579	419
27	382	655	1,760	861	1,080	1,160	2,250	1,100	756	1,040	633	419
28	400	600	1,140	873	1,040	2,930	2,010	1,020	655	1,100	622	391
29	722	644	995	837	-------	3,080	1,870	1,010	622	909	1,590	373
30	600	768	885	814	-------	2,040	1,760	1,110	733	921	849	355
31	486	-------	756	814	-------	1,800	-------	1,030	-------	814	644	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	722	346	453	0.673	0.78
November	2,990	410	904	1.34	1.50
December	2,020	611	927	1.38	1.59
January	2,330	699	1,080	1.60	1.84
February	2,160	733	1,160	1.72	1.79
March	3,080	873	1,230	1.83	2.11
April	6,340	1,600	2,650	3.94	4.40
May	2,080	1,010	1,400	2.08	2.40
June	1,230	622	854	1.27	1.42
July	2,110	590	924	1.37	1.58
August	1,590	579	771	1.15	1.33
September	1,940	355	565	.840	.94
The year	6,340	346	1,070	1.59	21.68

SCOTT CREEK AT SYLVA, N. C.

LOCATION.—Water-stage recorder just downstream from Gunter Creek at Sylva, Jackson County.

DRAINAGE AREA.—56 square miles.

RECORDS AVAILABLE.—February, 1921, to March, 1922; May, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,270 second-feet Nov. 16 (gage height, 2.71 feet); minimum, 23 second-feet several times in September (gage height, 0.87 foot).

1928–1931: Maximum discharge, 5,650 second-feet July 10, 1929 (gage height, 6.00 feet); minimum, 20 second-feet Sept. 3, 1930 (gage height, 0.86 foot).

REMARKS.—Records good except those for estimated periods, Oct. 11–28, Apr. 5–12, which are poor. The Sylva Paperboard Co. diverts 2,000,000 gallons daily around station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	24	77	54	52	75	146	117	80	55	57	32
2	39	25	57	50	52	72	129	120	75	53	45	30
3	37	27	54	59	50	75	126	117	73	51	45	41
4	35	25	52	62	46	72	482	114	70	51	40	49
5	37	37	57	165	46	70	320	111	68	57	40	47
6	34	39	86	129	46	72	250	117	65	59	40	45
7	31	35	67	99	50	77	220	126	65	57	47	43
8	41	35	57	99	52	90	190	126	68	53	45	37
9	48	37	54	90	120	75	190	120	65	53	41	35
10	37	39	54	86	77	75	170	120	63	55	38	35
11	35	39	54	83	64	75	150	111	61	53	41	35
12	33	101	52	112	62	70	140	111	61	51	45	33
13	32	80	50	96	82	70	129	109	80	47	41	35
14	32	59	46	83	137	75	122	103	87	55	*33	33
15	32	138	46	70	93	86	119	100	90	55	35	33
16	32	320	44	75	86	70	115	100	103	53	37	35
17	31	164	50	80	119	64	112	98	92	53	35	35
18	29	126	52	90	102	64	112	95	82	51	49	35
19	29	96	54	90	93	62	112	98	75	51	41	35
20	29	80	50	80	86	59	106	95	73	57	57	37
21	29	70	46	72	80	59	109	98	70	61	59	33
22	29	64	46	70	80	77	275	98	70	80	49	29
23	30	62	41	70	75	75	156	95	70	77	59	35
24	40	54	37	70	75	80	142	92	65	73	47	30
25	32	52	46	70	93	77	136	87	65	68	37	27
26	30	50	135	70	77	64	139	87	65	68	30	33
27	29	43	96	67	72	80	136	87	63	68	27	30
28	30	43	77	64	70	136	123	85	61	70	25	27
29	83	46	67	59	-------	136	120	82	59	77	35	27
30	41	92	62	57	-------	106	117	87	55	75	43	26
31	29	-------	54	54	-------	99	-------	85	-------	61	40	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches]
October	83	29	35.4	0.632	0.73
November	320	24	70.1	1.25	1.40
December	135	37	58.7	1.05	1.21
January	165	50	79.8	1.42	1.64
February	137	46	76.3	1.36	1.42
March	136	59	78.6	1.40	1.61
April	482	106	163	2.91	3.25
May	126	82	103	1.84	2.12
June	103	55	71.3	1.27	1.42
July	80	47	59.6	1.06	1.22
August	59	25	42.0	.750	.86
September	49	26	34.6	.618	.69
The year	482	24	72.5	1.29	17.57

OCONALUFTY RIVER AT CHEROKEE, N. C.

LOCATION.—Staff gage at cable footbridge a quarter of a mile upstream from Cherokee Indian Reservation, three-quarters of a mile upstream from Cherokee, Swain County, and 2 miles upstream from the mouth of Soco Creek.

DRAINAGE AREA.—133 square miles.

RECORDS AVAILABLE.—January, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,070 second-feet Apr. 4 (gage height, 7.40 feet); minimum, 94 second-feet Oct. 22, 23 (gage height, 3.66 feet).

1921–1931: Maximum discharge (estimated), 8,990 second-feet Jan. 21, 1922 (gage height, 9.50 feet); minimum, 56 second-feet Sept. 9, 1925 (gage height, 3.49 feet).

REMARKS.—Records good. Slight diurnal fluctuation during low stages caused by operation of power plant a quarter of a mile upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	177	122	392	182	206	301	586	412	386	191	259	177
2	154	118	308	177	196	276	480	366	288	150	265	169
3	131	118	225	177	187	254	480	412	265	150	346	702
4	128	125	211	173	187	248	3,480	340	242	177	276	515
5	125	131	288	515	177	236	1,620	353	225	259	248	327
6	125	128	295	550	173	236	1,170	399	220	785	265	259
7	122	125	276	405	169	248	922	550	215	288	295	215
8	165	122	265	372	187	288	785	480	211	211	265	196
9	196	118	254	333	623	231	785	412	191	196	236	182
10	128	128	236	295	446	225	702	405	187	182	215	169
11	115	146	231	271	320	215	702	386	177	165	282	161
12	125	314	220	301	288	211	586	386	177	150	236	150
13	118	314	196	265	550	201	550	366	333	142	225	138
14	112	215	187	265	623	206	550	353	231	154	201	138
15	108	662	182	308	480	259	515	327	211	146	187	131
16	105	1,220	173	346	399	215	480	301	248	231	173	131
17	112	830	177	265	586	201	446	295	211	282	161	125
18	108	830	173	236	623	196	446	276	201	271	154	125
19	112	480	169	259	550	196	412	276	191	515	173	118
20	105	372	161	236	480	182	446	308	187	379	173	118
21	102	308	154	220	405	191	446	379	201	446	220	118
22	97	276	154	191	372	215	1,620	314	392	1,020	215	122
23	99	236	146	206	340	196	744	288	265	446	259	115
24	165	215	146	196	314	206	623	282	215	392	187	112
25	125	211	173	196	372	196	550	276	191	333	165	108
26	112	201	177	206	308	196	662	271	196	295	154	108
27	105	196	412	215	282	259	550	259	177	271	191	105
28	108	187	225	220	276	1,620	480	248	165	327	182	105
29	295	177	211	211	-------	785	446	236	154	288	386	105
30	182	271	196	206	-------	515	412	259	282	295	271	99
31	128	-------	187	206	-------	480	-------	288	-------	265	206	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches]
October	295	97	132	0.992	1.14
November	1,220	118	297	2.23	2.49
December	412	146	219	1.65	1.90
January	550	173	265	1.99	2.29
February	623	169	361	2.71	2.82
March	1,620	182	306	2.30	2.65
April	3,480	412	756	5.68	6.34
May	550	236	339	2.55	2.94
June	392	154	228	1.71	1.91
July	1,020	142	303	2.28	2.63
August	386	154	228	1.71	1.97
September	702	99	178	1.34	1.50
The year	3,480	97	300	2.26	30.58

TELLICO RIVER AT TELLICO PLAINS, TENN.

LOCATION.—Water-stage recorder 200 feet above highway bridge on Tellico Plains-Murphy road and 1 mile southeast of Tellico Plains, Monroe County. Zero of gage is 846.84 feet above mean sea level.

DRAINAGE AREA.—120 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1927; October, 1930, to September, 1931. October, 1927, to September, 1930, at station half a mile upstream.

EXTREMES.—Maximum discharge during year, 3,790 second-feet Apr. 22 (gage height, 7.48 feet); minimum, 23 second-feet Oct. 8 (gage height, 0.84 foot).

1925–1931: Maximum discharge, about 9,560 second-feet Mar. 23, 1929 (gage height at upper station, 10.9 feet); minimum, 13 second-feet Sept. 7, 1925 (gage height, 0.25 foot).

REMARKS.—Records good. Discharge estimated May 27 to June 8.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	41	172	141	113	208	963	387	250	97	126	116
2	28	36	113	172	110	188	843	418	225	86	106	156
3	26	35	86	119	103	176	702	370	195	91	103	939
4	26	33	84	106	103	180	1,680	349	180	91	84	516
5	25	32	88	375	97	168	1,180	337	165	106	86	328
6	26	32	422	678	94	184	1,160	345	150	362	349	248
7	26	32	272	396	91	200	867	426	150	152	379	200
8	25	32	224	349	91	244	678	436	130	100	296	168
9	36	32	168	341	312	196	566	431	122	84	200	152
10	36	33	137	288	260	180	480	454	122	103	160	133
11	33	35	149	268	188	184	593	404	119	81	122	130
12	32	113	184	341	172	176	485	383	119	71	110	116
13	30	137	145	320	292	164	431	354	122	66	103	100
14	29	71	122	280	1,230	172	387	328	103	68	86	91
15	28	216	106	236	566	220	358	300	94	76	84	86
16	29	485	103	240	413	184	337	280	91	116	78	84
17	30	345	106	196	449	172	304	268	91	106	88	86
18	28	296	103	192	458	168	288	252	97	119	94	81
19	28	172	106	232	418	160	320	236	91	116	300	76
20	25	122	110	216	362	156	288	292	91	97	176	71
21	26	97	91	192	312	164	272	476	97	328	449	66
22	25	91	88	192	272	244	1,930	320	94	396	400	64
23	30	81	84	168	256	192	963	337	94	188	341	64
24	56	66	76	156	244	244	654	288	91	145	236	66
25	50	66	91	152	268	264	557	272	91	116	184	62
26	35	64	308	149	240	224	584	256	122	113	152	58
27	32	54	370	145	216	260	521	245	91	110	244	56
28	35	52	240	149	204	915	472	235	78	122	176	54
29	122	76	200	133	-------	819	431	225	78	126	204	52
30	64	71	168	126	-------	494	400	220	74	149	172	52
31	44	-------	145	122	-------	467	-------	225	-------	116	126	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	122	25	35.4	0.295	0.34
November	485	32	102	.850	.95
December	422	76	157	1.31	1.51
January	678	106	231	1.92	2.21
February	1,230	91	283	2.36	2.46
March	915	156	257	2.14	2.47
April	1,930	272	656	5.47	6.10
May	476	220	327	2.72	3.14
June	250	74	121	1.01	1.13
July	396	66	132	1.10	1.27
August	449	78	188	1.57	1.81
September	939	52	149	1.24	1.38
The year	1,930	25	219	1.82	24.77

CLINCH RIVER AT CLEVELAND, VA.

LOCATION.—Chain gage at steel highway bridge in Cleveland, Russell County.
DRAINAGE AREA.—536 square miles.
RECORDS AVAILABLE.—October, 1920, to September, 1931.
EXTREMES.—Maximum discharge during year, 6,660 second-feet Apr. 4 (gage height, 9.66 feet); minimum, 41 second-feet Oct. 5 (gage height, 1.68 feet). 1920–1931: Maximum stage, 21.1 feet Dec. 22, 1926 (discharge not determined); minimum discharge, that of Oct. 5, 1930.
REMARKS.—Records good. Discharge estimated Dec. 21–25, Dec. 31 to Jan. 3.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	59	67	200	145	290	1,220	520	800	112	636	252
2	50	51	76	170	130	248	2,030	396	658	162	723	233
3	53	53	85	170	111	248	1,710	420	495	232	781	607
4	51	60	82	191	120	281	4,230	348	420	268	636	723
5	42	62	80	607	115	226	5,460	302	325	445	694	368
6	49	64	90	2,120	109	218	3,530	302	325	495	781	321
7	53	60	348	1,570	128	211	3,750	445	372	990	2,210	248
8	49	60	495	1,030	128	321	3,970	575	740	740	781	226
9	54	64	298	607	155	417	2,900	685	602	520	636	194
10	48	62	237	636	321	344	2,030	740	445	520	495	181
11	53	58	237	468	344	298	1,780	685	325	396	417	170
12	48	60	184	344	260	241	1,700	685	239	260	607	170
13	51	62	150	344	252	256	1,260	800	220	196	900	148
14	48	75	164	298	607	298	1,060	1,060	220	196	665	142
15	53	76	113	264	495	417	860	740	280	159	417	148
16	57	82	109	161	840	1,030	685	860	325	159	321	140
17	50	106	124	218	781	781	630	685	325	154	256	142
18	51	445	104	273	900	550	548	630	224	148	215	155
19	48	302	115	233	1,160	468	520	548	167	120	260	150
20	45	186	124	222	1,220	392	445	470	136	129	665	130
21	49	118	120	172	900	298	396	548	138	325	1,220	138
22	48	106	110	204	723	233	740	658	146	685	1,360	115
23	51	92	110	161	781	298	1,620	800	180	2,900	694	124
24	69	92	100	140	522	368	1,190	800	232	1,870	1,100	120
25	72	85	90	150	468	495	925	925	183	1,570	781	155
26	69	79	167	128	298	578	925	1,120	136	900	665	184
27	61	73	965	145	252	495	925	990	138	900	550	194
28	60	64	840	164	260	900	800	860	143	723	442	233
29	62	75	550	135	-------	2,970	685	685	112	468	368	175
30	62	67	344	148	-------	1,500	602	548	116	344	344	138
31	62	-------	260	152	-------	1,360	-------	445	-------	290	298	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	72	42	53.8	0.100	0.12
November	445	51	96.6	.180	.20
December	965	67	224	.418	.48
January	2,120	128	381	.711	.82
February	1,220	109	447	.834	.87
March	2,970	211	549	1.02	1.18
April	5,460	396	1,640	3.06	3.41
May	1,120	302	654	1.22	1.41
June	800	112	306	.571	.64
July	2,900	112	561	1.05	1.21
August	2,210	215	675	1.26	1.45
September	723	115	214	.399	.44
The year	5,460	42	483	.901	12.23

CLINCH RIVER AT SPEER FERRY, VA.

LOCATION.—Chain gage at highway bridge three-quarters of a mile from Speer Ferry, Scott County, 1½ miles downstream from Clinchport, and half a mile below Copper Creek.

DRAINAGE AREA.—1,140 square miles.

RECORDS AVAILABLE.—October, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,300 second-feet July 23 (gage height, 12.10 feet); minimum, 77 second-feet several times in October (gage height, 1.26 feet).

1920–1931: Maximum discharge, 37,200 second-feet Feb. 3, 1923 (gage height, 24.35 feet); minimum, that of October, 1930.

REMARKS.—Records good. Discharge estimated Dec. 21–24, Jan. 2 and 3.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	115	138	585	270	615	4,330	1,470	1,190	312	805	585
2	81	108	135	400	270	585	4,330	1,190	1,470	270	1,110	555
3	83	115	152	300	232	585	4,210	1,110	1,280	250	2,000	585
4	87	125	158	412	250	645	5,290	1,030	1,190	495	1,370	1,110
5	81	118	173	875	232	495	10,600	1,030	1,110	525	1,190	1,110
6	83	105	312	3,250	215	468	6,970	912	1,030	840	1,370	740
7	77	108	525	3,610	232	440	6,850	840	840	1,190	1,890	585
8	77	115	708	2,240	232	385	6,250	840	805	1,470	2,360	495
9	81	118	708	1,570	615	385	5,650	875	772	1,280	1,280	875
10	87	115	525	1,190	990	740	5,170	1,110	772	2,000	1,030	385
11	81	118	440	912	1,110	645	4,690	1,570	708	875	772	360
12	81	132	412	840	875	615	3,970	1,780	708	840	1,030	312
13	81	158	360	840	708	585	3,730	2,240	555	740	1,570	290
14	77	158	290	708	1,670	555	2,240	2,490	495	525	1,370	290
15	77	170	270	615	2,360	555	2,120	2,000	525	525	1,030	270
16	95	182	232	468	2,000	585	1,890	1,890	950	525	708	270
17	110	232	215	440	1,780	1,030	1,780	1,780	740	495	585	270
18	103	495	215	495	2,120	912	1,280	1,470	615	555	585	232
19	99	645	215	525	2,490	840	1,110	1,370	495	1,190	615	270
20	83	615	232	495	2,240	740	950	1,470	385	840	2,880	250
21	81	412	210	468	2,000	645	875	1,280	335	875	5,290	232
22	77	270	200	495	1,570	675	3,610	1,280	312	4,090	4,930	232
23	79	215	190	468	1,190	675	5,770	1,280	312	9,560	5,530	200
24	89	164	180	440	950	740	4,930	1,190	312	7,090	3,130	215
25	105	152	176	385	875	1,570	2,880	1,190	335	7,910	2,000	215
26	118	145	312	360	840	1,030	2,490	1,280	360	3,490	1,470	250
27	128	161	805	360	708	1,030	2,360	1,370	385	2,240	1,190	290
28	135	138	1,670	335	615	1,570	2,240	1,780	412	1,780	950	290
29	132	140	1,190	312	-------	5,050	2,000	1,670	385	1,370	840	312
30	125	145	912	290	-------	4,450	2,000	1,190	360	1,280	740	290
31	122	-------	708	290	-------	3,250	-------	990	-------	912	675	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	135	77	93.6	0.082	0.09
November	645	105	200	.175	.20
December	1,670	135	418	.367	.41
January	3,610	290	806	.707	.82
February	2,490	215	1,060	.930	.97
March	5,050	385	1,070	.939	1.08
April	10,600	875	3,750	3.29	3.67
May	2,490	840	1,390	1.22	1.41
June	1,470	312	671	.589	.66
July	9,560	250	1,820	1.60	1.84
August	5,530	585	1,690	1.48	1.71
September	1,110	200	412	.361	.40
The year	10,600	77	1,110	.974	13.26

CLINCH RIVER NEAR TAZEWELL, TENN.

LOCATION.—Water-stage recorder at Evans Ferry, 600 feet below highway bridge on Tazewell-Morristown road, 2½ miles above mouth of Indian Creek, and 7 miles southeast of Tazewell, Claiborne County. Zero of gage is 1,012.55 feet above mean sea level.

DRAINAGE AREA.—1,500 square miles.

RECORDS AVAILABLE.—August, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 11,800 second-feet Apr. 5 (gage height, 7.35 feet); minimum, 125 second-feet Oct. 17 (gage height, 1.03 feet). 1927–1931: Maximum discharge, about 28,000 second-feet Mar. 24, 1929 (gage height, 13.0 feet); minimum, that of Oct. 17, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	184	233	845	478	875	3,320	2,020	1,230	418	1,090	782
2	148	184	244	670	448	827	2,940	1,720	1,360	388	1,010	730
3	141	184	244	545	425	800	3,520	1,570	1,520	381	1,230	875
4	138	176	250	560	403	773	5,690	1,410	1,320	425	1,800	818
5	135	172	268	764	381	730	10,300	1,280	1,090	662	1,430	1,180
6	135	176	485	1,870	373	687	10,300	1,160	987	773	1,360	1,140
7	135	176	687	3,620	352	654	7,310	1,100	935	895	1,700	875
8	138	172	687	3,220	352	630	7,070	1,280	925	1,200	2,170	712
9	160	172	827	2,250	500	646	6,380	1,800	966	1,440	2,020	614
10	160	176	818	1,690	987	875	5,460	2,670	1,160	1,380	1,340	560
11	156	172	687	1,380	1,240	895	4,570	2,670	1,020	1,570	1,030	500
12	156	198	598	1,210	1,220	818	4,350	2,580	855	1,150	915	478
13	138	286	530	1,200	1,070	773	4,040	2,940	755	895	1,220	433
14	132	292	485	1,120	2,090	746	3,220	2,940	696	696	1,580	418
15	132	262	448	987	2,850	755	2,500	2,760	638	646	1,380	388
16	128	325	403	836	2,760	782	2,090	2,670	646	654	1,090	366
17	125	470	396	746	2,410	976	1,790	2,250	976	670	845	352
18	132	568	366	721	2,500	1,330	1,630	1,870	827	552	704	352
19	141	670	366	976	2,940	1,150	1,560	1,650	712	895	630	346
20	145	827	352	987	2,940	987	1,380	1,620	614	1,290	791	381
21	141	704	359	895	2,670	895	1,240	1,760	560	1,080	3,520	403
22	138	560	373	827	2,170	875	2,410	1,630	515	2,410	5,010	346
23	135	448	396	738	1,760	925	7,310	1,630	448	6,610	5,340	318
24	145	381	381	654	1,460	935	6,840	1,580	606	10,500	4,570	280
25	152	325	359	614	1,360	1,020	4,350	1,600	895	7,310	2,760	268
26	152	298	433	582	1,220	1,150	3,620	1,630	782	5,920	1,940	292
27	156	280	1,060	552	1,050	1,260	3,820	1,940	638	3,130	1,530	318
28	172	262	1,630	545	945	2,250	3,320	2,250	530	2,250	1,240	339
29	208	244	1,870	508	-------	5,580	2,760	1,870	470	1,670	1,080	346
30	218	244	1,440	500	-------	6,610	2,330	1,560	433	1,870	976	352
31	203	-------	1,080	485	-------	4,900	-------	1,330	-------	1,320	865	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	218	125	150	0.100	0.12
November	827	172	320	.213	.24
December	1,870	233	605	.403	.46
January	3,620	485	1,070	.713	.82
February	2,940	352	1,410	.940	.98
March	6,610	630	1,390	.927	1.07
April	10,300	1,240	4,250	2.83	3.16
May	2,940	1,100	1,890	1.26	1.45
June	1,520	433	837	.558	.62
July	10,500	381	1,970	1.31	1.51
August	5,340	630	1,750	1.17	1.35
September	1,180	268	519	.346	.39
The year	10,500	125	1,340	.893	12.17

CLINCH RIVER NEAR COAL CREEK, TENN.

LOCATION.—Water-stage recorder 300 feet upstream from highway bridge at Massengill's store, three-quarters of a mile above mouth of Coal Creek, and 3½ miles east of town of Coal Creek, Anderson County. Zero of gage is 808.95 feet above mean sea level.

DRAINAGE AREA.—2,960 square miles.

RECORDS AVAILABLE.—May, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 18,700 second-feet Apr. 24 (gage height, 12.5 feet); minimum, 372 second-feet Oct. 20 (gage height, 0.54 foot). 1927–1931: Maximum discharge, about 63,400 second-feet Mar. 23, 1929 (gage height, 30.7 feet); minimum, that of Oct. 20, 1930.

REMARKS.—Records excellent.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	436	500	644	2,210	1,100	2,510	9,070	5,170	2,560	887	2,360	1,410
2	420	500	653	1,760	1,040	2,360	6,830	4,540	2,310	851	2,010	1,310
3	404	476	644	1,460	1,020	2,260	6,110	4,060	2,410	815	1,910	1,910
4	388	468	635	1,260	959	2,160	6,830	3,600	2,660	851	1,910	1,960
5	388	460	725	1,460	932	2,010	9,580	3,270	2,360	869	2,830	1,460
6	388	452	3,490	3,050	914	1,860	15,000	2,940	2,060	1,310	3,380	1,710
7	404	436	2,780	4,060	878	1,760	14,600	2,830	1,910	1,810	2,720	2,060
8	428	420	2,460	5,560	878	1,760	11,000	2,780	1,760	1,760	2,560	1,610
9	554	420	1,960	5,170	1,010	1,710	10,300	2,940	1,710	1,810	3,050	1,260
10	527	420	1,910	4,060	1,910	1,610	9,240	4,660	1,710	2,410	3,270	1,110
11	509	436	1,810	3,380	2,510	1,710	9,070	5,300	1,910	2,110	2,260	995
12	500	476	1,510	2,940	2,780	1,810	8,070	5,040	1,810	2,460	1,760	932
13	468	590	1,260	2,940	2,830	1,710	7,910	5,040	1,810	2,060	1,810	905
14	452	707	1,130	2,940	3,600	1,610	7,280	5,170	1,560	1,860	1,810	851
15	420	734	1,050	2,660	5,430	1,610	5,830	5,300	1,460	1,360	2,260	788
16	404	914	995	2,310	5,830	1,610	4,910	4,910	1,510	1,130	2,110	743
17	396	2,410	950	2,060	5,690	1,610	4,300	4,540	1,310	1,220	1,710	716
18	380	2,940	923	1,910	5,560	1,760	3,820	3,940	1,710	1,100	1,410	680
19	380	2,110	896	2,360	5,830	2,260	3,490	3,490	1,710	1,100	1,220	680
20	372	1,710	914	2,720	6,250	2,060	3,380	3,270	1,460	1,220	1,660	680
21	380	1,610	959	2,560	5,830	1,860	3,270	3,600	1,260	2,940	3,050	680
22	380	1,410	995	2,260	5,040	1,910	9,410	3,820	1,120	3,490	5,040	716
23	380	1,130	1,030	1,960	4,180	2,110	13,700	3,710	1,090	4,910	6,390	698
24	404	986	1,030	1,810	3,600	2,260	17,100	3,490	1,000	10,300	6,980	662
25	420	869	1,000	1,610	3,270	2,410	13,700	3,270	950	15,600	6,110	644
26	420	797	1,260	1,460	3,490	2,560	9,410	3,380	1,260	10,800	4,060	644
27	436	725	2,310	1,360	3,050	2,780	8,900	3,270	1,310	7,750	3,160	671
28	452	689	3,050	1,310	2,660	4,910	8,230	3,490	1,130	4,660	2,510	635
29	476	671	3,490	1,220	-------	9,940	7,130	3,940	1,000	3,490	2,160	653
30	492	635	3,490	1,180	-------	12,700	6,110	3,380	959	2,780	1,810	644
31	500	-------	2,780	1,130	-------	12,900	-------	2,940	-------	2,780	1,610	-------

Month	Maximum	Minimum	Mean	Per square mile	Run off in inches
October	554	372	431	0.145	0.17
November	2,940	420	903	.305	.34
December	3,490	635	1,570	.530	.61
January	5,560	1,130	2,390	.807	.93
February	6,250	878	3,150	1.06	1.10
March	12,900	1,610	3,040	1.03	1.19
April	17,100	3,270	8,450	2.85	3.18
May	5,300	2,780	3,910	1.32	1.52
June	2,660	950	1,630	.551	.61
July	15,600	815	3,180	1.07	1.23
August	6,980	1,220	2,800	.946	1.09
September	2,060	635	1,010	.341	.38
The year	17,100	372	2,700	.912	12.35

POWELL RIVER NEAR PENNINGTON GAP, VA.

LOCATION.—Chain gage at highway bridge 1,000 feet below North Fork and 3 miles southeast of Pennington Gap, Lee County.

DRAINAGE AREA.—304 square miles.

RECORDS AVAILABLE.—October, 1920, to November, 1931 (discontinued).

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to Nov. 16, 1931, 6,820 second-feet Apr. 22 (gage height, 10.40 feet); minimum, 11 second-feet several times in October, 1930 (gage height, 1.48 feet).

1920–1931: Maximum discharge, 28,900 second-feet Mar. 23, 1929 (gage height, 27.66 feet); minimum, that of October, 1930.

REMARKS.—Records good. Discharge estimated Nov. 27–29, Dec. 5, Jan. 1–3. Two small gristmills above gage cause considerable diurnal fluctuation, and a large steam plant on North Fork uses practically the entire low-water flow of that stream.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	13	34	42	55	61	155	880	408	449	40	214	106
2	13	36	52	40	54	153	764	369	388	49	584	167
3	12	34	66	40	50	143	633	312	294	64	408	312
4	12	34	26	57	47	141	1,410	260	244	151	260	470
5	11	28	50	312	45	138	1,480	244	214	193	214	260
6	11	28	408	880	43	125	1,130	211	193	260	260	199
7	12	34	331	537	42	123	710	276	164	350	331	162
8	12	40	200	312	43	112	940	428	173	276	211	113
9	21	37	134	214	229	138	764	388	148	187	167	99
10	25	38	114	181	449	141	584	514	125	312	143	86
11	19	38	62	138	350	138	1,270	492	106	229	138	74
12	18	50	59	141	244	148	1,130	633	97	138	159	70
13	18	55	48	153	369	146	880	764	123	104	181	56
14	15	75	43	136	1,000	150	608	710	148	93	156	56
15	20	62	42	125	764	181	470	560	193	104	130	46
16	20	88	45	77	514	186	388	492	312	91	102	50
17	47	178	38	83	537	176	331	449	211	72	211	50
18	25	106	54	100	940	170	449	276	153	244	294	46
19	25	88	34	108	880	163	369	294	113	1,480	196	102
20	34	55	32	112	658	153	260	369	91	633	276	205
21	25	62	37	110	428	146	260	537	82	2,180	1,780	57
22	21	38	37	104	312	173	4,480	428	72	1,860	1,780	42
23	21	37	32	98	260	260	2,800	388	97	4,280	1,200	41
24	38	37	28	100	214	260	1,410	350	102	2,180	658	38
25	43	54	28	90	200	470	940	331	88	1,270	470	40
26	52	37	79	83	165	449	1,200	492	61	710	369	52
27	54	30	428	81	155	369	1,000	710	57	470	208	57
28	98	25	260	73	138	1,940	820	537	44	388	173	59
29	38	20	170	73	------	3,080	658	428	42	276	173	44
30	36	24	125	73	------	1,270	492	312	38	294	159	34
31	37	------	77	66	------	710	------	312	------	229	120	------

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1931			1931			1931		
1	27	54	11	23	27	21	17	------
2	29	50	12	26	31	22	24	------
3	32	44	13	27	28	23	18	------
4	22	46	14	26	28	24	16	------
5	23	40	15	28	29	25	26	------
6	26	36	16	27	32	26	29	------
7	28	31	17	22	------	27	22	------
8	27	34	18	23	------	28	31	------
9	28	32	19	16	------	29	97	------
10	22	31	20	18	------	30	86	------
						31	61	------

Monthly discharge in second-feet, of Powell River near Pennington Gap, Va., 1930–31

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
1930–31					
October	98	11	27.3	0.090	0.10
November	178	20	50.1	.165	.18
December	428	26	103	.339	.39
January	880	40	153	.503	.58
February	1,000	42	328	1.08	1.12
March	3,080	112	391	1.29	1.49
April	4,480	260	984	3.24	3.62
May	764	211	428	1.41	1.63
June	449	38	154	.507	.57
July	4,280	40	620	2.04	2.35
August	1,780	102	378	1.24	1.43
September	470	34	106	.349	.39
The year	4,480	11	310	1.02	13.85
October	97	16	29.9	.098	.11
November 1–16	54	27	35.8	.118	.07

POWELL RIVER NEAR ARTHUR, TENN.

LOCATION.—Water-stage recorder at highway bridge at McHenry's ford on State Highway 32, 2¼ miles east of Arthur, Claiborne County, and 2¼ miles below mouth of Indian Creek. Zero of gage is 1,045.84 feet above mean sea level.

DRAINAGE AREA.—685 square miles.

RECORDS AVAILABLE.—October, 1919, to September, 1931.

EXTREMES.—Maximum discharge during year, 8,240 second-feet Apr. 23 (gage height, 9.70 feet); minimum, 82 second-feet Oct. 8 (gage height, 0.11 foot).

1919–1931: Maximum discharge, about 27,800 second-feet Mar. 24, 1929 (gage height, 23.8 feet); minimum discharge, 82 second-feet Sept. 10, 11, 1925, Oct. 8, 1930; minimum gage height, 0.00 foot Sept. 10, 11, 1925.

Maximum stage known, 27.2 feet Jan. 29, 1918.

REMARKS.—Records good. Gage heights estimated Nov. 12–15.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	118	125	405	241	530	2,000	1,300	618	176	530	268
2	89	112	131	330	228	513	1,800	1,110	645	176	455	236
3	89	110	140	264	219	502	1,660	960	700	187	470	316
4	89	107	134	250	215	486	1,700	870	612	202	728	325
5	93	105	152	365	202	460	2,480	755	535	410	623	524
6	87	110	568	728	194	420	2,840	689	470	440	562	535
7	89	105	689	1,200	183	410	2,320	700	430	486	524	390
8	105	107	557	1,240	183	400	2,000	810	430	540	480	320
9	120	105	486	870	420	375	1,770	930	400	496	480	254
10	128	102	355	728	782	380	1,530	1,270	390	465	390	219
11	110	110	296	612	960	395	1,740	1,270	370	628	330	190
12	102	107	259	579	870	375	2,160	1,170	335	535	316	180
13	98	123	228	645	728	365	2,160	1,300	350	380	325	165
14	95	137	211	634	1,530	375	1,700	1,500	360	292	345	158
15	95	152	190	568	1,960	395	1,360	1,360	335	241	345	152
16	95	273	180	480	1,800	405	1,040	1,170	440	215	311	143
17	93	662	183	430	1,430	425	990	990	513	219	268	137
18	93	596	172	390	1,530	425	900	900	518	241	232	128
19	91	410	172	465	1,960	420	930	782	410	634	215	125
20	89	306	180	480	1,840	405	930	782	340	1,170	259	128
21	89	223	202	455	1,500	380	810	1,300	292	1,300	568	128
22	93	194	223	430	1,040	430	3,560	1,270	273	2,240	1,400	152
23	91	176	228	410	930	491	6,300	1,080	273	3,740	1,430	152
24	107	158	219	380	782	574	5,640	960	250	5,030	1,700	131
25	118	149	187	340	755	728	3,020	870	232	3,470	990	120
26	115	143	282	320	728	810	2,480	810	259	1,920	650	125
27	107	137	810	311	606	900	2,480	930	245	1,240	491	120
28	110	128	900	292	546	1,840	2,320	1,080	215	870	415	118
29	115	118	870	277	-------	4,430	1,920	960	194	684	375	118
30	125	123	634	259	-------	5,530	1,560	782	194	612	325	123
31	118	-------	491	245	-------	2,930	-------	684	-------	618	282	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	128	87	101	0.147	0.17
November	662	102	184	.269	.30
December	900	125	337	.492	.57
January	1,240	245	496	.724	.83
February	1,960	183	870	1.27	1.32
March	5,530	365	887	1.29	1.49
April	6,300	810	2,140	3.12	3.48
May	1,500	684	1,010	1.47	1.70
June	700	194	388	.566	.63
July	5,030	176	963	1.41	1.63
August	1,700	215	542	.791	.91
September	535	118	206	.301	.34
The year	6,300	87	675	.985	13.37

EMERY RIVER AT OAKDALE, TENN.

LOCATION.—Water-stage recorder 1,000 feet below highway bridge at Oakdale, Morgan County. Mud Lick Creek enters from left just above highway bridge. Zero of gage is 763.26 feet above mean sea level.

DRAINAGE AREA.—758 square miles.

RECORDS AVAILABLE.—October, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 12,700 second-feet Mar. 28 (gage height, 11.2 feet); minimum, 5.3 second-feet Sept. 25 (gage height, 1.45 feet).

1929–1931: Maximum discharge, 23,800 second-feet Nov. 17, 1929 (gage height, 15.7 feet); minimum, 0.4 second-foot Sept. 6, 7, 1930 (gage height, 1.20 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	9.5	106	740	346	2,040	2,780	1,240	168	10	48	34
2	22	9.0	118	572	318	1,920	2,460	1,140	170	9.5	60	27
3	19	9.0	158	554	292	1,740	2,160	1,000	152	12	80	49
4	17	9.0	168	480	272	1,510	1,920	788	126	14	70	76
5	13	8.0	237	955	261	1,210	1,740	700	108	12	62	68
6	12	6.5	3,230	3,620	240	982	1,510	788	92	11	80	51
7	9.5	6.5	3,160	2,840	228	910	1,260	1,190	78	21	140	42
8	12	6.5	1,740	2,100	219	1,290	1,070	1,510	67	30	110	48
9	17	6.5	1,090	1,800	318	1,390	910	1,510	56	30	128	38
10	41	6.5	772	1,680	955	1,190	788	2,400	49	30	120	29
11	80	6.5	584	1,510	1,020	1,070	1,680	2,100	41	26	110	26
12	78	12	515	1,620	856	991	1,620	1,620	39	21	114	22
13	64	18	458	2,220	829	856	1,330	1,290	37	21	112	19
14	51	19	404	2,040	3,160	756	1,110	1,050	46	30	94	15
15	40	26	362	1,510	3,750	780	955	856	57	80	90	12
16	32	84	342	1,190	2,520	772	847	660	45	59	98	13
17	29	505	334	1,080	2,640	692	756	548	37	67	70	10
18	25	676	326	1,080	4,860	625	892	471	33	80	54	9.0
19	20	444	330	1,140	4,300	584	804	394	31	120	46	8.0
20	18	314	362	1,290	3,160	560	684	412	29	189	112	7.5
21	15	247	386	1,190	2,460	510	676	476	26	180	261	6.5
22	12	216	412	1,000	1,860	578	7,260	390	24	155	138	6.5
23	12	192	422	829	1,510	865	6,050	366	21	195	98	7.5
24	12	180	390	716	1,280	910	3,490	350	19	180	68	8.0
25	11	155	350	611	1,800	1,200	2,640	334	19	130	65	6.1
26	10	142	560	542	2,780	1,150	2,520	261	15	114	54	8.5
27	9.0	130	2,460	495	2,340	1,150	3,230	231	12	100	76	7.5
28	9.5	120	2,040	471	1,920	6,540	2,520	198	11	84	86	6.5
29	11	106	1,510	430	-------	7,850	1,980	172	9.5	62	67	8.0
30	11	102	1,160	386	-------	4,300	1,510	150	11	50	57	8.0
31	10	-------	937	362	-------	2,970	-------	142	-------	44	46	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	80	9.0	24.1	0.032	0.04
November	676	6.5	126	.166	.19
December	3,230	106	820	1.08	1.24
January	3,620	362	1,190	1.57	1.81
February	4,860	219	1,660	2.19	2.28
March	7,850	510	1,610	2.12	2.44
April	7,260	676	1,970	2.60	2.90
May	2,400	142	798	1.05	1.21
June	170	9.5	54.3	.072	.08
July	195	9.5	69.9	.092	.11
August	261	46	90.8	.120	.14
September	76	6.1	22.6	.030	.03
The year	7,850	6.1	697	.920	12.47

DADDY CREEK NEAR CRAB ORCHARD, TENN.

LOCATION.—Staff gage at site of former highway bridge on old State highway 1, 3,000 feet above mouth of North Creek, 1.4 miles below mouth of Bird Creek, and 2 miles northwest of Crab Orchard, Cumberland County.

DRAINAGE AREA.—93.8 square miles.

RECORDS AVAILABLE.—October, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,440 second-feet Mar. 28 (gage height, 7.0 feet); minimum, 0.3 second-foot Sept. 19–21 (gage height, 0.50 foot).

REMARKS.—Records good above 10 second-feet and fair below. No record Oct. 5–28.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	3.3	17	112	47	250	320	142	28	1.0	1.8	1.0
2	.9	3.0	40	105	44	220	280	135	20	1.1	3.7	12
3	.6	2.7	36	79	39	200	230	112	17	1.5	2.8	17
4	.6	2.5	28	75	36	165	220	88	13	1.4	1.9	11
5	------	2.4	35	158	35	135	200	86	11	1.3	1.8	7.9
6	------	2.4	470	345	33	120	172	120	8.8	1.8	1.0	7.3
7	------	2.0	370	280	30	112	150	470	7.3	1.8	2.0	4.9
8	------	2.0	200	240	29	150	128	395	6.5	2.0	2.0	3.5
9	------	2.0	135	240	62	142	105	395	5.6	3.0	2.0	2.8
10	------	2.0	90	230	135	135	90	470	4.7	3.3	2.0	1.9
11	------	2.0	80	200	120	128	150	320	4.5	2.8	1.8	1.8
12	------	3.3	85	250	93	112	135	210	4.1	2.2	5.3	1.3
13	------	4.1	75	300	105	99	112	165	3.5	1.8	4.9	1.0
14	------	4.3	62	250	635	90	98	150	12	2.7	2.4	1.0
15	------	4.5	56	190	445	99	86	120	11	2.4	2.0	1.0
16	------	15	51	165	320	93	78	93	7.3	1.9	1.4	.6
17	------	104	53	150	470	84	77	80	5.3	3.0	2.4	.5
18	------	102	51	150	695	74	80	65	3.9	2.8	2.0	.5
19	------	66	55	200	495	74	92	56	3.2	3.0	2.0	.3
20	------	44	67	200	395	62	80	53	2.0	2.4	4.5	.3
21	------	33	78	165	320	60	72	56	2.0	6.3	13	.3
22	------	28	105	135	240	105	665	50	2.0	8.5	15	1.5
23	------	22	76	120	200	120	575	47	1.9	8.2	10	1.1
24	------	18	70	102	165	135	370	41	1.5	7.3	6.3	.6
25	------	18	57	83	300	165	300	35	1.4	6.0	2.8	.6
26	------	16	240	80	345	150	320	28	1.3	4.1	2.4	1.5
27	------	16	420	76	280	150	370	24	1.1	3.3	7.3	1.4
28	------	14	300	68	220	1,040	280	21	1.0	3.0	3.7	1.4
29	3.2	13	210	58	------	945	210	17	1.0	2.7	2.7	1.4
30	3.2	12	172	55	------	495	158	19	1.0	2.0	2.0	.5
31	3.0	------	142	51	------	345	------	26	------	1.4	1.5	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
November	104	2.0	18.8	0.200	0.22
December	470	17	127	1.35	1.56
January	345	51	158	1.68	1.94
February	695	29	226	2.41	2.51
March	1,040	60	202	2.15	2.48
April	665	72	207	2.21	2.47
May	470	17	132	1.41	1.63
June	28	1.0	6.43	.069	.08
July	8.5	1.0	3.10	.033	.04
August	15	1.0	3.75	.040	.05
September	17	.3	2.93	.031	.03

WHITE CREEK AT GLEN ALICE, TENN.

LOCATION.—Staff gage at highway bridge 1 mile southwest of Glen Alice, Roane County.
DRAINAGE AREA.—136 square miles.
RECORDS AVAILABLE.—October, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year, about 2,570 second-feet Mar. 28 (gage height, 6.0 feet); minimum, 2.3 second-feet Sept. 29, 30 (gage height, 1.30 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	4.9	37	180	70	432	520	180	23	23	5.8	3.5
2	3.8	4.7	53	145	63	380	432	168	18	20	5.2	4.0
3	3.5	5.0	50	132	58	340	355	135	15	10	16	7.4
4	3.2	5.2	45	119	53	278	715	121	12	6.9	9.8	5.6
5	3.1	5.2	80	752	48	220	580	125	10	12	7.7	10
6	2.9	4.7	1,700	1,080	46	180	432	135	8.8	12	17	8.5
7	2.9	4.7	715	612	43	184	335	520	7.7	13	22	6.9
8	2.9	4.7	380	460	41	278	260	460	6.9	7.7	13	5.6
9	5.3	4.5	240	380	123	260	212	520	6.2	5.8	7.2	5.0
10	9.1	4.6	188	345	168	248	174	550	5.8	5.6	6.9	4.7
11	7.9	4.5	148	305	153	224	162	405	5.3	4.4	5.5	4.5
12	5.6	5.3	132	460	142	192	130	315	5.0	3.6	4.7	4.1
13	5.0	5.6	121	490	188	171	119	232	4.9	3.4	4.4	3.6
14	4.5	13	113	405	905	156	107	184	4.9	4.4	4.0	3.3
15	4.2	40	99	300	580	148	97	142	5.5	4.0	3.6	3.2
16	3.8	260	77	248	432	130	88	113	4.9	3.8	3.3	3.1
17	6.0	612	71	220	550	115	80	92	4.4	3.9	3.1	3.3
18	4.7	380	74	216	790	103	80	79	4.0	4.4	2.9	3.2
19	4.5	132	74	260	645	97	76	64	3.5	6.0	3.0	3.1
20	4.1	82	75	260	520	88	69	81	3.8	5.3	3.8	3.1
21	4.0	64	81	244	405	84	68	91	3.5	20	5.3	2.9
22	3.8	56	85	204	320	150	988	69	3.6	12	5.5	2.9
23	4.0	50	97	171	260	156	715	61	4.2	9.8	5.0	2.9
24	4.7	41	86	148	224	196	460	51	3.9	9.4	4.7	2.9
25	4.0	38	85	132	612	228	355	44	4.1	6.2	4.7	2.9
26	4.0	30	228	117	645	224	355	38	4.9	5.2	6.5	2.7
27	4.2	28	752	107	460	248	432	32	4.7	12	8.2	2.7
28	4.5	23	460	99	380	1,920	350	27	4.5	8.5	4.7	2.5
29	5.6	19	355	91	-------	1,120	278	24	4.2	5.6	4.5	2.3
30	5.8	19	269	82	-------	680	224	20	7.7	4.7	3.9	2.3
31	5.3	-------	216	77	-------	520	-------	26	-------	4.2	3.5	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9.1	2.9	4.55	0.033	0.04
November	612	4.5	65.0	.478	.53
December	1,700	37	232	1.71	1.97
January	1,080	77	285	2.10	2.42
February	905	41	319	2.35	2.45
March	1,920	84	315	2.32	2.68
April	988	68	308	2.26	2.52
May	550	20	165	1.21	1.40
June	23	3.5	6.83	.050	.06
July	23	3.4	8.28	.061	.07
August	22	2.9	6.63	.049	.06
September	10	2.3	4.09	.030	.03
The year	1,920	2.3	142	1.04	14.23

PINEY RIVER AT SPRING CITY, TENN.

LOCATION.—Staff gage at highway bridge on Dayton-Harriman Pike, 175 feet below Southern Railway bridge and 1 mile north of Spring City, Rhea County. Zero of gage is 755.76 feet above mean sea level.

DRAINAGE AREA.—96.7 square miles.

RECORDS AVAILABLE.—June, 1927, to May, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 3,250 second-feet Mar. 28 (gage height, 4.6 feet); minimum, 0.7 second-foot Oct. 7 (gage height, 1.12 feet).

1927–1931: Maximum discharge, about 16,500 second-feet Mar. 23, 1929 (gage height, 8.25 feet); no flow several days during October and November, 1927, and Sept. 3–10, 1930.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1	1.6	5.9	68	175	59	383	460	175
2	1.4	5.0	79	145	54	335	414	156
3	1.1	4.2	72	132	48	286	347	129
4	1.0	3.4	63	122	47	235	600	111
5	1.0	2.6	142	770	44	186	600	116
6	.3	2.1	1,640	870	41	156	447	----------
7	.8	2.1	640	530	38	163	330	----------
8	1.6	1.9	383	402	35	212	260	----------
9	3.8	1.8	270	335	122	182	204	----------
10	6.4	1.9	195	302	106	175	171	----------
11	4.6	1.9	167	260	90	171	167	----------
12	3.0	6.4	148	408	86	159	129	----------
13	2.1	13	122	414	106	135	116	----------
14	2.1	21	106	347	600	129	100	----------
15	1.8	27	90	255	414	132	90	----------
16	1.6	122	88	212	324	116	81	----------
17	1.6	725	83	182	428	106	75	----------
18	1.5	347	77	195	600	93	68	----------
19	1.3	178	83	226	460	88	61	----------
20	1.1	116	100	195	371	81	59	----------
21	1.1	83	95	186	286	100	61	----------
22	1.0	81	100	163	221	221	1,040	----------
23	1.1	77	98	142	186	217	640	----------
24	1.3	64	90	126	163	265	434	----------
25	1.1	57	93	111	600	275	347	----------
26	1.1	50	383	100	530	240	434	----------
27	1.0	44	600	90	408	245	447	----------
28	1.5	38	440	86	330	1,900	347	----------
29	2.1	32	335	77	----------	870	270	----------
30	3.4	47	270	68	----------	565	199	----------
31	4.6	----------	212	64	----------	495	----------	----------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6.4	0.8	1.92	0.020	0.02
November	725	1.8	72.0	.745	.83
December	1,640	63	237	2.45	2.82
January	870	64	248	2.56	2.95
February	600	35	243	2.51	2.61
March	1,900	81	288	2.98	3.44
April	1,040	59	300	3.10	3.46

RICHLAND CREEK AT DAYTON, TENN.

LOCATION.—Staff gage at highway bridge on Dayton-Chattanooga Pike in Dayton, Rhea County, 1,000 feet below Southern Railway bridge. Zero of gage is 684.73 feet above mean sea level.

DRAINAGE AREA.—71.7 square miles.

RECORDS AVAILABLE.—June, 1927, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,140 second-feet Mar. 28 (gage height, 4.2 feet); no flow Sept. 15–30.

1927–1931: Maximum discharge, about 7,940 second-feet Mar. 23, 1929 (gage height, 8.0 feet); no flow July 28, Aug. 19 to Sept. 12, 1929, Sept. 15–30, 1931.

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	3.4	52	95	32	139	235	97	13	0.2	0.8	0.2
2	.8	3.2	45	91	32	131	235	93	11	.2	.8	.2
3	.7	3.0	42	89	30	126	205	79	6.6	.2	.8	.2
4	.6	3.0	44	89	26	121	640	67	3.8	.2	.8	.2
5	.6	2.6	482	270	25	116	405	60	2.8	.2	.7	.2
6	.8	2.4	1,040	270	23	111	252	89	2.0	.2	.6	.2
7	.9	2.2	290	270	23	107	196	83	1.7	.2	.6	.1
8	.9	1.8	220	196	23	97	161	109	1.4	.2	.5	.5
9	.9	1.8	167	178	42	91	139	270	1.2	.8	.5	.1
10	.9	1.8	139	167	42	83	121	220	.9	.6	.7	.1
11	.9	1.8	109	155	44	75	97	193	.9	.4	.4	.1
12	1.1	1.8	81	142	45	70	81	134	.8	.2	.2	.1
13	1.1	2.6	72	139	67	65	68	87	.8	.2	.2	.1
14	1.1	38	85	134	175	63	58	72	.6	.9	.2	.1
15	1.1	175	91	126	167	60	52	65	.6	.9	.2	0
16	1.1	175	81	114	169	56	48	56	.6	.8	.2	0
17	1.6	270	74	107	235	50	45	46	.6	.7	.2	0
18	3.2	205	74	97	235	44	42	41	.4	.6	.2	0
19	1.6	116	70	95	220	38	42	35	.2	5.6	1.1	0
20	1.2	85	70	93	167	35	42	29	.2	12	1.1	0
21	.9	57	70	89	144	38	42	24	.1	9.6	.7	0
22	.9	51	67	83	119	147	540	21	.4	6.6	.4	0
23	.9	45	65	77	107	190	310	19	.3	3.8	.3	0
24	.9	45	63	77	102	158	220	19	.2	2.6	.2	0
25	.9	42	175	74	205	144	220	15	.2	2.0	.2	0
26	1.1	41	235	74	205	134	220	12	.2	1.6	.2	0
27	1.1	35	220	74	175	121	220	10	.2	1.4	.2	0
28	1.1	32	181	65	150	1,090	167	7.9	.2	1.3	.2	0
29	2.4	42	164	50	-------	540	134	4.8	.2	1.1	.2	0
30	3.8	60	134	38	-------	290	107	3.4	.2	.9	.2	0
31	3.4	-------	129	36	-------	235	-------	8.4	-------	.8	.2	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3.8	0.6	1.27	0.018	0.02
November	270.0	1.8	51.5	.718	.80
December	1,040	42	156	2.18	2.51
January	270	36	118	1.65	1.90
February	235	23	108	1.51	1.57
March	1,090	35	154	2.15	2.50
April	640	42	178	2.48	2.77
May	270	3.4	66.7	.930	1.07
June	13	.1	1.74	.024	.03
July	12	.2	1.84	.026	.03
August	1.1	.2	.45	.0063	.007
September	.5	0	.08	.0011	.001
The year	1,090	0	69.6	.971	13.21

HIWASSEE RIVER AT MURPHY, N. C.

LOCATION.—Water-stage recorder 500 feet downstream from concrete bridge in Murphy, Cherokee County, and half a mile upstream from mouth of Valley River.

DRAINAGE AREA.—410 square miles.

RECORDS AVAILABLE.—June, 1896, to June, 1917; October, 1918, to September, 1931.

EXTREMES.—Maximum discharge during year, 8,500 second-feet Apr. 4 (gage height, 7.51 feet); minimum, 91 second-feet Nov. 6 (gage height, 1.61 feet). 1896–1917, 1918–1931: Maximum discharge, 23,100 second-feet Mar. 19, 1899 (gage height, 18.4 feet at old gage); minimum gage height, 2.10 feet Dec. 6, 1924 (caused by regulation; discharge not determined).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	235	272	368	368	270	603	1,470	928	661	501	520	246
2	218	174	352	330	383	584	1,400	1,090	527	409	368	252
3	188	202	296	360	316	527	1,150	917	431	331	345	1,400
4	202	235	290	296	296	527	4,540	875	448	363	270	735
5	179	246	296	857	309	518	3,370	875	431	571	290	423
6	193	182	649	1,100	309	509	2,440	960	416	1,350	309	352
7	208	202	605	817	309	492	1,820	1,200	370	501	302	296
8	202	202	440	735	270	603	1,470	1,200	474	345	406	283
9	330	152	375	725	440	565	1,250	1,060	423	345	290	246
10	240	214	375	635	538	518	1,110	1,150	385	465	290	296
11	358	225	360	575	375	509	1,110	928	370	322	257	174
12	235	318	360	765	360	448	1,050	896	370	240	257	218
13	224	466	352	828	447	492	949	833	385	283	309	213
14	224	316	296	725	1,940	492	875	781	349	778	246	184
15	202	544	316	605	1,140	409	812	751	474	390	246	188
16	202	1,400	296	575	854	474	792	690	393	415	224	184
17	208	1,130	330	528	896	440	761	690	385	352	375	208
18	197	953	316	528	875	416	751	671	349	352	337	174
19	184	595	316	501	792	408	963	612	294	379	570	170
20	193	474	337	491	720	393	958	661	349	402	457	170
21	188	398	322	465	671	408	886	700	427	539	423	193
22	188	375	316	415	612	690	4,970	622	492	922	337	213
23	197	296	309	432	546	651	2,860	632	324	482	296	230
24	235	360	290	432	584	622	1,820	584	294	390	252	141
25	224	313	252	367	584	574	1,510	574	331	337	252	197
26	218	302	534	406	537	537	1,380	556	355	296	246	202
27	193	264	765	375	501	681	1,190	565	355	633	309	165
28	205	257	575	375	501	1,180	1,060	527	300	398	283	161
29	338	257	501	368	-------	1,460	993	431	294	426	375	161
30	298	276	440	360	-------	1,070	939	537	614	468	330	152
31	218	-------	375	360	-------	939	-------	576	-------	322	257	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	358	179	223	0.544	0.63
November	1,400	152	387	.944	1.05
December	765	252	387	.944	1.09
January	1,100	296	539	1.31	1.51
February	1,940	270	585	1.43	1.49
March	1,460	393	604	1.47	1.70
April	4,970	751	1,550	3.78	4.22
May	1,200	431	777	1.90	2.19
June	661	294	402	.980	1.09
July	1,350	240	462	1.13	1.30
August	570	224	323	.788	.91
September	1,400	141	274	.668	.75
The year	4,970	141	542	1.32	17.93

HIWASSEE RIVER NEAR RELIANCE, TENN.

LOCATION.—Water-stage recorder just above notch between rock bluffs half a mile below mouth of Spring Creek and 3 miles below highway bridge at Reliance, Polk County. Zero of gage is 718.66 feet above mean sea level.

DRAINAGE AREA.—1,220 square miles.

RECORDS AVAILABLE.—October, 1926, to September, 1931. Records obtained at Reliance, 3 miles upstream, August, 1900, to December, 1913, and February, 1919, to September, 1926.

EXTREMES.—Maximum discharge during year, 17,600 second-feet Apr. 5 (gage height, 12.9 feet); minimum, 365 second-feet Sept. 30 (gage height, 2.50 feet).

1926–1931: Maximum discharge, 25,600 second-feet Sept. 3, 1928 (gage height, 16.0 feet); minimum, 286 second-feet Sept. 5, 1930 (gage height, 2.33 feet).

REMARKS.—Records good except those for extremely low stages, which are fair. Gage height interpolated June 6, 7. Possibly slight diurnal fluctuation caused by operation of power plants near headwaters.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	699	675	1,040	1,300	1,080	1,780	4,630	2,590	1,550	1,110	1,150	717
2	681	705	1,150	1,260	1,000	1,930	5,260	2,950	1,550	1,000	1,080	711
3	639	627	1,000	1,150	1,080	1,830	4,030	2,950	1,380	886	935	1,680
4	621	604	935	1,190	1,000	1,730	6,620	2,650	1,220	865	928	3,610
5	615	663	1,000	1,600	1,000	1,730	11,800	2,650	1,220	1,220	761	1,600
6	604	675	1,980	3,470	1,000	1,640	7,170	2,710	1,170	3,020	935	1,110
7	598	615	2,360	2,770	1,080	1,640	5,580	3,080	1,130	1,930	1,190	935
8	621	615	1,680	2,470	1,080	1,730	4,480	3,470	1,080	1,300	1,110	820
9	787	615	1,380	2,530	1,340	1,980	3,750	3,540	1,150	1,000	1,150	761
10	1,000	588	1,220	2,250	1,780	1,680	3,340	3,610	1,080	1,000	1,000	705
11	787	615	1,260	1,980	1,500	1,380	3,340	3,020	1,040	1,080	935	754
12	928	970	1,300	2,030	1,260	1,340	3,140	2,770	1,000	839	820	588
13	717	1,380	1,220	2,650	1,300	1,300	2,890	2,590	1,000	735	800	598
14	663	1,190	1,220	2,360	4,780	1,340	2,710	2,420	1,080	928	907	588
15	645	1,380	1,040	2,080	4,180	1,380	2,590	2,300	935	1,150	735	560
16	615	3,400	1,080	1,830	2,830	1,260	2,530	2,200	1,080	1,040	723	560
17	627	4,180	1,080	1,780	2,830	1,300	2,470	2,140	970	1,000	693	560
18	615	2,890	1,110	1,730	3,140	1,260	2,420	1,980	900	921	928	571
19	588	2,030	1,150	1,780	2,770	1,190	2,710	1,880	845	1,040	1,220	571
20	588	1,550	1,220	1,730	2,420	1,190	3,020	1,830	820	935	1,500	554
21	560	1,300	1,220	1,680	2,140	1,220	2,470	2,080	907	1,080	1,220	516
22	576	1,190	1,190	1,600	1,980	1,550	10,200	2,030	1,000	2,080	1,110	495
23	588	1,080	1,150	1,500	1,830	1,930	8,140	2,080	1,000	1,550	935	470
24	657	970	1,110	1,500	1,780	1,930	5,100	2,080	832	1,190	826	538
25	705	1,040	970	1,260	1,930	2,140	4,030	1,600	806	1,040	742	527
26	687	970	1,460	1,190	1,880	1,830	3,610	1,550	1,080	907	711	490
27	615	928	2,770	1,190	1,730	2,200	3,400	1,500	1,150	935	800	455
28	627	852	2,300	1,190	1,730	5,920	2,950	1,500	970	1,550	1,000	419
29	787	832	1,830	1,110	------	5,580	2,770	1,460	800	1,040	872	396
30	970	872	1,550	1,110	------	3,890	2,590	1,340	787	970	1,150	365
31	820	------	1,420	1,080	------	3,210	------	1,300	------	1,150	921	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,000	560	685	0.561	0.65
November	4,180	588	1,200	.984	1.10
December	2,770	935	1,370	1.12	1.29
January	3,470	1,080	1,750	1.43	1.65
February	4,780	1,000	1,910	1.57	1.64
March	5,920	1,190	2,000	1.64	1.89
April	11,800	2,420	4,320	3.54	3.95
May	3,610	1,300	2,320	1.90	2.19
June	1,550	787	1,050	.861	.96
July	3,020	735	1,180	.967	1.11
August	1,500	693	961	.788	.91
September	3,610	365	774	.634	.71
The year	11,800	365	1,620	1.33	18.05

HIWASSEE RIVER AT CHARLESTON, TENN.

LOCATION.—Water-stage recorder at Epperson packing plant, 250 feet above Southern Railway bridge at Charleston, Bradley County. Zero of gage is 665.53 feet above mean sea level.

DRAINAGE AREA.—2,300 square miles.

RECORDS AVAILABLE.—January, 1899, to December, 1902; October, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 20,500 second-feet Apr. 5 (gage height, 15.95 feet); minimum, 775 second-feet Sept. 18 (gage height, estimated, 1.15 feet).

1920–1931: Maximum discharge, about 49,500 second-feet Jan. 22, 1922 (gage height, 28.2 feet); minimum, 260 second-feet Sept. 14, 1925 (gage height, 0.22 foot).

Maximum stage known, 34.0 feet Mar. 31, 1886.

REMARKS.—Records good. Gage height partly estimated Jan. 14, 15, May 6, 7, 13, Sept. 17, 18. Considerable regulation during low and medium stages caused by operation of power plants on Ocoee River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,760	1,260	2,000	1,880	1,580	2,500	6,900	4,680	1,920	1,240	2,820	2,120
2	1,800	1,340	1,550	1,800	1,500	2,350	8,320	4,240	2,780	1,470	1,940	1,850
3	1,640	1,210	1,660	1,850	1,400	2,570	6,580	4,060	2,160	1,430	2,460	3,670
4	1,730	1,050	1,350	1,740	1,460	2,710	7,360	4,050	1,770	1,710	2,340	5,300
5	1,100	1,100	1,860	2,300	1,410	2,610	18,400	4,500	1,680	1,280	2,260	3,660
6	1,020	1,350	3,820	4,120	1,400	2,060	13,800	4,320	1,720	3,750	2,280	3,060
7	958	1,080	3,600	4,220	1,380	2,030	11,200	4,440	1,890	4,060	2,960	2,590
8	1,140	1,110	2,840	3,820	1,350	2,070	8,710	4,720	1,620	2,800	1,950	2,590
9	1,050	1,190	2,480	3,740	1,540	2,510	6,780	5,040	1,570	2,740	2,720	2,990
10	1,200	1,180	2,510	3,810	2,060	2,700	5,880	5,110	1,580	2,000	2,560	2,520
11	1,200	1,110	2,810	3,020	2,260	2,830	5,720	4,810	1,790	2,800	2,400	1,780
12	1,090	1,210	2,620	3,180	1,820	3,140	4,880	4,750	1,540	2,060	3,010	1,840
13	1,010	1,550	2,420	3,920	1,720	3,040	4,530	4,580	1,440	1,960	2,150	2,340
14	940	1,840	1,670	3,720	4,180	2,790	4,800	3,900	1,670	2,370	3,110	2,000
15	1,050	1,780	1,980	3,560	6,730	2,020	4,750	3,410	1,710	3,640	2,660	860
16	1,000	3,210	1,680	3,300	4,390	2,640	4,660	2,940	1,900	2,940	2,240	820
17	1,080	7,100	1,450	2,980	3,760	2,920	4,420	2,710	1,560	3,150	1,930	798
18	1,190	5,760	1,460	2,650	4,180	1,840	3,330	3,360	1,470	2,520	2,380	828
19	1,160	4,610	1,600	2,820	4,010	1,840	3,090	3,220	1,630	1,640	3,300	802
20	1,080	3,540	1,660	3,330	3,490	1,910	4,440	3,750	1,440	2,100	3,660	1,500
21	1,010	3,060	1,600	3,160	3,170	1,890	4,840	4,270	2,040	2,800	3,000	1,660
22	956	3,030	1,720	2,980	2,770	1,990	9,640	4,080	1,660	4,180	2,880	1,580
23	975	2,350	1,520	2,660	2,760	2,340	14,200	3,360	1,920	4,140	2,240	1,570
24	1,080	2,410	1,460	2,640	2,860	2,380	8,540	2,550	1,470	2,530	1,770	1,550
25	1,110	3,100	1,360	2,060	3,110	3,640	6,630	2,300	1,470	2,050	2,080	1,000
26	1,240	2,620	2,180	2,340	3,100	2,380	5,460	2,810	1,700	1,980	2,230	1,730
27	1,110	1,710	3,860	2,160	2,870	2,760	5,720	2,950	1,750	2,180	2,020	1,720
28	1,600	2,460	3,670	2,090	2,580	7,490	5,460	3,000	1,620	2,700	2,260	1,730
29	1,460	2,640	2,820	1,940	-------	10,500	5,220	2,850	1,600	2,480	3,240	1,140
30	1,340	2,000	2,390	1,910	-------	7,150	5,060	2,590	1,080	2,470	2,990	1,130
31	1,520	-------	2,300	1,820	-------	6,180	-------	2,130	-------	3,160	3,270	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,800	940	1,210	0.526	0.61
November	7,100	1,050	2,300	1.00	1.12
December	3,860	1,350	2,190	.952	1.10
January	4,220	1,740	2,820	1.23	1.42
February	6,730	1,350	2,670	1.16	1.21
March	10,500	1,840	3,150	1.37	1.58
April	18,400	3,090	6,980	3.03	3.38
May	5,110	2,130	3,730	1.62	1.87
June	2,780	1,080	1,700	.739	.82
July	4,180	1,240	2,530	1.10	1.27
August	3,660	1,770	2,550	1.11	1.28
September	5,300	798	1,960	.852	.95
The year	18,400	798	2,810	1.22	16.61

VALLEY RIVER AT TOMOTLA, N. C.

LOCATION.—Chain gage at highway bridge at Tomotla, Cherokee County, half a mile upstream from Rodgers Creek.

DRAINAGE AREA.—106 square miles.

RECORDS AVAILABLE.—June, 1904, to December, 1909; January, 1914, to April, 1917; October, 1918, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,900 second-feet Apr. 4 (gage height, 6.30 feet); minimum, 18 second-feet Sept. 29, 30 (gage height, 0.64 foot).

1904–1909, 1914–1917, 1918–1931: Maximum discharge (estimated), 7,780 second-feet Nov. 19, 1906 (gage height, 17.3 feet); minimum, 12 second-feet several times in August and September, 1925 (gage height, 0.52 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	39	114	119	92	154	456	242	134	65	53	51
2	40	34	92	114	88	144	394	230	125	56	50	50
3	39	34	79	110	88	134	350	207	114	53	47	164
4	36	34	77	102	83	121	1,410	207	104	72	50	174
5	34	34	144	242	77	110	984	207	95	185	67	95
6	34	34	164	242	77	117	732	242	86	174	60	74
7	34	34	134	218	77	134	522	294	88	88	63	56
8	58	34	106	207	77	144	424	242	90	72	63	50
9	63	34	97	207	185	134	364	230	84	65	75	48
10	51	34	92	185	207	125	322	230	79	60	102	43
11	50	36	97	185	154	125	350	218	77	55	63	40
12	45	121	95	322	119	121	294	207	77	50	72	37
13	40	93	86	267	144	121	254	196	77	51	67	36
14	36	65	79	218	840	119	230	185	77	56	50	34
15	34	154	74	185	456	117	230	174	95	68	45	32
16	34	254	74	164	280	114	218	174	95	63	39	32
17	32	230	74	154	322	114	207	164	74	55	37	28
18	30	185	79	164	322	114	230	154	70	53	45	24
19	29	134	90	154	294	110	230	144	70	53	51	24
20	29	88	86	144	254	108	207	185	70	53	67	23
21	29	83	79	134	218	106	207	174	70	185	75	22
22	28	79	74	134	185	154	1,170	144	70	185	63	23
23	37	74	70	125	174	144	624	144	70	90	55	24
24	60	72	67	121	164	164	456	134	70	56	53	24
25	48	70	67	119	174	154	364	134	74	53	48	24
26	37	67	394	116	164	154	336	134	72	79	45	24
27	34	63	379	110	174	230	294	125	70	90	79	22
28	185	58	280	108	174	590	254	119	65	74	56	20
29	90	56	174	104	-------	456	230	119	58	65	83	18
30	53	88	134	97	-------	336	230	117	74	58	60	18
31	45	-------	125	92	-------	322	-------	110	-------	53	53	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	185	28	46.3	0.437	0.50
November	254	34	80.5	.759	.85
December	394	67	122	1.15	1.33
January	322	92	160	1.51	1.74
February	840	77	202	1.91	1.99
March	590	106	171	1.61	1.86
April	1,410	207	419	3.95	4.41
May	294	110	180	1.70	1.96
June	134	58	82.5	.778	.87
July	185	50	78.5	.741	.85
August	102	37	59.2	.558	.64
September	174	18	44.5	.420	.47
The year	1,410	18	136	1.28	17.47

NOTTELY RIVER NEAR RANGER, N. C.

LOCATION.—Staff gage 200 feet upstream from highway bridge half a mile downstream from Ranger, Cherokee County, and 7½ miles southwest of Murphy.
DRAINAGE AREA.—272 square miles.
RECORDS AVAILABLE.—February, 1901, to December, 1905; January, 1914, to April, 1917; October, 1918, to September, 1931.
EXTREMES.—Maximum discharge during year, 4,330 second-feet Apr. 4, 21 (gage height, 11.10 feet); minimum, 98 second-feet Sept. 21 (gage height, 1.48 feet).

1901–1905, 1914–1917, 1918–1931: Maximum gage height, 21.0 feet Feb. 28, 1902 (discharge not determined); minimum discharge, 41 second-feet Sept. 6, 7, 23, 24, 1925 (gage height, 1.80 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	268	252	396	444	380	572	1,260	748	444	348	540	237
2	268	237	364	412	364	540	1,140	748	444	348	572	189
3	252	237	316	396	348	540	1,920	712	412	332	572	1,700
4	252	222	284	380	332	508	4,050	712	380	332	476	508
5	237	222	268	380	316	540	2,280	676	364	2,060	444	348
6	237	207	268	364	300	508	1,740	676	364	2,910	412	300
7	222	186	252	348	284	508	1,380	640	348	2,280	364	268
8	207	165	237	348	268	508	980	606	332	1,540	316	252
9	192	159	237	364	268	508	862	606	316	980	284	207
10	207	268	222	396	252	476	862	606	316	862	252	159
11	192	364	222	380	237	444	824	572	300	786	237	147
12	189	444	207	380	606	444	786	572	284	712	237	135
13	183	508	207	364	1,100	412	712	508	268	676	207	222
14	174	606	207	364	1,020	540	640	476	268	640	192	192
15	168	676	192	348	940	540	508	444	252	572	189	183
16	162	712	186	348	940	540	412	412	252	508	268	168
17	156	786	180	348	900	508	380	540	237	508	268	153
18	150	862	192	332	900	508	348	606	237	444	252	129
19	162	862	222	316	862	508	332	572	222	412	222	121
20	252	824	252	316	862	508	1,700	476	207	380	252	110
21	237	786	222	300	824	476	4,050	412	207	364	300	101
22	222	786	192	284	748	540	2,760	412	192	332	268	159
23	207	862	177	268	712	640	1,020	396	412	332	252	144
24	207	824	156	268	712	712	900	396	640	316	252	135
25	192	748	138	268	676	712	862	380	572	300	237	129
26	192	712	118	268	676	640	824	364	508	284	222	124
27	186	676	104	252	640	572	824	332	508	640	186	153
28	180	640	444	237	572	606	786	316	476	640	147	141
29	222	572	508	237	------	508	786	300	444	640	640	132
30	268	476	508	222	------	712	786	284	380	606	572	126
31	252	------	508	222	------	1,180	------	284	------	572	412	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	268	150	210	0.772	0.89
November	862	159	529	1.94	2.16
December	508	104	258	.949	1.09
January	444	222	328	1.21	1.40
February	1,100	237	609	2.24	2.33
March	1,180	412	563	2.07	2.39
April	4,050	332	1,220	4.49	5.01
May	748	284	509	1.87	2.16
June	640	192	353	1.30	1.45
July	2,910	284	731	2.69	3.10
August	640	147	324	1.19	1.37
September	1,700	101	236	.868	.97
The year	4,050	101	487	1.79	24.32

TOCCOA RIVER NEAR DIAL, GA.

LOCATION.—Water-stage recorder half a mile above Shallow Ford, 1 mile above Stanley Creek, and 4 miles northwest of Dial, Fannin County. Zero of gage is 1,781.13 feet above mean sea level.

DRAINAGE AREA.—175 square miles.

RECORDS AVAILABLE.—January, 1913, to September, 1931. May, 1907, to June, 1908, at Butts Bridge, 2 miles above Dial.

EXTREMES.—Maximum discharge during year, 2,400 second-feet Mar. 4 (gage height, 4.57 feet); minimum, 144 second-feet Oct. 30 (gage height, 0.79 foot). 1913–1931: Maximum discharge, about 9,200 second-feet July 9, 1916 (gage height, 10.0 feet); minimum, 60 second-feet Sept. 6, 1925 (gage height, 0.40 foot).

REMARKS.—Records good. Slight diurnal fluctuation caused by operation of small mills upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	141	280	253	256	422	1,100	602	482	250	256	192
2	149	141	221	243	253	374	815	670	414	237	260	189
3	144	141	209	246	250	370	692	602	394	263	243	840
4	141	141	200	240	246	359	1,760	566	386	256	221	382
5	139	139	256	648	246	344	1,190	602	378	504	218	280
6	139	139	692	562	240	337	1,040	670	366	508	253	246
7	134	137	410	430	237	446	865	1,040	363	305	270	224
8	240	132	326	422	233	482	790	840	378	266	274	230
9	298	132	291	398	355	414	740	740	355	266	237	209
10	206	134	270	363	291	390	692	692	344	284	308	200
11	194	141	263	343	256	382	715	670	340	246	277	194
12	169	245	256	454	250	366	670	648	333	237	250	186
13	159	263	237	414	426	355	625	625	322	227	233	183
14	151	189	233	382	715	333	602	602	322	330	215	180
15	146	410	221	340	442	344	580	571	326	508	224	178
16	146	975	218	337	378	330	571	548	319	352	221	183
17	141	790	237	322	580	322	553	544	308	308	322	180
18	137	625	230	382	482	312	553	526	294	308	312	172
19	137	390	227	378	426	312	625	512	294	266	305	172
20	134	316	221	344	390	305	553	535	322	256	274	172
21	134	277	206	330	363	326	602	544	340	308	256	172
22	134	250	206	316	352	418	1,560	499	305	366	246	167
23	134	237	194	308	344	348	865	482	280	274	230	164
24	151	221	186	298	348	382	765	466	270	253	224	159
25	146	215	186	291	414	363	715	458	340	240	203	154
26	139	209	580	288	355	344	715	450	340	270	215	146
27	139	189	450	284	340	490	648	442	284	466	246	149
28	151	183	348	280	363	765	625	426	263	316	203	146
29	215	189	312	274	------	692	602	418	256	319	322	144
30	164	224	288	266	------	558	580	414	246	270	237	146
31	146	------	260	260	------	740	------	430	------	692	203	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	298	134	158	0.903	1.04
November	975	132	264	1.51	1.68
December	692	186	281	1.61	1.86
January	648	240	345	1.97	2.27
February	715	233	351	2.01	2.09
March	765	305	410	2.34	2.70
April	1,760	553	780	4.46	4.96
May	1,040	414	575	3.29	3.79
June	482	246	332	1.90	2.12
July	692	227	321	1.83	2.11
August	322	203	250	1.43	1.65
September	840	144	211	1.21	1.35
The year	1,760	132	356	2.03	27.64

TOCCOA RIVER NEAR BLUERIDGE, GA.[1]

LOCATION.—Water-stage recorder installed Apr. 20, 1931, 1,900 feet below Blueridge Dam of Tennessee Electric Power Co., 2 miles west of Morganton, and 2½ miles east of Blueridge, Fannin County. Prior to Apr. 1, 1931, a water-stage recorder 800 feet upstream was used. Zero of present gage is 1,538.90 feet and of former gage, 1,539.34 feet above mean sea level.

DRAINAGE AREA.—232 square miles.

RECORDS AVAILABLE.—November, 1898, to March, 1903; April, 1913, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,080 second-feet June 18 (gage height, 5.4 feet); no flow Dec. 6 to Mar. 3, caused by closing of Blueridge Dam.

1913–1931: Maximum discharge, about 13,900 second-feet July 9, 1916 (gage height, 13.0 feet); no flow Dec. 6, 1930, to Mar. 3, 1931.

REMARKS.—Records good except those for estimated periods, which are fair. Considerable regulation caused by operations at Blueridge Dam after Dec. 5. (See table for contents of Blueridge Reservoir.)

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	162	342	0	5	5	5	717	692	1,000
2	179	158	266	0	5	5	5	519	690	1,020
3	175	162	242	0	5	5	489	277	920	1,010
4	168	162	231	e 215	5	5	166	13	972	937
5	168	158	262	382	5	30	36	244	1,000	932
6	158	155	0	374	5	80	235	679	1,000	940
7	152	146	0	374	5	24	90	614	962	967
8	227	142	0	378	5	61	19	655	918	1,020
9	428	142	0	395	5	46	19	655	918	1,010
10	250	155	0	419	5	118	18	669	918	1,020
11	223	162	0	e 213	5	5	23	667	945	1,030
12	197	262	0	5	5	5	202	650	940	572
13	190	382	0	5	5	5	40	846	937	337
14	182	227	0	5	5	5	22	824	972	1,060
15	175	452	0	5	5	5	67	584	945	1,060
16	168	1,120	0	5	5	5	68	862	945	1,060
17	162	980	0	5	5	5	22	835	945	799
18	162	869	0	5	5	5	576	862	972	2.7
19	158	489	0	5	5	5	67	862	960	2.5
20	155	358	0	e 131	5	5	78	862	902	287
21	155	330	0	146	5	5	224	518	952	1,070
22	155	322	0	e 140	5	5	700	512	775	1,070
23	162	306	0	e 84	5	5	777	680	555	1,080
24	179	266	0	e 53	5	5	890	680	1,000	1,110
25	175	258	0	5	5	5	835	427	842	1,110
26	162	254	0	5	5	5	808	254	978	181
27	158	246	0	5	5	5	808	890	1,000	380
28	165	227	0	5	5	5	613	890	992	1,010
29	250	227	0	5	5	5	657	862	604	912
30	215	274	0	5	5	5	660	890	341	918
31	168	-------	0	5	-------	5	-------	890	1,000	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	428	152	187	0.806	0.93
November	1,120	142	318	1.37	1.53
December	342	0	43.3	.187	.22
March	419	0	109	.470	.52
April	5	5	5	.022	.02
May	118	5	15.6	.067	.08
June	890	5	307	1.32	1.47
July	890	13	658	2.84	3.27
August	1,000	341	887	3.82	4.04
September	1,110	2.5	830	3.58	3.99
The year	1,120	0	281	1.21	16.07

e Partly estimated.

NOTE.—No flow Dec. 6 to Mar. 3. Power plant closed down Mar. 12–19, Mar. 25 to May 4, May 11 to June 2; leakage through turbine gates estimated 5 second-feet.

[1] Formerly published as "Toccoa River near Morganton, Ga."

Monthly contents of Blueridge Reservoir near Blueridge, Ga., 1930–31

Date	Gage height in feet	Contents in acre-feet	Gain or loss during month in acre-feet	Date	Gage height in feet	Contents in acre-feet	Gain or loss during month in acre-feet
Sept. 30		0		May 31	1,681.4	170,000	+35,000
Oct. 31		0	0	June 18	1,684.4	180,000	
Nov. 30		0	0	June 30	1,682.6	174,000	+4,000
Dec. 5		0		July 31	1,676.5	156,000	−18,000
Dec. 31	1,596.2	19,000	+19,000	Aug. 31	1,663.8	122,000	−34,000
Jan. 31	1,619.8	43,000	+24,000	Sept. 30	1,649.1	90,000	−32,000
Feb. 28	1,635.8	65,000	+22,000				
Mar. 31	1,647.5	86,000	+21,000	The year			+90.000
Apr. 30	1,669.1	135,000	+49,000				

OCOEE RIVER AT McHARGE, TENN.

LOCATION.—Staff gage at county highway bridge half a mile downstream from McHarge railroad siding, Polk County, 2½ miles downstream from Copperhill, and 16 miles below Blueridge dam and powerhouse. Potato Creek enters half a mile above gage. Zero of gage is 1,430.46 feet above mean sea level.

DRAINAGE AREA.—451 square miles.

RECORDS AVAILABLE.—May, 1917, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,150 second-feet Apr. 4 (gage height, 5.3 feet); minimum discharge, 125 second-feet Dec. 16, 25; minimum gage height, 0.00 foot Sept. 19, 20.

1917–1931: Maximum discharge, 13,100 second-feet Jan. 21, 1922 (gage height, 11.4 feet); minimum discharge, 118 second-feet Sept. 22, 23, 1925; minimum gage height, that of Sept. 19, 20, 1931.

REMARKS.—Records fair. Discharge regulated by Blueridge Dam, which was closed Dec. 5, 1930.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	332	290	550	190	183	350	1,080	550	332	1,080	1,240	1,160
2	314	290	448	180	176	308	845	695	290	695	770	1,160
3	302	279	396	176	176	302	695	515	658	882	1,240	2,160
4	290	284	376	176	176	296	3,740	480	320	212	1,240	1,320
5	290	279	448	550	176	732	1,580	515	370	376	1,500	1,240
6	274	279	695	448	169	732	1,160	658	320	1,160	1,320	1,240
7	268	268	332	344	169	808	920	695	308	1,000	1,320	1,160
8	382	268	235	415	172	770	808	620	308	1,000	1,500	1,240
9	732	268	199	402	402	770	732	585	284	1,240	1,240	1,240
10	480	268	176	363	279	770	695	620	257	1,000	1,410	1,240
11	415	284	180	308	226	770	732	550	240	1,000	1,240	1,240
12	370	515	162	448	217	257	620	515	246	732	1,240	1,160
13	344	695	149	396	262	252	550	448	376	1,160	1,240	320
14	326	448	143	356	920	262	515	448	268	1,320	1,240	1,160
15	326	808	131	290	550	262	480	448	268	808	1,160	1,160
16	308	3,260	125	268	448	246	480	415	268	1,240	1,160	1,240
17	296	1,860	158	268	695	252	448	448	246	1,160	1,160	1,160
18	279	1,770	155	314	515	240	448	415	217	1,320	1,160	184
19	268	960	149	302	448	246	448	402	415	1,240	1,320	184
20	268	732	169	262	408	240	415	448	415	1,240	1,000	146
21	257	658	149	240	376	396	415	480	658	1,680	1,240	1,160
22	257	585	143	235	350	658	1,580	448	920	920	1,240	1,160
23	257	550	140	217	332	332	808	448	1,080	1,080	296	1,160
24	314	480	143	217	326	415	695	376	1,240	1,080	1,160	1,240
25	302	448	128	217	480	314	620	350	1,320	1,240	1,160	1,160
26	274	415	515	208	376	279	658	350	1,160	246	1,410	550
27	268	389	396	208	326	585	550	326	1,080	1,240	1,320	265
28	279	363	290	199	332	1,240	515	314	770	1,240	1,240	1,240
29	415	350	257	194	------	808	515	314	1,080	1,240	1,410	960
30	389	376	217	183	------	620	480	314	1,080	1,240	350	1,000
31	314	------	199	186	------	732	------	350	------	1,240	1,240	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	732	257	329	0.729	0.84
November	3,260	268	624	1.38	1.54
December	695	125	257	.570	.66
January	550	176	283	.627	.72
February	920	169	345	.765	.80
March	1,240	240	492	1.09	1.26
April	3,740	415	808	1.79	2.00
May	695	314	469	1.04	1.20
June	1,320	217	560	1.24	1.38
July	1,680	212	1,040	2.31	2.66
August	1,500	296	1,190	2.64	3.04
September	2,160	146	1,030	2.28	2.54
The year	3,740	125	620	1.37	18.64

OCOEE RIVER AT EMF, TENN.

LOCATION.—Water-stage recorder 700 feet below Tennessee Electric Power Co.'s plant No. 2, known as Caney Creek plant, half a mile upstream from Emf, Polk County, and 1½ miles downstream from mouth of Goforth Creek. Zero of gage is 830.00 feet above mean sea level.

DRAINAGE AREA.—530 square miles.

RECORDS AVAILABLE.—January, 1913, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,650 second-feet Apr. 4 (gage height, 7.35 feet); minimum, 94 second-feet Apr. 4 (gage height, 2.68 feet), caused by regulation.

1913–1931: Maximum discharge, about 21,400 second-feet July 10, 1916 (gage height, 13.7 feet); minimum, 24 second-feet Sept. 14, 1930 (gage height, 2.39 feet), caused by regulation.

REMARKS.—Records good. Gage height based on tail-water gage readings Sept. 18–20, 26–28. Flow regulated by operation of power plants above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	402	375	597	313	267	498	1,570	580	412	1,030	1,140	1,210
2	375	358	604	308	280	464	1,320	873	396	864	713	1,270
3	364	358	522	302	280	450	1,010	609	476	936	1,070	2,010
4	358	358	503	298	275	466	3,390	634	597	306	1,130	1,480
5	392	353	553	768	275	670	2,200	604	440	412	1,310	1,210
6	414	342	1,460	927	260	763	1,630	662	344	1,100	1,330	1,200
7	364	342	658	609	270	794	1,270	902	485	983	1,280	1,170
8	433	342	424	623	280	840	1,040	827	375	940	1,260	1,190
9	774	336	342	638	444	778	871	814	318	957	1,190	1,200
10	584	336	333	554	466	774	794	701	310	959	1,310	1,190
11	460	386	357	496	348	766	682	736	304	890	1,250	1,190
12	442	550	340	638	328	441	751	624	307	856	1,240	1,170
13	408	752	310	664	377	352	670	576	462	965	1,240	472
14	397	548	295	542	1,360	346	624	554	322	1,220	1,150	890
15	386	926	280	460	792	360	590	526	312	989	1,180	1,200
16	380	2,700	290	416	550	341	569	518	342	1,230	1,130	1,200
17	375	2,170	300	407	800	328	564	450	346	1,100	1,150	1,200
18	358	1,690	305	426	764	329	488	516	278	1,230	1,210	480
19	353	1,160	310	418	605	320	560	455	751	1,250	1,350	238
20	358	690	300	414	554	324	516	572	321	1,100	1,190	178
21	348	708	301	386	495	459	524	665	348	1,690	1,310	863
22	348	643	293	358	466	682	2,040	508	768	1,050	1,210	1,210
23	353	576	275	353	441	550	1,140	514	922	992	670	1,210
24	419	555	255	348	427	585	824	450	1,080	987	1,140	1,240
25	414	529	258	331	586	556	671	448	1,180	987	1,160	1,240
26	386	529	628	331	533	423	698	444	1,060	342	1,040	880
27	364	478	801	315	498	780	688	422	969	1,010	1,350	231
28	375	460	532	315	466	2,180	597	410	878	1,300	1,210	964
29	466	448	446	305	-------	1,370	574	390	880	1,170	1,380	980
30	472	478	386	290	-------	878	551	404	921	1,120	528	1,040
31	392	-------	330	290	-------	906	-------	384	-------	1,210	957	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	774	348	410	0.774	0.87
November	2,700	336	683	1.29	1.44
December	1,460	255	438	.826	.95
January	927	290	447	.843	.97
February	1,360	260	482	.909	.95
March	2,180	320	638	1.20	1.38
April	3,390	488	981	1.85	2.06
May	902	384	573	1.08	1.24
June	1,180	278	563	1.06	1.18
July	1,690	306	1,010	1.91	2.20
August	1,380	528	1.150	2.17	2.50
September	2,010	178	1,040	1.96	2.19
The year	3,390	178	702	1.32	17.95

OCOEE RIVER AT PARKSVILLE, TENN.

LOCATION.—Water-stage recorder 1,500 feet downstream from dam and power plant No. 1 of Tennessee Electric Power Co. at Parksville, Polk County. Zero of gage is 717.58 feet above mean sea level.

DRAINAGE AREA.—600 square miles.

RECORDS AVAILABLE.—January, 1911, to September, 1916; March, 1921, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,920 second-feet Apr. 4 (gage height, 9.33 feet); minimum, 59 second-feet Nov. 16, caused by regulation (gage height, 2.78 feet).

1911–1916, 1921–1931: Maximum discharge, 17,000 second-feet July 10, 1916 (gage height, 15.75 feet); minimum mean daily discharge, 6 second-feet Oct. 28, 1925 (gage height, 2.40 feet).

REMARKS.—Records good. Flow regulated by operation of power plants above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	868	494	226	244	134	150	1,250	1,260	386	130	896	586
2	982	418	345	294	172	364	847	446	428	292	490	1,510
3	992	248	206	358	185	484	384	116	347	268	1,520	1,240
4	550	215	322	186	185	832	2,830	1,280	124	663	863	936
5	172	559	552	322	159	264	2,510	1,540	274	348	1,180	1,360
6	322	352	129	213	178	266	2,220	1,320	407	290	1,320	1,540
7	368	167	142	310	157	262	1,580	470	198	402	715	1,050
8	261	628	304	341	156	178	1,470	326	132	1,210	884	1,910
9	196	295	576	442	164	568	994	459	134	930	1,160	1,700
10	199	391	1,170	539	142	727	1,170	168	344	1,010	707	1,160
11	129	412	942	154	173	1,110	511	878	453	923	1,400	690
12	100	236	950	414	176	1,560	400	1,410	256	887	1,420	1,330
13	132	193	308	696	246	1,310	1,090	1,400	306	826	1,070	1,410
14	200	216	180	850	224	622	1,290	666	248	1,480	1,880	383
15	288	146	732	828	180	202	1,470	362	774	1,890	1,660	118
16	195	106	188	756	453	1,860	1,560	286	204	1,390	854	112
17	461	1,520	120	570	213	573	1,200	132	197	1,610	1,140	150
18	506	1,530	120	144	375	330	368	1,410	478	926	1,150	138
19	346	1,220	312	1,100	318	406	1,270	784	360	342	1,310	152
20	232	1,200	152	1,050	395	463	1,380	1,500	578	1,190	1,050	1,340
21	342	1,450	278	1,170	262	256	1,680	1,330	648	1,370	780	802
22	260	1,290	171	964	151	269	516	1,300	518	1,170	1,280	754
23	318	302	167	734	666	240	228	488	453	1,110	626	956
24	258	1,560	144	793	602	442	461	104	392	384	814	339
25	406	1,560	126	190	742	216	421	513	509	777	696	803
26	259	950	162	884	624	322	404	862	398	270	1,300	1,140
27	551	706	188	511	542	210	875	962	330	1,300	721	928
28	640	1,710	197	542	489	202	1,400	928	404	540	1,410	863
29	356	1,080	200	558	-------	169	1,610	936	204	1,090	1,970	443
30	260	802	389	341	-------	771	1,430	451	136	1,320	1,470	733
31	407	-------	210	357	-------	1,450	-------	140	-------	1,660	1,850	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	992	100	373	0.622	0.72
November	1,710	106	732	1.22	1.36
December	1,170	120	329	.548	.63
January	1,170	144	544	.907	1.05
February	742	134	302	.503	.52
March	1,860	150	551	.918	1.06
April	2,830	228	1,160	1.93	2.15
May	1,540	104	782	1.30	1.50
June	774	124	354	.590	.66
July	1,890	130	903	1.50	1.73
August	1,970	490	1,150	1.92	2.21
September	1,910	112	886	1.48	1.65
The year	2,830	100	674	1.12	15.24

CHICKAMAUGA CREEK NEAR CHICKAMAUGA, TENN.

LOCATION.—Water-stage recorder a quarter of a mile above highway bridge on Chattanooga-Cleveland highway, 1½ miles south of Chickamauga, Hamilton County, and 12 miles above confluence with Tennessee River. Prior to Oct. 7, 1930, a staff gage at same site and datum was used.

DRAINAGE AREA.—426 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,810 second-feet Nov. 17 (gage height, 11.25 feet); minimum, 80 second-feet Sept. 10 (gage height, 0.48 foot).

1928–1931: Maximum discharge, 15,400 second-feet Mar. 15, 1929 (gage height, 15.95 feet); minimum, that of Sept. 10, 1931.

REMARKS.—Records good. Discharge estimated Oct. 1–6, Jan. 1, Feb. 8, 9, Sept. 11. No record Nov. 19 to Dec. 31. Possibly slight regulation caused by operation of small gristmills upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	123	400	330	1,090	1,950	382	166	132	141	161
2	155	115	378	316	877	1,630	934	168	141	146	146
3	145	104	367	302	744	1,160	877	164	146	125	139
4	140	123	360	284	668	1,870	574	158	132	128	141
5	135	119	1,790	277	593	3,430	519	154	196	112	141
6	125	115	2,490	266	538	2,150	519	154	199	191	148
7	125	102	1,400	253	500	1,280	725	156	154	556	128
8	139	117	1,240	243	500	1,010	763	148	137	227	115
9	177	104	1,320	246	482	839	612	151	130	174	102
10	199	102	972	386	434	744	612	148	125	280	83
11	166	117	820	334	401	782	500	148	123	199	94
12	146	323	972	298	371	706	460	146	112	174	115
13	134	630	1,160	500	356	612	419	146	112	158	110
14	137	334	877	1,480	334	556	378	137	154	134	98
15	123	687	725	953	330	519	345	128	177	123	110
16	137	2,840	630	706	320	500	320	137	146	121	100
17	132	4,130	593	782	305	460	305	141	134	121	112
18	130	1,950	649	877	288	430	291	141	132	117	119
19	123	-------	801	744	280	423	270	139	151	119	137
20	115	-------	706	649	274	401	253	134	128	144	214
21	125	-------	612	574	256	382	246	132	154	146	110
22	117	-------	574	519	302	1,240	237	125	302	137	119
23	117	-------	519	482	378	1,010	227	132	266	132	110
24	123	-------	482	556	364	630	224	132	168	128	108
25	119	-------	464	1,520	393	538	208	132	128	130	108
26	115	-------	438	1,550	345	538	211	154	182	130	115
27	106	-------	423	972	1,200	500	202	205	687	452	108
28	128	-------	393	896	3,620	441	205	148	378	449	94
29	224	-------	360	-------	4,070	404	191	134	188	270	98
30	199	-------	341	-------	2,490	382	179	130	156	390	96
31	148	-------	334	-------	1,400	-------	168	-------	146	202	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	224	106	141	0.331	0.38
November 1–18	4,130	102	674	1.58	1.06
January	2,490	334	761	1.79	2.06
February	1,550	243	618	1.45	1.51
March	4,070	256	790	1.85	2.13
April	3,430	382	917	2.15	2.40
May	934	168	399	.937	1.08
June	205	125	146	.343	.38
July	687	112	181	.425	.49
August	556	112	195	.458	.53
September	214	83	119	.279	.31

SEQUATCHIE RIVER NEAR WHITWELL, TENN.

LOCATION.—Water-stage recorder at highway bridge 2 miles east of Whitwell, Marion County. Zero of gage is 632.30 feet above mean sea level. Prior to Oct. 1, 1930, a staff and wire gage at same site and datum were used.

DRAINAGE AREA.—389 square miles.

RECORDS AVAILABLE.—December, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,020 second-feet Mar. 29 (gage height, 11.39 feet); minimum discharge, 30 second-feet Nov. 10; minimum gage height (estimated), 0.77 foot Sept. 21.

1920–1931: Maximum discharge, 13,000 second-feet Mar. 24, 1929 (gage height, from high water mark, 16.0 feet); minimum, 19 second-feet Sept. 6–21, 27, 28, 1925 (gage height, 0.73 foot).

REMARKS.—Records good. Discharge estimated June 27 to July 4, Sept. 19–30. Slight regulation caused by operation of two small mills above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	35	74	461	230	798	1,440	626	179	102	123	54
2	50	34	75	407	218	763	1,280	609	173	106	103	56
3	47	32	75	363	201	728	1,130	542	160	90	95	53
4	48	33	77	332	190	677	3,030	493	152	100	109	49
5	43	35	144	410	179	592	2,820	445	149	113	93	54
6	41	32	780	978	171	526	1,880	445	137	96	86	53
7	38	31	978	1,160	163	526	1,360	510	137	92	82	52
8	40	33	887	1,020	157	510	1,090	576	132	93	84	51
9	44	32	592	869	198	510	905	1,640	128	92	78	47
10	55	31	445	816	247	493	780	2,200	125	108	87	42
11	62	32	369	728	271	461	728	1,360	123	203	111	41
12	55	38	313	711	277	445	643	1,090	121	113	84	38
13	51	36	277	763	326	413	576	851	114	95	86	41
14	46	37	241	816	1,130	326	526	711	109	128	84	41
15	43	35	215	711	1,440	313	493	609	106	86	88	38
16	43	559	190	609	1,160	360	461	526	106	84	81	38
17	41	626	179	576	1,020	335	429	461	101	130	75	36
18	37	609	163	542	1,130	316	413	416	96	101	95	36
19	37	461	168	526	1,320	304	403	372	96	96	80	36
20	36	304	190	510	1,200	283	410	336	98	123	96	34
21	35	224	201	493	941	280	423	307	93	225	103	33
22	35	179	224	477	763	316	941	290	90	419	100	40
23	37	142	238	429	660	400	1,280	290	90	230	86	38
24	37	125	235	397	609	493	1,130	260	88	152	72	36
25	35	107	218	366	763	526	941	237	88	139	69	35
26	34	95	388	338	978	526	887	222	88	168	64	34
27	33	88	677	316	941	592	1,020	210	100	136	62	34
28	39	81	816	298	833	2,650	941	199	95	108	62	34
29	38	75	711	280	-------	3,740	798	185	90	96	61	34
30	37	74	609	259	-------	2,780	694	179	98	90	60	34
31	36	-------	510	247	-------	1,880	-------	175	-------	88	56	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	62	33	42.2	0.108	0.12
November	626	31	142	.365	.41
December	978	74	363	.933	1.08
January	1,160	247	555	1.43	1.65
February	1,440	157	633	1.63	1.70
March	3,740	280	770	1.98	2.28
April	3,030	403	995	2.56	2.86
May	2,200	175	560	1.44	1.66
June	179	88	115	.296	.33
July	419	84	129	.332	.38
August	123	56	84.4	.217	.25
September	56	33	41.4	.106	.12
The year	3,740	31	368	.946	12.84

FLINT RIVER NEAR CHASE, ALA.

LOCATION.—Staff gage at Nashville, Chattanooga & St. Louis Railway bridge 5 miles northeast of Chase, Madison County. Zero of gage is 639.87 feet above mean sea level.

DRAINAGE AREA.—353 square miles.

RECORDS AVAILABLE.—May, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,120 second-feet Apr. 4 (gage height, 6.2 feet); minimum, 44 second-feet Sept. 20, 27, 30 (gage height, 0.96 foot).

1930–31: Maximum and minimum discharges, those given above.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	105	105	181	140	858	2,160	216	105	93	95	67
2	97	97	110	181	146	508	1,280	245	99	83	93	72
3	85	97	125	157	143	445	820	228	97	85	87	78
4	78	101	105	151	135	388	4,010	194	95	81	108	110
5	93	97	115	258	130	345	1,800	181	93	101	85	79
6	87	93	216	415	130	300	932	188	91	103	122	60
7	85	97	216	290	135	324	675	178	91	87	132	69
8	113	93	191	267	132	782	572	166	89	78	99	79
9	105	93	157	290	157	445	475	445	87	93	91	70
10	115	110	157	240	216	355	415	388	89	78	93	65
11	105	122	157	216	188	300	388	245	89	72	91	76
12	105	132	135	258	169	276	360	188	87	74	78	69
13	93	140	140	360	198	267	304	172	101	79	83	65
14	99	127	135	281	820	236	286	163	103	76	74	65
15	97	157	135	240	415	236	267	160	101	360	81	72
16	105	415	135	212	324	240	249	151	91	132	76	67
17	91	281	143	216	360	219	236	140	89	101	78	69
18	93	208	130	202	415	216	228	135	87	91	101	62
19	95	160	157	205	345	198	219	132	87	83	83	60
20	97	157	194	212	304	188	232	143	93	81	79	47
21	105	157	172	212	286	188	223	140	95	89	89	70
22	95	157	172	184	258	188	605	135	115	1,540	74	64
23	101	127	160	157	236	228	475	132	81	202	76	62
24	105	120	151	169	253	236	319	132	81	154	76	60
25	99	130	157	163	1,540	208	267	125	99	125	70	53
26	97	127	175	163	895	208	262	117	76	108	76	60
27	93	127	304	157	605	350	295	113	79	130	81	58
28	103	110	219	157	475	2,760	245	113	78	105	95	74
29	110	105	219	151	------	1,360	216	113	79	101	78	60
30	108	113	194	146	------	745	198	105	97	87	72	58
31	105	------	175	146	------	605	------	99	------	95	76	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	115	78	98.5	0.279	0.32
November	415	93	138	.391	.44
December	304	105	163	.462	.53
January	415	146	214	.606	.70
February	1,540	130	341	.966	1.01
March	2,760	188	458	1.30	1.50
April	4,010	198	634	1.80	2.01
May	445	99	174	.493	.57
June	115	76	91.5	.259	.29
July	1,540	72	154	.436	.50
August	132	70	86.8	.246	.28
September	110	47	67.3	.191	.21
The year	4,010	47	217	.615	8.36

HUNTSVILLE SPRING AT HUNTSVILLE, ALA.

LOCATION.—Water-stage recorder just above weir at city pumping plant in Huntsville, Madison County.

RECORDS AVAILABLE.—November, 1928, to September, 1931.

EXTREMES.—Maximum mean daily discharge during year, 29.9 second-feet Apr. 6–10 (gage height, 2.49 feet); minimum, 5.4 second-feet Nov. 12, 13, Sept. 2–5, 11–19 (gage height, 2.16 feet).

1928–1931: Maximum mean daily discharge, 45 second-feet Mar. 23, 24, 1929 (gage height, 2.62 feet); minimum, that given above.

REMARKS.—Records fair. Discharge estimated Feb. 20–23, Sept. 19–22. Water supply for city of Huntsville diverted just above gage; this flow is included in discharge tables. Some diurnal fluctuation caused by operation of pumping plant.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	7.9	6.9	9.1	13.8	22.6	25.3	21.7	15.3	11.0	9.7	5.9
2	9.1	7.9	6.4	9.1	13.8	22.6	26.2	21.7	15.3	11.0	9.1	5.4
3	9.1	7.9	6.4	9.7	13.8	22.6	27.1	21.7	15.3	11.0	8.5	5.4
4	9.1	7.4	6.4	9.7	14.5	23.5	28.0	20.9	15.3	11.7	7.9	5.4
5	9.7	7.4	6.9	10.3	13.8	23.5	28.9	20.9	15.3	11.7	7.4	5.4
6	9.1	7.4	7.9	11.0	13.8	23.5	29.9	20.1	15.3	11.0	6.9	5.9
7	9.1	6.9	8.5	11.0	13.1	24.4	29.9	20.1	15.3	11.0	6.9	5.9
8	9.1	6.9	8.5	11.7	13.1	23.5	29.9	20.1	14.5	11.0	7.4	5.9
9	8.5	7.4	8.5	11.7	13.1	22.6	29.9	20.1	14.5	10.3	7.9	5.9
10	8.5	6.9	8.5	12.4	13.1	22.6	29.9	19.3	14.5	10.3	7.9	5.9
11	8.5	5.9	8.5	12.4	13.1	22.6	28.9	20.1	13.8	10.3	7.9	5.4
12	8.5	5.4	8.5	13.1	13.1	22.6	28.9	20.1	13.8	10.3	7.9	5.4
13	8.5	5.4	8.5	13.1	13.1	22.6	28.0	20.1	13.8	10.3	7.9	5.4
14	8.5	5.9	9.1	13.1	14.5	22.6	26.2	20.1	13.8	11.0	7.9	5.4
15	8.5	6.4	8.5	13.1	16.1	22.6	26.2	20.1	13.1	11.0	6.9	5.4
16	7.9	7.4	8.5	13.1	16.9	22.6	25.3	19.3	13.1	10.3	6.4	5.4
17	7.9	8.5	7.4	13.8	16.9	21.7	25.3	19.3	13.1	10.3	6.4	5.4
18	8.5	7.9	6.9	13.8	16.9	21.7	25.3	18.5	13.1	9.7	6.4	5.4
19	8.5	7.9	6.9	13.1	17.7	21.7	25.3	18.5	13.1	9.7	6.4	5.4
20	8.5	7.9	7.9	13.1	18.5	21.7	24.4	18.5	12.4	9.7	6.4	5.9
21	7.9	7.4	8.5	13.1	20.1	21.7	24.4	18.5	11.7	9.7	6.4	6.4
22	8.5	7.4	8.5	13.1	20.1	20.9	23.5	18.5	11.7	9.7	6.4	6.9
23	8.5	7.4	9.1	13.8	20.9	20.9	23.5	18.5	11.7	9.7	6.4	7.4
24	8.5	7.4	8.5	13.8	20.9	20.9	22.6	17.7	11.7	9.7	6.4	7.4
25	8.5	7.4	9.1	13.8	21.7	20.1	22.6	17.7	11.0	9.7	6.4	7.4
26	8.5	7.4	8.5	13.1	22.6	20.1	22.6	16.9	11.0	10.3	5.9	6.9
27	7.9	6.9	8.5	13.1	21.7	20.9	22.6	16.9	11.0	10.3	5.9	6.4
28	8.5	6.9	9.1	13.1	22.6	22.6	21.7	16.9	11.0	10.3	5.9	5.9
29	7.9	6.9	9.1	13.1	-------	23.5	21.7	16.1	11.0	11.0	5.9	5.9
30	7.9	6.9	9.1	13.8	-------	23.5	21.7	16.1	11.0	10.3	5.9	5.9
31	7.9	-------	9.1	13.8	-------	24.4	-------	16.1	-------	9.7	5.9	-------

Month	Maximum	Minimum	Mean	Month	Maximum	Minimum	Mean
October	9.7	7.9	8.52	May	21.7	16.1	19.1
November	8.5	5.4	7.15	June	15.3	11.0	13.2
December	9.1	6.4	8.15	July	11.7	9.7	10.4
January	13.8	9.1	12.4	August	9.7	5.9	7.02
February	22.6	13.1	16.5	September	7.4	5.4	5.93
March	24.4	20.1	22.4				
April	29.9	21.7	25.9	The year	29.9	5.4	13.0

ELK RIVER AT ESTILL SPRINGS, TENN.

LOCATION.—Water-stage recorder at highway bridge 400 feet downstream from Nashville, Chattanooga & St. Louis Railway bridge, 800 feet below Estill Springs hydroelectric plant, and three-quarters of a mile southeast of Estill Springs, Franklin County. Zero of gage is 850.25 feet above mean sea level.

DRAINAGE AREA.—263 square miles.

RECORDS AVAILABLE.—December, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,360 second-feet Mar. 29 (gage height, 4.06 feet); minimum, 47 second-feet several days during January and September (gage height, 1.14 feet).

1920–1931: Maximum discharge, about 19,800 second-feet Mar. 23, 1929 (gage height, 20.2 feet); minimum, 10 second-feet Oct. 9, 10, 1925.

REMARKS.—Records good except those for estimated periods, which are fair. Large diurnal fluctuation during low water, caused by operation of Estill Springs hydroelectric plant.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	50	57	166	109	322	610	301	88	55	54	54
2	50	e 52	57	164	116	324	622	307	84	54	90	54
3	50	e 50	59	e 172	104	300	556	328	72	54	70	54
4	50	52	59	116	102	294	790	260	79	55	55	54
5	50	52	87	158	100	240	1,230	234	80	55	54	54
6	48	52	62	253	100	238	860	238	70	92	54	52
7	48	54	198	504	104	198	626	218	79	74	54	50
8	66	50	230	358	93	247	520	232	84	55	54	48
9	54	52	136	e 330	106	e 260	410	248	86	55	54	48
10	54	52	114	334	106	e 245	384	454	86	55	52	47
11	52	52	104	269	178	e 235	346	439	91	57	52	47
12	50	52	78	302	144	e 220	311	381	91	55	52	e 47
13	50	52	86	306	202	e 205	298	300	75	55	52	e 47
14	50	50	70	327	492	e 192	288	228	63	54	55	e 88
15	50	58	90	258	997	e 173	264	221	61	50	55	55
16	50	59	86	230	690	e 199	236	186	59	48	54	54
17	50	60	66	182	536	e 197	236	158	59	48	52	54
18	e 50	124	78	168	573	176	211	154	57	50	50	54
19	54	55	92	182	e 640	168	198	146	57	50	50	54
20	54	e 55	e 118	198	e 541	162	e 208	135	54	50	54	54
21	54	e 55	e 116	198	e 449	174	228	112	54	52	146	54
22	50	e 65	e 112	182	e 350	154	316	116	59	144	57	54
23	55	54	e 108	162	e 372	202	482	119	61	55	57	54
24	54	54	e 108	184	e 382	196	380	114	57	55	57	54
25	e 54	62	e 160	136	347	215	360	111	57	57	57	54
26	57	55	e 270	133	448	232	340	104	55	58	55	54
27	57	54	e 342	144	398	295	564	112	57	63	55	52
28	57	e 54	384	120	360	658	557	90	57	206	55	50
29	55	e 50	294	125	------	1,350	419	98	55	54	54	48
30	55	57	236	117	------	1,050	348	89	57	76	54	47
31	54	------	200	116	------	683	------	92	------	55	54	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	66	48	53	0.202	0.23
November	124	50	56	.213	.24
December	384	57	137	.521	.60
January	504	116	213	.810	.93
February	997	93	326	1.24	1.29
March	1,350	154	316	1.20	1.38
April	1,230	198	439	1.67	1.86
May	454	89	204	.780	.90
June	91	54	68	.259	.29
July	206	48	64	.243	.28
August	146	50	59	.224	.26
September	88	47	53	.202	.23
The year	1,350	47	165	.627	8.49

e Estimated or partly estimated.

ELK RIVER NEAR FAYETTEVILLE, TENN.

LOCATION.—Water-stage recorder at dam and power house of Tennessee Electric Power Co., 2 miles southwest of Fayetteville, Lincoln County. Zero of gage is 637.67 feet above mean sea level.

DRAINAGE AREA.—857 square miles.

RECORDS AVAILABLE.—October, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 5,400 second-feet Mar. 28 (gage height, 10.3 feet); minimum, 50 second-feet several days during year, caused by regulation (gage height, 0.80 foot).

1925–1931: Maximum discharge, about 45,600 second-feet Mar. 23, 1929 (gage height, from high-water mark, 28.2 feet); minimum, 50 second-feet several days during 1930 and 1931 (gage height, 0.80 foot).

REMARKS.—Records good. Considerable diurnal fluctuation caused by operation of power plant just above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	182	192	231	504	323	2,030	2,570	776	254	178	171	146
2	196	186	222	434	299	1,480	2,180	598	250	180	180	140
3	180	204	208	394	303	1,280	1,920	560	245	248	172	200
4	179	186	198	394	312	1,070	2,580	742	230	266	186	170
5	180	197	346	682	259	924	3,220	618	219	315	176	141
6	186	190	722	920	309	756	2,680	680	219	254	219	132
7	190	187	503	790	265	1,000	2,040	638	198	228	235	123
8	242	190	406	1,210	271	986	1,640	630	209	252	202	104
9	292	186	436	1,060	396	912	1,400	870	241	210	192	78
10	249	206	394	896	419	874	1,240	1,030	202	172	171	128
11	217	230	334	818	354	741	1,110	965	202	176	162	138
12	194	236	320	985	349	688	1,060	922	207	158	156	120
13	196	220	290	984	924	621	860	772	224	155	144	136
14	186	224	261	847	1,660	600	812	661	224	188	142	185
15	190	397	265	811	1,420	603	758	539	232	216	152	200
16	190	658	258	700	1,690	538	738	603	192	220	148	204
17	283	562	264	647	1,720	524	676	497	212	182	402	136
18	249	410	288	583	1,540	513	651	473	193	182	416	134
19	184	304	276	578	1,380	504	613	430	187	218	292	136
20	204	314	390	540	1,330	467	608	432	192	170	291	142
21	194	240	372	519	1,170	461	607	384	186	452	302	137
22	202	262	342	514	1,010	498	868	380	193	734	300	128
23	194	220	334	473	822	472	1,040	342	211	348	366	122
24	290	210	326	462	1,300	474	1,010	331	184	314	180	128
25	216	184	291	424	2,330	506	909	323	176	226	188	124
26	210	184	902	375	1,730	501	913	304	158	203	218	143
27	200	160	784	400	1,440	1,280	892	304	166	203	154	126
28	212	180	693	367	1,950	4,210	1,000	274	172	215	158	116
29	230	224	866	355	------	3,150	944	292	176	214	184	114
30	224	205	703	330	------	2,870	808	249	236	258	172	114
31	204	------	574	330	------	2,420	------	256	------	183	152	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	292	179	211	0.246	0.28
November	658	160	252	.294	.33
December	902	198	413	.482	.56
January	1,210	330	623	.727	.84
February	2,330	259	974	1.14	1.19
March	4,210	461	1,100	1.28	1.48
April	3,220	607	1,280	1.49	1.66
May	1,030	249	544	.635	.73
June	254	158	206	.240	.27
July	734	155	243	.284	.33
August	416	142	212	.247	.28
September	204	78	138	.161	.18
The year	4,210	78	513	.599	8.13

ELK RIVER NEAR ELKMONT, ALA.

LOCATION.—Chain gage at highway bridge 2½ miles above mouth of Shoal Creek, 4 miles below Tennessee State line, and 5 miles northwest of Elkmont, Limestone County. Zero of gage is 549.45 feet above mean sea level.

DRAINAGE AREA.—1,700 square miles.

RECORDS AVAILABLE.—July, 1904, to February, 1908; January, 1919, to September, 1931.

EXTREMES.—Maximum discharge during year, 14,600 second-feet Mar. 29 (gage height, 12.6 feet); minimum, 85 second-feet Sept. 11 (gage height, 0.98 foot). 1904–1908; 1919–1931: Maximum discharge, about 51,800 second-feet Mar. 24, 1929 (gage height, from high-water mark, 30.5 feet); minimum discharge, 85 second-feet Sept. 18–20, 1925, Sept. 11, 1931; minimum gage height, that of Sept. 11, 1931.

REMARKS.—Records good. Some regulation at low stages caused by operations at hydroelectric plant at Fayetteville, Tenn.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	246	360	1,180	650	8,810	7,160	1,400	a450	360	254	214
2	254	214	338	920	650	5,790	6,200	1,580	a435	306	238	214
3	238	297	382	872	612	4,420	4,970	1,400	a420	262	230	214
4	222	222	382	825	612	3,600	4,010	1,340	405	262	176	190
5	222	238	405	1,340	575	2,780	5 250	3,330	405	920	222	198
6	214	254	1,710	2,780	575	2,510	4,840	1,840	360	510	246	206
7	198	238	2,100	2,510	542	3,330	4,010	1,640	315	455	482	190
8	360	222	1,280	2,230	542	4,150	3,050	1,460	315	360	510	169
9	650	270	970	2,780	1,020	2,780	2,510	1,340	315	315	360	148
10	455	a 325	825	a 2,380	1,340	2,640	2,230	2,510	360	360	297	127
11	405	382	735	1,970	1,020	2,230	2,100	2,100	338	262	183	85
12	288	510	650	1,840	920	2,230	1,640	1,710	315	246	230	155
13	297	455	575	2,370	1,020	1,710	1,520	1,520	315	206	222	134
14	254	482	542	2,230	5,250	1,640	1,400	1,400	315	183	222	183
15	254	2,920	542	1,970	3,880	1,580	1,340	1,120	338	262	230	338
16	270	2,640	510	1,400	3,190	1,460	1,280	1,020	a 350	338	222	230
17	297	2,370	482	1,400	4,290	1,230	1,180	970	a 365	274	230	338
18	306	1,340	482	1,340	4,560	1,180	1,180	a 935	a 380	292	1,280	246
19	297	872	542	1,340	3,190	1,180	1,120	a 905	a 390	250	780	120
20	338	692	575	1,180	3,460	1,070	1,120	872	405	274	542	155
21	315	542	692	1,120	3,050	1,070	1,070	735	310	186	510	124
22	279	510	482	1,020	2,510	1,120	2,100	650	360	1,580	405	169
23	288	482	612	970	1,970	1,070	2,100	612	382	1,070	a 420	134
24	338	455	575	920	2,230	1,020	1,840	405	382	542	430	134
25	382	405	542	920	10,700	970	1,710	510	382	482	254	127
26	338	360	872	825	7,440	920	1,640	510	292	360	222	120
27	279	360	a 1,150	825	5,250	1,840	1,840	510	266	302	230	127
28	254	338	a 1,430	780	4,290	14,000	1,580	482	274	292	262	127
29	279	360	1,710	780	-------	14,600	1,640	482	274	274	230	141
30	270	382	1,640	692	-------	6,750	1,520	482	250	262	198	169
31	246	-------	1,280	a 670	-------	5,930	-------	a 465	-------	360	254	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	650	198	302	0.178	0.21
November	2,920	214	646	.380	.42
December	2,100	338	818	.481	.55
January	2,780	670	1,430	.841	.97
February	10,700	542	2,690	1.58	1.64
March	14,600	920	3,410	2.00	2.31
April	7,160	1,070	2,500	1.47	1.64
May	3,330	405	1,170	.688	.79
June	450	250	349	.205	.23
July	1,580	183	400	.235	.27
August	1,280	176	341	.201	.23
September	338	85	175	.103	.12
The year	14,600	85	1,180	.694	9.38

a Estimated.

ELK RIVER NEAR ROGERSVILLE, ALA.

LOCATION.—Staff gage at highway bridge on road between Huntsville and Florence, 4 miles east of Rogersville, Lauderdale County. Zero of gage is 518.02 feet above mean sea level.

DRAINAGE AREA.—2,100 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 19,000 second-feet Mar. 28 (gage height, 10.2 feet); minimum, 110 second-feet Sept. 12 (gage height, 0.5 foot).

1927–1931: Maximum discharge, about 61,600 second-feet Mar. 25, 1929 (gage height, from high-water mark, 22.4 feet); minimum, that of Sept. 12, 1931.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	360	360	580	1,500	850	9,920	8,440	1,710	500	300	392	300
2	360	330	620	1,300	850	8,020	7,810	1,780	500	462	300	300
3	360	300	580	1,180	750	5,790	6,190	1,860	500	392	300	245
4	300	330	580	1,060	750	4,600	5,190	1,640	500	705	300	245
5	300	360	705	1,360	750	3,670	5,590	2,320	500	1,180	300	195
6	300	360	1,940	3,140	750	2,970	5,990	2,480	500	800	1,430	220
7	300	360	2,480	3,140	705	3,850	5,190	1,940	500	540	1,000	245
8	540	360	1,710	2,800	660	6,190	4,600	1,640	500	500	800	245
9	950	360	1,360	3,140	1,000	4,410	4,220	2,010	425	462	660	245
10	660	425	1,120	2,800	1,500	3,670	3,850	2,970	425	425	500	220
11	500	580	1,060	2,480	1,500	2,970	2,800	2,480	425	425	425	172
12	425	705	950	2,480	1,300	2,480	2,160	2,160	360	360	360	110
13	360	750	850	3,140	1,430	2,160	1,940	1,860	360	300	360	150
14	360	750	800	2,800	4,600	2,160	1,780	1,500	360	300	300	150
15	300	2,970	750	2,480	4,990	2,010	1,640	1,360	360	425	300	220
16	300	3,140	750	2,160	4,030	1,940	1,570	1,300	500	500	300	300
17	330	2,800	750	1,940	4,990	1,710	1,570	1,300	500	462	300	245
18	425	1,860	660	1,780	5,190	1,640	1,500	1,180	425	360	300	330
19	462	1,180	750	1,710	4,790	1,570	1,430	1,180	360	360	1,360	272
20	360	900	800	1,640	4,220	1,570	1,300	1,180	360	500	850	195
21	360	750	850	1,500	3,490	1,500	1,300	1,120	360	540	850	172
22	300	750	850	1,360	3,140	1,430	1,860	1,000	360	850	620	150
23	300	750	800	1,300	2,800	1,430	2,480	850	360	1,940	500	150
24	300	705	750	1,300	3,140	1,360	2,160	800	462	1,000	462	150
25	360	660	750	1,240	11,300	1,300	2,010	750	462	660	425	150
26	425	580	1,240	1,180	10,800	1,300	2,010	660	392	540	300	150
27	360	500	3,140	1,060	5,990	1,640	2,010	660	360	462	300	150
28	360	462	2,480	1,060	5,790	17,300	1,780	660	360	360	300	150
29	360	425	2,160	950	-------	15,700	1,710	660	360	360	300	150
30	360	500	2,010	950	-------	8,860	1,710	620	360	360	300	150
31	360	-------	1,780	900	-------	7,390	-------	580	-------	392	300	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	950	300	390	0.186	0.21
November	3,140	300	842	.401	.45
December	3,140	580	1,180	.562	.65
January	3,140	900	1,830	.871	1.00
February	11,300	660	3,290	1.57	1.64
March	17,300	1,300	4,270	2.03	2.34
April	8,440	1,300	3,130	1.49	1.66
May	2,970	580	1,430	.681	.79
June	500	360	423	.201	.22
July	1,940	300	556	.265	.31
August	1,430	300	500	.238	.27
September	330	110	204	.097	.11
The year	17,300	110	1,490	.710	9.65

SHOAL CREEK AT IRON CITY, TENN.

LOCATION.—Staff gage 600 feet above Louisville & Nashville Railroad bridge a quarter of a mile east of Iron City, Lawrence County, a third of a mile below mouth of Holly Creek. Prior to Feb. 25, 1931, a staff gage 600 feet downstream was used. Zero of present gage is 534.28 feet and of previous gage is 532.74 feet above mean sea level.

DRAINAGE AREA.—355 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,120 second-feet Feb. 25 (gage height, 10.26 feet); minimum, 57 second-feet Sept. 30 (gage height, 0.02 foot).

1925–1931: Maximum discharge, about 21,800 second-feet Mar. 13, 1927 (gage height, 23.1 feet, original gage datum); minimum, 39 second-feet Sept. 22, 1925 (gage height, 0.60 foot, original gage datum).

REMARKS.—Records good. Discharge estimated June 12. Some regulation caused by operation of power plant at Lawrenceburg.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	126	156	298	204	2,260	935	405	163	96	93	88
2	108	126	156	280	195	1,550	1,110	485	166	166	90	86
3	100	135	165	228	174	1,050	1,050	445	179	205	88	88
4	108	126	165	210	156	880	935	405	187	179	87	80
5	115	144	156	395	156	770	720	365	190	205	93	78
6	120	126	435	570	156	670	620	365	185	205	1,170	75
7	126	126	620	525	156	1,760	552	365	166	182	880	71
8	458	115	355	458	150	1,960	530	385	138	176	670	73
9	315	126	245	415	395	1,290	465	385	150	171	530	78
10	217	238	186	355	355	1,170	385	670	126	163	272	87
11	174	355	186	415	315	1,170	598	720	144	153	255	90
12	144	315	186	435	315	1,170	385	598	138	117	220	74
13	126	280	186	435	525	1,170	325	465	131	102	176	70
14	126	298	150	435	502	1,110	290	445	131	96	136	78
15	126	435	156	415	525	770	272	425	107	102	129	74
16	144	435	156	415	548	575	272	425	598	100	124	73
17	150	315	150	415	770	445	272	385	205	126	113	74
18	150	262	165	355	720	385	255	325	138	120	109	71
19	174	245	156	315	670	385	255	272	131	138	109	73
20	150	238	156	355	670	385	255	325	129	160	106	71
21	156	238	156	315	595	385	290	290	109	205	102	73
22	126	210	156	315	570	365	825	272	143	238	98	68
23	126	180	144	315	480	325	620	272	163	238	94	70
24	150	186	144	315	930	325	598	255	166	272	92	70
25	144	186	156	280	6,690	325	575	185	179	255	92	70
26	120	180	280	280	2,560	325	575	163	174	205	90	66
27	126	186	570	280	1,480	575	552	190	160	138	90	73
28	144	174	315	245	1,170	3,590	485	238	111	129	90	67
29	144	180	315	238	-------	3,030	465	238	96	124	87	64
30	144	165	315	217	-------	1,420	425	238	90	107	88	63
31	126	-------	315	210	-------	1,110	-------	179	-------	94	88	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	458	100	153	0.431	0.50
November	435	115	215	.606	.68
December	620	144	231	.651	.75
January	570	210	346	.975	1.12
February	6,690	150	790	2.23	2.32
March	3,590	325	1,050	2.96	3.41
April	1,110	255	530	1.49	1.66
May	720	163	361	1.02	1.18
June	598	90	163	.459	.51
July	272	94	160	.451	.52
August	1,170	87	208	.586	.68
September	90	63	74.5	.210	.23
The year	6,690	63	355	1.00	13.56

BEAR CREEK AT BISHOP, ALA.

LOCATION.—Staff gage in T. 4 S., R. 15 W., at highway bridge half a mile below Little Bear Creek and three-quarters of a mile southwest of Bishop. Zero of gage is 414.85 feet above mean sea level.

DRAINAGE AREA.—621 square miles.

RECORDS AVAILABLE.—August, 1926, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,100 second-feet Apr. 1 (gage height, 17.4 feet); minimum, 31 second-feet Sept. 30 (gage height, 5.32 feet).

1926–1931: Maximum discharge, about 21,400 second-feet Dec. 26, 1926 (gage height, from high-water mark, 27.0 feet); minimum, 28 second-feet Sept. 21, 1927 (gage height, 5.2 feet).

REMARKS.—Records fair. Discharge estimated Oct. 28–31.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	80	328	552	352	2,780	5,500	580	256	268	232	80
2	85	96	376	496	352	2,200	4,600	580	232	496	160	68
3	75	102	424	448	328	1,720	4,600	608	232	304	152	54
4	72	96	352	400	328	1,440	3,380	668	208	220	122	61
5	75	90	352	1,320	304	1,210	2,540	608	188	160	108	66
6	66	85	552	1,680	292	1,030	2,720	1,280	178	129	304	66
7	58	96	796	1,140	292	1,210	2,150	1,480	168	115	160	54
8	668	96	732	1,520	292	4,280	1,360	1,400	152	102	828	47
9	860	102	608	1,480	352	3,040	1,210	2,970	144	102	1,170	46
10	1,240	178	496	1,140	608	2,540	1,060	3,310	136	90	796	44
11	496	292	448	992	668	1,600	956	1,950	136	71	448	41
12	268	376	424	1,140	580	1,210	828	1,320	129	75	292	38
13	198	352	424	1,360	552	1,060	796	992	956	61	220	41
14	168	352	352	1,210	2,050	924	764	860	198	61	168	122
15	136	1,140	352	1,030	1,680	828	668	732	178	80	136	152
16	129	992	328	860	1,820	796	608	608	144	71	122	122
17	129	1,600	328	796	1,520	700	580	552	178	61	122	85
18	136	1,360	304	732	1,440	636	552	496	152	122	108	56
19	136	828	328	700	1,240	608	608	496	136	136	102	54
20	102	524	352	668	1,060	552	668	552	122	220	122	50
21	96	424	352	668	924	496	552	608	115	448	220	44
22	90	400	376	552	828	552	1,280	524	108	352	129	41
23	96	424	352	524	764	552	1,680	472	102	328	96	40
24	102	376	304	496	1,030	828	1,680	424	232	3,380	122	38
25	90	472	292	472	4,440	524	1,210	376	178	1,440	108	40
26	96	376	796	448	3,380	472	924	352	400	796	96	38
27	90	328	1,240	424	2,840	668	860	328	232	448	80	35
28	88	280	1,210	424	1,770	3,100	732	304	160	400	68	34
29	86	268	992	400	-------	3,960	636	280	424	292	122	32
30	84	268	796	376	-------	3,960	580	256	232	232	66	31
31	82	-------	668	376	-------	3,880	-------	232	-------	232	61	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,240	58	200	0.322	0.37
November	1,600	80	415	.668	.75
December	1,240	292	517	.833	.96
January	1,680	376	801	1.29	1.49
February	4,440	292	1,150	1.85	1.93
March	4,280	472	1,590	2.56	2.95
April	5,500	552	1,540	2.48	2.77
May	3,310	232	845	1.36	1.57
June	424	102	214	.345	.38
July	3,380	61	364	.586	.68
August	1,170	61	227	.366	.42
September	152	31	57.3	.092	.10
The year	5,500	31	657	1.06	14.37

HORSE CREEK NEAR SAVANNAH, TENN.

LOCATION.—Staff gage 700 feet above highway bridge, 1½ miles east of Savannah, Hardin County, and 4½ miles above confluence with Tennessee River.
DRAINAGE AREA.—146 square miles.
RECORDS AVAILABLE.—August, 1929, to September, 1931.
EXTREMES.—Maximum discharge during year, 1,000 second-feet Aug. 8 (gage height, 4.86 feet); minimum, 23 second-feet Sept. 27 (gage height, 0.58 foot).
1929–1931: Maximum discharge, 3,050 second-feet Mar. 7, 1930 (gage height, 9.94 feet); minimum, that of Sept. 27, 1931.
REMARKS.—Records good. Discharge estimated Mar. 12, June 18, Sept. 19.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	42	67	79	59	452	860	98	46	26	28	36
2	39	46	60	74	57	306	507	110	42	33	26	34
3	39	46	58	72	57	285	328	98	41	34	26	36
4	39	48	56	69	57	202	228	85	39	31	31	33
5	37	48	69	110	55	169	210	85	39	31	34	33
6	37	48	85	117	55	146	177	124	37	33	306	31
7	37	46	79	104	53	246	154	124	34	33	375	30
8	52	46	72	138	53	228	138	117	34	31	1,000	30
9	58	46	69	124	79	185	124	117	34	30	146	29
10	52	85	67	110	73	161	117	110	34	28	91	28
11	46	117	67	104	66	138	110	98	33	28	56	28
12	42	98	67	124	53	131	98	91	33	26	56	29
13	42	85	63	110	146	117	98	91	34	25	50	29
14	42	91	60	104	219	117	85	85	34	26	44	29
15	42	177	60	98	169	124	85	74	33	28	41	28
16	42	131	67	98	138	110	85	72	41	29	42	28
17	42	104	69	91	154	98	79	67	41	28	65	26
18	42	91	69	91	138	98	85	63	37	29	44	25
19	42	79	72	85	124	91	78	60	33	30	50	25
20	42	72	69	79	124	91	91	72	41	56	48	25
21	42	79	67	78	110	85	117	69	33	41	42	24
22	42	74	63	78	104	98	202	60	31	37	39	24
23	46	67	63	73	98	85	154	56	41	161	37	24
24	46	63	60	71	507	85	131	54	34	60	36	24
25	46	60	58	68	720	79	124	52	31	50	34	24
26	46	60	138	66	375	75	146	50	31	37	41	24
27	46	56	117	66	265	426	124	48	30	33	46	23
28	52	56	110	64	426	825	110	46	29	31	98	24
29	46	52	104	64	-------	351	104	44	29	30	60	24
30	46	60	91	62	-------	265	98	44	28	29	42	24
31	46	-------	85	62	-------	507	-------	42	-------	28	37	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	58	37	43.8	0.300	0.35
November	177	42	72.4	.496	.55
December	138	56	74.2	.508	.59
January	138	62	88.2	.604	.70
February	720	53	162	1.11	1.16
March	825	75	206	1.41	1.63
April	860	78	168	1.15	1.28
May	124	42	77.6	.532	.61
June	46	28	35.2	.241	.27
July	161	25	37.2	.255	.29
August	1,000	26	99.1	.679	.78
September	36	23	27.7	.190	.21
The year	1,000	23	90.5	.620	8.42

DUCK RIVER AT NORMANDY, TENN.

LOCATION.—Staff gage at county highway bridge half a mile north of Normandy, Bedford County, and 2 miles above Nashville, Chattanooga & St. Louis Railway bridge. Zero of gage is 785.47 feet above mean sea level.

DRAINAGE AREA.—214 square miles.

RECORDS AVAILABLE.—December, 1920, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 1,120 second-feet Mar. 28 (gage height, 4.40 feet); minimum, 40 second-feet Sept. 30 (gage height, 0.72 foot).

1920–1931: Maximum discharge, about 20,400 second-feet Mar. 23, 1929 (gage height, 18.1 feet); minimum discharge, that of Sept. 30, 1931; minimum gage height, 0.60 foot July 30 to Oct. 3, Oct. 5–7, 1925.

REMARKS.—Records fair except those for November, December, January, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	63	67	85	a 80	420	500	245	72	54	50	55
2	63	a 63	67	79	77	420	500	220	67	54	a 70	55
3	63	63	65	75	72	370	420	a 200	62	54	46	52
4	63	65	65	a 82	67	282	370	172	60	54	46	48
5	a 62	63	79	90	67	232	a 350	150	60	a 54	48	46
6	60	65	132	103	67	220	270	141	58	54	52	45
7	58	63	a 150	109	67	229	245	128	a 58	55	54	46
8	109	63	90	120	a 73	a 220	220	141	56	54	54	46
9	93	a 63	79	111	79	232	196	245	56	54	a 52	46
10	79	63	77	111	86	220	172	a 300	56	54	52	44
11	67	67	77	a 110	82	184	150	270	56	54	50	44
12	a 65	67	74	109	79	172	a 150	184	56	a 54	46	44
13	63	69	74	118	107	161	150	150	56	54	46	a 44
14	63	77	a 74	118	196	150	150	128	a 56	54	46	44
15	63	79	74	109	a 400	a 140	146	124	56	54	46	44
16	60	a 79	77	101	220	132	132	124	56	56	a 46	44
17	74	93	79	101	196	128	128	a 110	54	54	46	46
18	67	86	79	a 93	245	128	120	101	54	54	56	44
19	a 65	79	79	93	282	124	a 112	93	54	a 54	67	44
20	63	73	79	93	270	120	106	86	54	54	56	a 44
21	63	67	a 79	93	220	113	117	79	a 54	54	63	44
22	63	67	77	93	a 180	a 180	196	79	56	77	58	44
23	60	a 67	77	93	161	196	370	79	52	67	a 56	44
24	63	67	77	93	143	196	258	a 79	50	56	54	44
25	63	67	77	a 90	220	196	245	79	50	54	46	44
26	67	67	113	89	345	172	a 245	77	50	172	46	43
27	67	65	93	87	320	196	258	74	50	67	46	43
28	63	63	a 93	86	245	1,120	196	73	a 50	56	54	46
29	63	63	93	86	-------	a 900	184	67	52	56	54	46
30	63	a 65	106	85	-------	595	161	67	54	54	54	40
31	63	-------	99	82	-------	445	-------	a 70	-------	52	54	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	109	58	66.5	0.311	0.36
November	93	63	68.7	.321	.36
December	150	65	84.5	.395	.46
January	120	75	96.4	.450	.52
February	400	67	166	.776	.81
March	1,120	113	277	1.29	1.49
April	500	106	227	1.06	1.18
May	300	67	133	.621	.72
June	72	50	55.8	.261	.29
July	172	52	59.6	.279	.32
August	70	46	52.1	.243	.28
September	55	40	45.4	.212	.24
The year	1,120	40	111	.519	7.03

a Estimated.

DUCK RIVER AT COLUMBIA, TENN.

LOCATION.—Water-stage recorder at highway bridge two blocks north of the public square at Columbia, Maury County. Zero of gage is 537.78 feet above mean sea level.

DRAINAGE AREA.—1,210 square miles.

RECORDS AVAILABLE.—October, 1904, to December, 1908; April, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 16,200 second-feet Mar. 29 (gage height, 19.2 feet); minimum, 5 second-feet Feb. 3-5 (gage height, —0.90 foot).

1904–1908; 1920–1931: Maximum discharge, about 43,000 second-feet probably on Mar. 25, 1929 (gage height, from high water mark, 40.7 feet); no flow Oct. 22, 1922, caused by regulation.

Maximum stage known, 45.6 feet Mar. 30, 1902.

REMARKS.—Records good except those for estimated periods, which are fair. Low-water flow is completely regulated at Tennessee Electric Power Co.'s dam three-quarters of a mile above gage. There are three other small power dams above station.

Daily and monthly discharge, in second-feet 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	e 90	154	655	e 280	6,070	5,050	656	80	90	116	57
2	88	e 100	132	464	e 180	5,510	4,490	816	216	187	93	38
3	88	e 120	140	547	210	3,610	3,320	1,030	184	160	74	27
4	e 75	e 150	117	366	326	2,710	2,600	748	26	1,800	158	125
5	e 85	e 150	238	927	155	2,060	2,120	704	17	2,380	110	41
6	e 100	e 145	678	2,140	264	1,580	1,760	714	251	769	158	38
7	e 120	e 140	1,120	1,940	250	1,690	1,490	626	34	546	44	61
8	e 155	e 95	1,040	1,830	221	2,260	1,320	798	166	436	74	50
9	e 210	e 95	546	1,900	356	2,050	1,190	1,160	26	514	54	36
10	e 270	e 170	476	1,600	732	1,530	1,040	1,750	182	180	38	21
11	e 265	e 420	414	1,360	900	1,290	840	1,660	147	198	46	50
12	255	e 390	231	1,250	710	1,180	821	1,180	10	62	79	15
13	164	456	339	1,470	528	1,020	767	964	203	190	40	108
14	137	e 650	279	1,570	1,910	846	744	729	111	9	30	8
15	136	e 1,000	190	1,300	2,950	813	605	530	166	157	62	7
16	142	1,380	345	e 972	2,020	719	552	608	94	62	37	40
17	138	1,180	192	e 935	2,150	543	642	348	72	112	72	54
18	132	1,100	392	e 905	3,270	438	644	428	82	62	54	19
19	130	742	315	886	3,430	704	582	488	69	97	48	92
20	64	e 333	494	832	2,520	438	644	278	72	190	244	24
21	117	e 310	372	804	1,940	594	624	330	122	54	54	36
22	124	e 300	437	668	1,530	656	1,300	614	75	305	53	38
23	140	e 290	374	561	1,260	904	2,300	456	140	76	60	42
24	e 150	e 270	368	560	1,250	920	1,580	157	164	130	48	36
25	e 80	e 230	276	530	3,750	778	1,320	138	178	54	76	44
26	e 110	202	664	416	5,020	732	1,160	300	163	142	22	20
27	e 140	126	1,520	467	3,320	887	1,010	239	81	134	26	62
28	e 145	152	1,690	422	3,090	10,400	960	112	70	84	98	34
29	e 145	150	1,270	304	-------	13,500	700	200	117	98	86	40
30	e 140	102	1,100	e 260	-------	6,730	752	252	86	156	46	36
31	e 115	-------	721	e 210	-------	4,420	-------	204	-------	68	47	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	270	64	138	0.114	0.13
November	1,380	90	368	.304	.34
December	1,690	117	536	.443	.51
January	2,140	210	937	.774	.89
February	5,020	155	1,590	1.31	1.36
March	13,500	438	2,500	2.07	2.39
April	5,050	552	1,430	1.18	1.32
May	1,750	112	620	.512	.59
June	251	10	113	.093	.10
July	2,380	9	307	.254	.29
August	244	22	72.5	.060	.07
September	125	7	43.3	.036	.04
The year	13,500	7	717	.593	8.03

e Estimated.

DUCK RIVER AT CENTERVILLE, TENN.

LOCATION.—Water-stage recorder at highway bridge three-quarters of a mile north of courthouse at Centerville, Hickman County, and 1 mile above Nashville, Chattanooga & St. Louis Railway bridge. Zero of gage is 451.33 feet above mean sea level.

DRAINAGE AREA.—2,070 square miles.

RECORDS AVAILABLE.—March, 1919, to September, 1931.

EXTREMES.—Maximum discharge during year, 20,000 second-feet Mar. 29 (gage height, 14.6 feet); minimum, 106 second-feet Sept. 19 (gage height, 0.72 foot).

1919–1931: Maximum discharge, about 45,400 second-feet Mar 27, 1929; maximum gage height (estimated), 28.0 feet Apr. 2, 1920; minimum discharge, 68 second-feet Aug. 30, 1925 (gage height, 0.39 foot).

REMARKS.—Records good. Some regulation at low water, caused by operation of power plant at Columbia. Regulation greatly damped by many long pools above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	276	402	1,150	639	7,660	8,300	1,320	500	280	232	207
2	285	276	375	1,070	560	9,790	8,470	1,360	452	285	199	177
3	262	272	407	878	625	7,500	6,700	1,400	340	470	169	192
4	240	295	360	862	506	5,460	5,300	1,490	390	512	188	207
5	236	325	424	788	560	4,100	4,250	1,230	375	2,200	224	188
6	211	285	580	1,630	500	3,240	3,450	1,230	285	1,820	345	192
7	224	258	1,070	2,700	482	2,960	2,900	1,230	240	1,110	440	192
8	300	272	1,400	2,440	518	4,250	2,380	1,150	345	795	429	162
9	355	276	1,320	2,510	930	4,250	2,150	1,270	290	632	280	142
10	345	407	915	2,510	1,270	3,450	1,930	1,880	285	744	215	132
11	464	667	825	2,090	1,360	2,700	1,720	2,200	249	407	199	132
12	470	688	730	1,880	1,400	2,260	1,490	1,930	295	335	188	132
13	429	653	592	1,780	1,270	2,040	1,440	1,540	335	345	173	142
14	370	695	573	2,040	2,200	1,780	1,320	1,320	280	232	166	142
15	295	1,040	542	1,930	3,960	1,580	1,230	1,110	285	335	188	195
16	276	1,680	512	1,680	4,100	1,580	1,110	915	285	240	166	195
17	285	1,720	548	1,440	3,310	1,360	1,040	915	272	240	192	149
18	335	1,440	548	1,360	4,100	1,320	1,360	744	262	203	215	114
19	355	1,320	612	1,190	5,000	1,150	1,320	695	244	236	192	109
20	315	1,070	681	1,230	4,700	1,270	1,110	772	240	207	228	123
21	285	751	730	1,190	3,590	975	1,190	653	236	440	345	123
22	240	674	695	1,150	2,900	1,400	2,440	639	203	470	412	136
23	262	530	674	1,050	2,320	1,320	3,450	795	500	524	249	136
24	310	464	653	915	2,040	1,440	3,380	788	1,360	434	192	117
25	335	464	625	900	3,520	1,400	2,510	599	681	285	169	112
26	276	458	795	885	6,860	1,320	2,260	396	500	285	162	123
27	285	402	1,580	765	6,700	1,490	2,040	446	440	232	166	136
28	310	390	2,200	818	5,150	8,960	1,720	548	470	267	192	142
29	375	370	2,040	765	-------	18,400	1,580	476	300	262	215	132
30	325	396	1,580	639	-------	14,600	1,360	375	272	211	220	129
31	310	-------	1,440	702	-------	8,300	-------	482	-------	207	215	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	470	211	311	0.150	0.17
November	1,720	258	627	.303	.34
December	2,200	360	853	.412	.48
January	2,700	639	1,390	.671	.77
February	6,860	482	2,540	1.23	1.28
March	18,400	975	4,170	2.01	2.32
April	8,470	1,040	2,700	1.30	1.45
May	2,200	375	1,030	.498	.57
June	1,360	203	374	.181	.20
July	2,200	203	492	.238	.27
August	440	162	221	.107	.12
September	207	109	150	.072	.08
The year	18,400	109	1,230	.594	8.05

DUCK RIVER NEAR HURRICANE MILLS, TENN.

LOCATION.—Staff gage at highway bridge on road between Waverly and Buffalo, 4 miles south of Hurricane Mills, Humphreys County, and 5 miles above mouth of Buffalo River. Zero of gage is 362.30 feet above mean sea level.

DRAINAGE AREA.—2,610 square miles.

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES—Maximum discharge during year, 18,600 second-feet Mar. 30 (gage height, 13.4 feet); minimum, 240 second-feet Sept. 21 (gage height, 0.43 foot).

1925–1931: Maximum discharge, about 50,500 second-feet Mar. 14, 1927 (gage height, 24.95 feet); minimum discharge, 185 second-feet Sept. 11, 12, 1925; minimum gage height, that of Sept. 21, 1931.

REMARKS.—Records good. Discharge estimated Feb. 7, July 30, Sept. 6. Possibly slight regulation during low water, caused by operation of small power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	402	512	625	1,650	970	8,400	9,160	2,300	715	458	430	402
2	430	485	625	1,330	970	10,600	9,800	2,200	715	540	430	458
3	430	485	595	1,330	715	9,320	8,250	2,100	655	625	375	375
4	458	458	595	1,330	970	7,080	6,800	2,100	625	905	325	375
5	402	540	655	1,250	715	5,580	5,450	2,010	595	685	375	375
6	375	512	715	1,110	840	4,680	4,930	1,920	595	3,380	485	375
7	375	485	970	2,610	730	4,080	3,960	1,830	540	1,740	655	375
8	430	430	1,490	2,940	625	5,320	3,490	1,830	485	1,180	685	350
9	485	458	1,650	2,940	905	5,320	3,160	1,650	595	1,040	595	315
10	540	540	1,490	2,940	1,740	4,680	2,830	1,920	540	840	485	295
11	540	715	1,250	2,830	1,740	3,960	2,500	2,500	512	840	402	280
12	595	1,110	1,110	2,400	2,010	3,490	2,200	2,830	458	568	375	275
13	595	905	1,040	2,300	1,920	3,050	2,010	2,200	540	485	350	285
14	568	905	905	2,200	2,200	2,720	1,830	2,010	595	775	350	290
15	568	1,040	840	2,500	3,960	2,400	1,650	1,570	485	512	325	285
16	512	1,650	808	2,200	4,930	2,200	1,650	1,410	458	595	320	375
17	512	2,100	775	2,010	4,440	2,100	1,490	1,330	485	458	325	375
18	485	1,830	808	1,830	4,320	2,010	1,410	1,330	485	485	375	295
19	540	1,740	775	1,740	5,190	1,650	1,830	1,330	458	402	458	265
20	540	1,570	808	1,410	5,450	1,570	1,650	1,330	430	375	402	250
21	512	1,250	970	1,570	4,560	1,650	1,650	1,180	485	1,180	485	240
22	485	1,110	970	1,490	3,840	1,650	2,200	905	485	1,330	540	255
23	458	905	970	1,490	3,270	1,740	3,960	905	540	905	540	250
24	512	745	970	1,410	3,160	1,920	4,560	840	840	970	430	275
25	540	655	905	1,330	3,720	1,920	3,720	1,040	1,570	745	350	270
26	540	745	970	1,250	6,800	1,880	3,380	1,180	840	625	402	265
27	485	595	1,330	1,180	7,950	1,830	3,840	655	715	540	540	265
28	540	540	2,200	1,110	6,520	5,450	2,940	775	655	458	430	265
29	540	540	2,720	1,110	-------	15,600	2,610	745	655	485	458	275
30	540	595	2,300	1,040	-------	18,600	2,300	715	485	440	458	260
31	540	-------	1,830	840	-------	9,970	-------	655	-------	402	430	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	595	375	499	0.191	0.22
November	2,100	430	872	.334	.37
December	2,720	595	1,120	.429	.49
January	2,940	840	1,760	.674	.78
February	7,950	625	3,040	1.16	1.21
March	18,600	1,570	4,920	1.89	2.18
April	9,800	1,410	3,570	1.37	1.53
May	2,830	655	1,530	.586	.68
June	1,570	430	608	.233	.26
July	3,380	375	805	.308	.36
August	685	320	438	.168	.19
September	458	240	310	.119	.13
The year	18,600	240	1,610	.617	8.40

PINEY RIVER AT VERNON, TENN.

LOCATION.—Staff gage 2,000 feet below mouth of Pretty Creek and half a mile below highway bridge at Vernon, Hickman County. Prior to Feb. 9, 1931, a chain gage at highway bridge was used. Zero of chain gage was 470.67 feet above mean sea level.

DRAINAGE AREA.—201 square miles (revised).

RECORDS AVAILABLE.—July, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,220 second-feet Mar. 1 (gage height, 4.3 feet); minimum, 48 second-feet Sept. 22 (gage height, 1.36 feet).

1925–1931: Maximum discharge, about 14,200 second-feet Dec. 21, 1926 (gage height, 16.5 feet, original gage datum); minimum, 42 second-feet Oct. 13, 14, 1928.

REMARKS.—Records good. Possibly slight regulation caused by operation of small milldam at Pinewood.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	63	73	88	68	1,120	700	290	78	61	58	54
2	52	63	68	79	68	750	610	272	75	66	56	61
3	52	63	66	79	68	565	520	255	75	68	56	63
4	52	61	66	79	66	460	440	220	72	63	56	56
5	54	61	88	99	66	380	380	213	72	63	58	54
6	54	59	92	96	66	342	325	206	68	67	61	54
7	52	59	85	88	63	480	290	185	90	66	61	53
8	76	59	79	107	63	700	272	172	75	61	58	53
9	71	66	73	103	238	500	255	192	72	58	58	52
10	63	126	73	103	238	420	238	162	68	58	56	52
11	61	103	79	103	202	360	213	149	68	57	56	51
12	59	99	76	110	182	325	192	140	67	56	54	52
13	57	92	73	99	220	290	175	135	84	98	56	52
14	57	85	68	103	400	272	162	126	72	120	55	52
15	54	139	71	92	360	238	152	118	86	110	54	53
16	54	107	73	85	308	213	146	113	76	76	54	52
17	63	99	73	88	325	196	140	108	68	63	56	50
18	63	79	71	88	308	182	135	103	66	62	56	50
19	61	76	68	92	290	172	135	98	64	63	57	50
20	59	73	68	85	272	159	123	98	66	58	61	50
21	59	79	68	85	255	162	159	96	66	610	58	49
22	59	73	68	82	220	172	325	96	98	199	55	49
23	73	68	66	82	213	152	325	90	90	143	53	50
24	68	68	66	79	210	149	308	88	86	92	52	50
25	68	68	63	79	565	140	290	86	68	86	52	49
26	66	66	148	76	610	132	420	86	66	75	152	55
27	68	63	131	76	460	192	420	82	63	68	82	50
28	82	63	114	73	480	900	380	80	63	66	66	50
29	71	63	110	71	-------	700	342	78	61	63	62	49
30	68	76	103	71	-------	520	290	78	61	61	60	49
31	66	-------	99	68	-------	520	-------	80	-------	61	56	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	82	52	61.7	0.307	0.35
November	139	59	77.3	.385	.43
December	148	63	81.3	.404	.47
January	110	68	87.4	.435	.50
February	610	63	246	1.22	1.27
March	1,120	132	383	1.91	2.20
April	700	123	295	1.47	1.64
May	290	78	139	.692	.80
June	98	61	72.8	.362	.40
July	610	56	94.1	.468	.54
August	152	52	60.8	.302	.35
September	63	49	52.1	.259	.29
The year	1,120	49	137	.682	9.24

BUFFALO RIVER NEAR FLATWOODS, TENN.

LOCATION.—Staff gage a quarter of a mile upstream from highway bridge on Flatwoods-Linden road, half a mile below mouth of Little Opossum Creek, and 1½ miles north of Flatwoods, Wayne County. Zero of gage is 513.47 feet above mean sea level.

DRAINAGE AREA.—439 square miles.

RECORDS AVAILABLE.—May, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,430 second-feet Aug. 7 (gage height, 8.00 feet); minimum, 89 second-feet Sept. 26 (gage height, 1.12 feet). 1920–1931: Maximum discharge, about 34,800 second-feet Mar. 13, 1927 (gage height, 29.3 feet); minimum, 65 second-feet Sept. 9, 1925.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	145	209	298	209	2,280	1,930	402	194	155	138	148
2	110	142	203	280	203	2,070	2,070	420	191	230	135	140
3	105	148	188	262	197	1,540	1,600	385	173	215	130	148
4	105	148	182	245	191	1,240	1,240	350	158	385	128	152
5	110	148	215	315	188	1,020	1,020	315	152	298	179	142
6	108	148	280	500	185	810	810	332	148	245	1,420	135
7	118	150	298	500	179	810	670	350	142	480	3,320	130
8	130	145	262	500	188	1,480	580	315	142	368	1,180	125
9	150	161	230	580	298	1,660	540	350	140	280	500	120
10	167	230	215	540	500	1,180	500	385	142	200	368	118
11	145	460	215	480	440	960	480	368	142	182	280	122
12	132	385	215	480	402	760	420	332	142	161	230	112
13	128	332	209	480	460	670	385	315	152	148	215	122
14	125	280	212	480	1,800	580	350	298	152	142	203	122
15	125	402	215	440	1,800	540	332	298	148	145	194	118
16	125	500	215	402	1,240	500	332	262	148	145	182	115
17	132	420	230	385	1,070	460	315	245	145	155	176	112
18	155	332	215	368	1,070	420	368	230	140	200	167	110
19	152	280	230	350	1,020	385	540	230	138	179	158	108
20	142	230	245	332	960	368	440	245	140	182	176	105
21	138	245	245	315	810	350	420	245	145	230	167	103
22	132	230	230	298	715	368	760	230	215	420	152	101
23	138	215	215	280	625	350	1,120	215	215	540	142	97
24	161	203	212	262	670	350	910	206	298	420	135	93
25	164	194	206	262	3,680	315	810	197	280	262	130	93
26	152	188	315	245	3,160	298	670	191	197	215	135	93
27	148	179	420	245	1,930	402	580	185	182	185	142	97
28	176	176	402	230	1,420	1,660	500	179	170	167	164	101
29	185	173	385	230	-------	2,440	460	173	158	155	230	99
30	167	191	350	215	-------	1,660	420	167	145	145	230	97
31	152	-------	315	215	-------	1,300	-------	179	-------	140	173	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	185	105	138	0.314	0.36
November	500	142	239	.544	.61
December	420	182	251	.572	.66
January	580	215	355	.809	.93
February	3,680	179	915	2.08	2.17
March	2,440	298	943	2.15	2.48
April	2,070	315	719	1.64	1.83
May	420	167	277	.631	.73
June	298	138	168	.383	.43
July	540	140	238	.542	.62
August	3,320	128	364	.829	.96
September	152	93	116	.264	.29
The year	3,680	93	390	.888	12.07

BUFFALO RIVER NEAR LOBELVILLE, TENN.

LOCATION.—Staff gage at Standing Rock Bridge, 4 miles north of Lobelville, Perry County. Zero of gage is 403.54 feet above mean sea level.
DRAINAGE AREA.—723 square miles.
RECORDS AVAILABLE.—November, 1927, to September, 1931.
EXTREMES.—Maximum discharge during year, 4,380 second-feet Feb. 26 (gage height, 8.1 feet); minimum, 150 second-feet Sept. 23–30 (gage height, 0.4 foot).

1927–1931: Maximum discharge, about 15,200 second-feet Mar. 24, 1929 (gage height, 16.25 feet); minimum, that of Sept. 23–30, 1931.
REMARKS.—Records good. Slight regulation caused by operation of mill and power plant at Lobelville.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	222	272	315	545	360	1,810	2,590	745	300	260	235	248
2	222	260	330	475	345	3,500	2,660	705	285	315	235	260
3	210	272	345	475	345	2,940	2,730	705	285	345	210	248
4	210	248	375	475	345	2,410	2,290	705	285	375	210	235
5	200	248	390	475	330	1,930	1,990	665	272	405	210	210
6	200	260	422	545	330	1,690	1,630	625	272	440	285	210
7	200	248	440	705	330	1,570	1,410	625	260	510	510	200
8	210	248	440	790	315	1,630	1,260	585	260	510	2,470	200
9	272	260	440	880	440	1,810	1,060	585	248	440	1,260	190
10	260	315	405	880	585	1,750	970	585	248	375	970	180
11	248	375	390	835	745	1,690	880	545	235	345	665	180
12	235	510	390	835	745	1,460	790	545	235	285	510	180
13	235	545	375	790	745	1,360	705	545	235	272	422	170
14	222	585	360	790	1,570	1,210	665	510	235	260	360	180
15	222	545	360	790	2,470	1,060	625	475	248	285	345	170
16	222	625	390	705	2,230	970	545	475	248	272	330	170
17	210	665	390	665	1,930	925	510	440	235	260	260	170
18	235	625	375	625	1,810	835	510	440	235	260	260	170
19	315	585	375	585	1,690	745	475	422	235	260	260	170
20	300	545	375	585	1,570	745	475	405	222	248	248	160
21	300	510	360	545	1,410	705	705	405	210	440	235	160
22	285	440	390	510	1,260	665	1,810	405	210	475	235	160
23	285	390	375	475	1,160	625	1,570	390	222	510	222	150
24	272	375	375	475	1,110	585	1,460	375	248	790	222	150
25	272	345	360	440	1,690	545	1,360	360	405	625	210	150
26	272	345	375	422	4,380	545	1,260	360	390	475	210	150
27	260	315	510	405	3,900	625	1,160	345	345	440	210	150
28	285	315	625	405	2,940	1,570	1,020	330	285	390	285	150
29	330	300	625	405	-------	3,150	925	315	272	315	260	150
30	300	300	625	390	-------	2,800	790	315	260	260	260	150
31	285	-------	585	375	-------	2,350	-------	300	-------	248	248	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	330	200	251	0.347	0.40
November	665	248	396	.548	.61
December	625	315	416	.575	.66
January	880	375	590	.816	.94
February	4,380	315	1,320	1.83	1.91
March	3,500	545	1,490	2.06	2.38
April	2,730	475	1,230	1.70	1.90
May	745	300	491	.679	.78
June	405	210	264	.365	.41
July	790	248	377	.521	.60
August	2,470	210	415	.574	.66
September	260	150	181	.250	.28
The year	4,380	150	614	.849	11.53

BIG SANDY RIVER AT BRUCETON, TENN.

LOCATION.—Chain gage at highway bridge two-thirds of a mile above mouth of Cherry Creek and three-quarters of a mile northeast of Bruceton, Carroll County.

DRAINAGE AREA.—171 square miles.

RECORDS AVAILABLE.—July, 1929, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,130 second-feet Mar. 28 (gage height, 10.6 feet); minimum, 43 second-feet Sept. 28, 30 (gage height, 2.24 feet).

1929–1931: Maximum discharge, 3,640 second-feet Jan. 11, 1930 (gage height, from high-water mark, 13.98 feet); minimum discharge, 42 second-feet Aug. 12, 1930; minimum gage height, that of Sept. 28, 30, 1931.

REMARKS.—Records fair. Discharge estimated Apr. 18–22.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	77	165	101	101	1,130	1,770	108	72	45	49	52
2	55	77	108	94	94	390	850	165	63	63	49	55
3	55	82	101	116	101	264	318	123	59	55	48	123
4	55	82	101	131	94	219	372	101	59	148	48	201
5	55	82	174	372	94	183	228	94	55	63	82	192
6	59	82	282	210	101	174	192	139	53	63	480	52
7	59	77	156	139	101	516	174	165	59	59	1,100	50
8	680	77	123	246	116	1,190	165	116	54	53	1,400	49
9	174	82	108	174	1,130	318	148	108	53	49	1,400	48
10	82	282	108	139	408	219	148	108	54	47	174	49
11	72	228	139	131	192	192	219	94	52	46	88	63
12	68	192	139	210	156	174	156	101	52	44	77	52
13	68	148	108	174	174	156	139	101	59	44	68	50
14	68	116	108	139	925	156	139	94	68	44	63	47
15	68	354	123	101	282	148	123	88	54	46	63	46
16	63	165	192	116	210	139	123	82	63	68	59	47
17	101	165	131	148	642	131	116	77	55	47	63	46
18	82	116	148	148	336	131	105	72	51	53	59	44
19	68	108	148	156	219	148	105	68	49	51	59	46
20	68	101	123	123	210	131	105	148	51	82	82	46
21	68	108	116	116	165	131	120	94	49	228	101	45
22	68	108	108	108	156	480	300	82	49	372	59	44
23	94	94	101	101	148	210	183	82	82	1,650	55	44
24	123	101	101	108	148	192	139	72	108	372	53	44
25	82	94	101	108	1,810	156	131	68	59	101	52	44
26	77	94	606	108	1,360	156	516	72	55	72	63	45
27	77	88	282	123	354	900	219	68	50	63	72	44
28	165	94	174	108	246	2,130	148	68	49	59	55	43
29	88	88	201	108	------	1,470	123	59	47	55	94	44
30	77	139	148	101	------	282	116	59	45	54	59	43
31	77	------	123	108	------	246	------	63	------	51	53	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	680	55	98.4	0.575	0.66
November	354	77	123	.719	.80
December	606	101	156	.912	1.05
January	372	94	141	.825	.95
February	1,810	94	360	2.11	2.20
March	2,130	131	402	2.35	2.71
April	1,770	105	256	1.50	1.67
May	165	59	94.8	.554	.64
June	108	45	57.6	.337	.38
July	1,650	44	137	.801	.92
August	1,400	48	201	1.18	1.36
September	201	43	59.9	.350	.39
The year	2,130	43	173	1.01	13.73

CACHE RIVER BASIN

CACHE RIVER AT FORMAN, ILL.

LOCATION.—Chain gage in NE. ¼ sec. 31, T. 13 S., R. 3 E., at Chicago, Burlington & Quincy Railroad bridge at Forman, Johnson County, 1 mile below Dutchman Creek.

DRAINAGE AREA.—240 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 1,630 second-feet Mar. 9 (gage height, 10.80 feet); no flow Sept. 24, 25 (gage height, −0.75 foot).

1922–1931: Maximum discharge, 5,720 second-feet Jan. 26, 1929 (gage height, 16.5 feet); no flow July 31, Aug. 1, 1923, July 29 to Sept. 15, 1930, Sept. 24, 25, 1931.

REMARKS.—Records good except those for December, January, and estimated periods when stage was below zero of gage, which are poor.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	1.4	9.4	15	4.7	7.9	76	87	72	2.1		3.7
2	5.7	1.4	9.4	12	4.5	7.7	72	65	32	2.0	*0.8	6.7
3	4.7	1.4	13	6.6	4.5	7.3	62	56	15	2.0		5.4
4	3.7	1.4	13	4.5	4.4	6.9	116	44	14	1.9	.8	91
5	1.9	1.2	13	4.2	4.4	9.4	321	33	12	2.8	.8	14
6	1.7	1.2	15	4.2	4.5	79	202	83	9.7	6.5	5.3	5.5
7	1.5	1.1	15	4.0	6.3	708	99	237	8.3	5.2	6.3	4.0
8	1.3	1.1	15	3.8	12	1,370	76	390	59	4.4	5.1	2.5
9	1.2		15	3.8	121	1,630	65	225	99	3.5	4.5	2.0
10	1.2		53	3.7	121	1,370	56	116	41	3.0	4.3	1.5
11	1.1		41	3.6	116	1,310	585	91	7.9	2.4	3.8	1.2
12	1.1	*1.0	37	3.6	112	1,020	360	65	6.5	1.5	3.4	.9
13	1.0		34	3.4	116	708	225	59	5.6	1.2	3.1	.4
14	1.0		27	2.9	121	550	160	53	4.6	1.0	2.3	.2
15	.8		30	3.8	121	345	95	44	4.3		1.3	.2
16	13		39	4.2	121	273	76	32	4.1		.6	.2
17	116	*20	47	5.5	76	249	59	26	3.9	*.6	.4	.1
18	68	38	47	6.1	62	225	47	23	3.6		.6	.06
19	44	31	50	6.9	47	191	38	20	3.6		3.8	.03
20	39	26	50	8.1	28	170	36	213	3.4		4.4	.02
21	31	16	50	6.3	22	130	160	435	3.2		4.6	.02
22	20	7.9	50	5.5	18	108	375	321	3.1	*1.0	4.5	.01
23	13	6.7	53	5.5	16	99	297	191	3.0		3.9	.01
24	8.1	5.6	53	5.1	13	91	121	103	2.9		3.5	.00
25	6.9	6.2	53	5.1	12	68	87	76	2.6		3.1	.00
26	4.7	5.4	53	5.1	10	62	465	170	2.3	*.9	1.9	2.0
27	3.8	4.6	53	5.1	9.4	59	620	140	2.2		1.5	1.7
28	2.8	4.3	53	4.9	8.5	83	333	72	2.2		7.3	.7
29	2.3	6.2	50	4.9	------	130	180	65	2.1		108	.7
30	1.8	6.7	47	4.7	------	150	121	95	2.1	*.8	116	.7
31	1.6	------	47	4.7	------	91	------	103	------		18	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	116	0.8	13.4	0.056	0.06
November	38	----------	6.76	.028	.03
December	53	9.4	36.6	.152	.18
January	15	2.9	5.38	.022	.03
February	121	4.4	47.0	.196	.20
March	1,630	6.9	365	1.52	1.75
April	620	36	186	.775	.86
May	435	20	120	.500	.58
June	99	2.1	14.5	.060	.07
July	6.5	----------	1.71	.0071	.008
August	116	.4	10.5	.044	.05
September	91	0	4.85	.020	.02
The year	1,630	0	68.0	.283	3.84

* Estimated.

LARGE SPRINGS OF EAST TENNESSEE

Many of the smaller cities and towns in Tennessee obtain their water supply from springs. At certain localities in the State there are springs of large yield. Much interest was manifested in the flow of these springs during the drought of 1930, when public water supplies were steadily depleted and when many communities depending upon wells and springs were forced to seek other sources.

The importance of these springs as a source of water supply was realized, and an investigation was made during 1931 to obtain more reliable information as to the quantities and variation in flow. A careful reconnaissance was made during March, 1931, for the purpose of locating the larger springs to be considered in this investigation. Only springs having a flow at that time of about 1,000 gallons or more a minute were included. More than 100 springs were found that came under this classification. The area covered was that portion of the State east of Cumberland Mountain. These springs were carefully described as to location, physical characteristics, temperature, color, and quantity of flow. Also notes were taken as to recent rains that might have affected the normal discharge. The first set of discharge measurements was made during the later part of March and during April. The second set of discharge measurements was made at the same springs during the month of July, and the third and final set of readings was taken during the latter part of October and first part of November, near the end of a long drought. As might be expected, these measurements showed a very large decrease in flow between the visits.

The year 1931 proved to be an excellent one for an investigation of this kind, and the results show very clearly the characteristics of the springs and the dependable low-water yield. A complete list of these springs, showing the yield and other pertinent data, is given in the following table.

Discharge measurements at large springs in east Tennessee, 1930–31

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Anderson County, 1931							
Martin's	1½ miles north of Clinton.	Clinch River	Mar. 31	1,630	44	54	Clear.
			July 14	292	86	58	Do.
			Oct. 26	e 310			
Bacon's	½ mile south of Dossett.	Poplar Creek	Mar. 31	2,110	48	56	Clear.
			July 14	768	83	58	Do.
			Oct. 26	440	61	58	Do.
Crozier's*	5 miles east of Oliver Springs.	East Fork Creek	Mar. 31	951	46	54	Do.
			July 14	157	92	59	Do.
			Oct. 26	54	64	59	Do.
Bledsoe County, 1931							
Miller's*	1½ miles southeast of Lee.	Big Sequatchie River.	Mar. 24	1,490	48	51	Clear.
			July 21	417	78	57	Do.
			Nov. 3	162	72	57	Do.
Stevens'*	1.1 miles northwest of Litton.	Sequatchie River.	Mar. 25	1,900	56	51	Cloudy.
			July 21	812	72	59	Muddy.
			Nov. 3	126	57	57	Clear.
Big*	4 miles south of Litton.	do	Mar. 25	2,060	50	54	Do.
			July 21	359	72	58	Milky.
			Nov. 3	211	62	58	Clear.
Swafford*	6½ miles north of Pikeville.	do	Mar. 25	1,710	49	49	Do.
			July 21	956	70	55	Do.
			Nov. 3	36	61	52	Do.
Blowing*	3 miles east of Pikeville.	do	Mar. 25	2,090	48	47	Do.
			July 21	85	78	57	Do.
			Nov. 3	31	42	57	Do.
Blount County, 1931							
Schlosher Leather Co.	⅓ mile south of Walland.	Little River	Apr. 20	1,190	82	55	Clear.
			July 2	1,060	89	59	Do.
			Oct. 24	790	64	60	Do.
Dunn	2½ miles southwest of Townsend.	Short Creek	Apr. 20	3,520	82	56	Cloudy.
			July 3	1,410	81	58	Clear.
			Oct. 24	719	65	57	Do.

See foot notes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

Bradley County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Lake Wildwood*	3 miles south of Cleveland.	Coahulla Creek	Apr. 17	889	74	59	Clear.
			July 1	471	86	60	Do.
			Oct. 29	[b] 695	66	59	Do.
Thompson's*	7 miles south of Cleveland.	Cancer Creek	Apr. 17	965	69	58	Do.
			July 1	364	90	59	Do.
			Oct. 29	314	76	59	Do.
Silver	5 miles west of Cleveland.	Shady Valley Creek.	Apr. 17	2,060	82	58	Do.
			July 1	840	88	60	Do.
			Oct. 29	422	63	59	Do.

Campbell County, 1931

Queen Cave	2½ miles southeast of Jacksboro.	Cove Creek	May 6	1,090	69	47	Clear.
			July 14	234	74	58	Do.
			Oct. 26	144	65	57	Do.

Carter County, 1931

Hampton*	Hampton	Doe River	Mar. 27	2,900	66	57	Clear.
			Apr. 27	3,080	54	56	Do.
			July 9	2,680	79	58	Do.
			Oct. 17	2,160	50	57	Do.
Easterly's*	do	do	Mar. 27	1,050	66	66	Do.
			Apr. 27	1,080	49	56	Do.
			July 9	870	79	58	Do.
			Oct. 17	826	50	57	Do.
Brooks*	3 miles northeast of Hunter.	Stony Creek	Mar. 28	1,390			
			Apr. 25	3,390	58	52	Do.
			July 7	1,040	86	56	Do.
			Oct. 16	417	57	56	Do.
Butler	¼ mile west of Valley Forge.	Doe River	Mar. 27	3,110	66	56	Do.
			July 9	[c] 489	74	58	Do.
			Oct. 16	628	60	57	Do.
Big	3 miles west of Elizabethton.	Gap Creek	Mar. 28	1,400			
			Apr. 24	3,840	54	54	Murky.
			July 7	1,800	88	56	Do.
			Oct. 19	1,360	70	55	Clear.
Fish	Fish Springs	Watauga River	Apr. 27	3,160	59	54	Do.
			July 9	1,060	82	56	Do.
			Oct. 17	965	50	55	Do.

Claiborne County, 1931

Rodger's*	¼ miles west of Speedwell.	Davis' Creek	May 5	1,320	62	44	Clear.
			July 14	386	68	57	Do.
			Oct. 26	162	60	56	Do.
Bever's	6 miles east of Speedwell.	do	May 5	1,220	58	45	Do.
			July 13	58	94	59	Do.
			Oct. 27	36	76	58	Do.
Newman Ridge	5 miles west of Xenophon.	Sycamore Creek	May 5	[d] 1,460			Do.
			July 13	[d] 561	80	59	Do.
			Oct. 27	[d] 112	65	55	Do.

Cumberland County, 1931

Sequatchie No. 1*	6 miles north of Lit-ton.	Sequatchie River.	Mar. 25	7,130	44	50	Milky.
			July 21	1,600	72	59	Murky.
			Nov. 3	224	52	57	Clear.
Sequatchie No. 2*	do	do	Mar. 25	7,900	44	50	Milky.
			July 21	386	72	59	Muddy.
			Nov. 3	0			

See footnotes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

Dickson County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Fielder	6 miles south of Dickson.	Piney Creek	Aug. 6	928	------	------	
			Sept. 29	771	------	------	

Granger County, 1931

Turley Mill *	8 miles southeast of Rutledge.	Holston River	Apr. 30	2,740	74	57	Clear.
			July 10	1,080	80	59	Do.
			Oct. 21	530	67	57	Do.
Miller's *	6 miles southeast of Rutledge.	do	May 2	2,660	68	58	Do.
			July 10	1,470	80	59	Milky.
			Oct. 21	772	68	58	Clear.
May *	8 miles south of Rutledge.	do	May 2	3,250	80	60	Do.
			July 10	2,020	82	60	Milky.
			Oct. 21	1,010	62	57	Clear.
Buffalo Church *	7 miles southwest of Rutledge.	do	May 12	4,740	72	57	Do.
			July 10	1,720	82	59	Do.
			Oct. 22	1,710	76	58	Do.

Greene County, 1931

Norton's *	10 miles south of Greeneville.	Camp Creek	Apr. 23	2,100	68	48	Clear.
			July 6	144	74	52	Do.
			Oct. 21	18	58	53	Do.
Mercer *	12 miles southeast of Greeneville.	do	Apr. 23	1,880	49	53	Do.
			July 6	2,030	72	55	Do.
			Oct. 21	718	69	55	Do.
Horse Creek *	14 miles east of Greeneville.	Horse Creek	Apr. 23	3,130	75	50	Cloudy.
			July 6	224	85	52	Clear.
			Oct. 21	0	------	------	
Skyle's *	do	do	Apr. 23	902	72	54	Clear.
			July 6	655	78	55	Do.
			Oct. 21	216	74	55	Do.
Sally Seton	13 miles east of Greeneville.	do	Apr. 23	1,580	56	52	Do.
			July 6	489	76	54	Do.
			Oct. 21	247	68	55	Do.
Crawford	5 miles south of Fall Branch.	Lake Creek	Apr. 30	1,940	75	56	Do.
			July 8	691	82	58	Do.
			Oct. 16	610	63	57	Do.

Hamblen County, 1931

Panther *	5 miles southwest of Morristown.	Holston River	May 4	894	74	48	Clear.
			July 10	682	82	58	Milky.
			Oct. 21	364	61	58	Clear.

Hamilton County, 1931

Cave	4½ miles north of Hixon.	Chickamauga Creek.	Mar. 27	7,010	50	51	Clear.
			July 18	328	74	56	Do.
			Oct. 30	36	54	54	Do.
Anderson's	5 miles south of Georgetown.	Tennessee River.	Apr. 15	4,640	74	58	Do.
			June 13	767	------	------	Do.
			Nov. 2	458	62	58	Do.
Blue	7 miles north of Harrison.	do	Apr. 15	3,200	72	58	Do.
			July 15	1,810	79	59	Do.
			Nov. 2	1,650	55	58	Do.
McCallie's	3 miles west of Birchwood.	Grasshopper Creek.	Apr. 15	1,170	70	58	Do.
			July 15	601	79	57	Do.
			Nov. 2	408	57	59	Do.

See footnotes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

Jefferson County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
McAndrew *	7 miles west of Newport.	Indian Creek	Apr. 21	1,000	73	56	Clear.
			July 6	606	82	60	Muddy.
			Oct. 14	292	75	58	Clear.
Big *	9 miles south of Dandridge.	Muddy Creek	Apr. 21	979	69	56	Do.
			July 6	606	86	59	Muddy.
			Oct. 14	175	82	58	Clear.
Willpeck's	¼ mile west of Jefferson City.	Mossy Creek	May 8	1,060	70	58	Do.
			July 10	485	82	59	Do.
			Oct. 22	189	70	58	Do.
Bird's *	1 mile north of Jefferson City.	----do----------	May 8	853	61	58	Do.
			July 10	539	82	59	Do.
			Oct. 22	422	68	58	Do.
Mill	3 miles west of Jefferson City.	Holston River	May 16	2,210	74	58	Do.
			July 11	1,340	77	59	Do.
			Oct. 22	795	77	58	Do.
Blue	4 miles north of New Market.	----do----------	May 16	1,760	72	58	Do.
			July 11	1,090	71	58	Do.
			Oct. 22	1,010	72	58	Do.

Johnson County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Lowe's *	8 miles southwest of Mountain City.	Doe Creek	Apr. 28	1,730	48	54	Clear.
			July 8	1,660	74	55	Do.
			Oct. 19	1,690	51	54	Do.
Dugger *	6 miles east of Butler.	Watauga River	Apr. 27	1,320	57	55	Do.
			July 9	1,260	80	56	Do.
			Oct. 19	754	59	55	Do.
Silver Lake *	5 miles north of Mountain City.	Laurel Creek	Apr. 29	1,050	54	52	Do.
			July 8	956	76	58	Do.
			Oct. 19	862	49	54	Do.
Greer's *	1 mile east of Laurel Bloomery.	----do----------	Apr. 29	1,280	59	52	Do.
			July 8	1,170	80	58	Do.
			Oct. 19	462	46	54	Do.
Smith's Butler	¼ mile east of Butler.	Watauga River	Mar. 27	3,370	------	------	Estimated.
			July 9	1,910	80	56	Do.
			Oct. 19	1,800	59	55	Do.

Knox County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Carter's Cave *	3 miles west of Strawberry Plains.	Holston River	May 9	1,230	60	58	Clear.
			July 11	*620	84	59	Milky.
			Oct. 22	1,140	60	57	Clear.
Russell's *	5½ miles southwest of Strawberry Plains.	Limestone Creek.	May 9	5,800	64	58	Muddy.
			July 11	1,700	85	61	Do.
			Oct. 22	885	60	59	Murky.
Deep	3 miles northwest of Fountain City.	Beaver Creek	May 11	1,590	61	59	Clear.
			July 13	556	81	59	Milky.
			Oct. 28	413	64	57	Clear.
Seven *	10 miles east of Concord.	Sinking Creek	May 14	911	74	58	Do.
			July 3	700	91	59	Do.
			Oct. 13	431	75	59	Do.

Loudon County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Martin's *	2 miles north of Philadelphia.	Sweetwater Creek.	Mar. 30	1,470	62	58	Clear.
			July 2	812	88	59	Do.
			Oct. 12	489	77	60	Do.
Muddy Creek *	1 mile northwest of Martel.	Muddy Creek	Mar. 30	1,320	60	58	Cloudy.
			July 3	588	90	60	Clear.
			Oct. 13	400	78	59	Do.
Simpson	7 miles southeast of Loudon.	Fork Creek	Apr. 18	2,840	76	58	Do.
			July 2	2,040	87	59	Do.
			Oct. 12	1,400	78	59	Do.

See footnotes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

Marion County, 1930–31

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
			1931				
Lodge's Blue	2 miles southeast of Richard City.	Tennessee River.	Mar. 14	1,960	54	54	Clear.
			July 20	72	88	63	Do.
			Nov. 4	0			
Ellis' Blue	9 miles northwest of South Pittsburg.	Sweeden Creek	Mar. 16	7,160	42	52	Do.
			July 20	597	85	58	Do.
			Nov. 4	270	72	58	Do.
T. H. Martin's No. 1.*	Dove	Battle Creek	Mar. 17	5,660	58	50	Do.
			July 20	139	81	55	Do.
			Nov. 4	238	57	54	Do.
T. H. Martin's No. 2.*	½ mile southwest of Dove.	do	Mar. 17	12,700	51	49	Do.
			July 20	772	50	55	Do.
			Nov. 4	359	60	54	Do.
Tate*	1½ miles south of Dove.	do	Mar. 17	956	50	52	Do.
			July 20	58	66	58	Do.
			Nov. 4	0			
Bible	1 mile west of Comfort P. O.	do	Mar. 17	3,640	60	50	Do.
			July 20	1,280	78	56	Do.
			Nov. 4	633	61	56	Do.
Kelly's *	6 miles northwest of South Pittsburg.	do	Mar. 17	1,500	61	51	Do.
			July 20	166	85	58	Do.
			Nov. 4	54	63	57	Do.
Smith's Blue	Jasper	Big Sequatchie River.	Mar. 18	10,900	48	50	Do.
			July 20	453	85	58	Do.
			Nov. 3	224	54	57	Do.
Dancing Fern Cave.*	1 mile north of Sequatchie.	Little Sequatchie River.	Mar. 18	7,340	61	47	Do.
			July 20	242	84	56	Do.
			Nov. 4	0			
Blowing*	Sequatchie	Big Sequatchie River.	July 14	781			
			Oct. 27	374			
Do	do	do	Mar. 18	2,360	56	50	Do.
			July 20	750	84	56	Do.
			Nov. 4	494	73	56	Do.
Blue Hole *	10 miles west of Hales Bar.	Tennessee River.	Mar. 19	1,740	58	54	Do.
			July 20	135	78	57	Do.
			Nov. 4	103	69	56	Do.
Daniels *	5 miles north of Whitwell.	Big Sequatchie River.	Mar. 23	4,230	56	48	Do.
			July 21	494	80	57	Do.
			Nov. 3	90	64	52	Do.
			1930				
			Oct. 27	317			
			Oct. 31	1,440			
Blue	Jasper	do	Nov. 3	1,010			
			Nov. 10	732			
			do	781			
			1931				
Ellis	Sequatchie	do	July 14	135			

McMinn County, 1931

Thompson's *	1½ miles southwest of Riceville.	Mouse Creek	Mar. 28	1,210	54	57	Clear.
			July 1	[b] 2,000	91	59	Do.
			Oct. 12	615	78	59	Do.
Big	1 mile south of Niota	do	Mar. 30	1,050	50	56	Cloudy.
			July 2	754	86	60	Murky.
			Oct. 12	287	83	60	Clear.
Kennedy's *	4 miles east of Decatur.	Rogers Creek	Apr. 3	970	61	56	Do.
			July 15	90	83	59	Do.
			Nov. 2	31	57	57	Do.
Clear *	8 miles north of Riceville.	do	Apr. 3	1,050	61	56	Do.
			July 15	534	89	59	Milky.
			Nov. 2	108	60	58	Clear.
Cagle's *	6 miles northwest of Athens.	Mouse Creek	Apr. 16	2,300	68	59	Do.
			July 1	1,290	88	59	Do.
			Oct. 12	543	84	59	Do.
Ingleside	Athens	Oostanoula Creek.	Apr. 16	1,850	74	58	Do.
			July 1	1,270	78	59	Murky.
			Oct. 12	1,180	82	59	Clear.

See footnotes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

McMinn County, 1931—Continued

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Fowler *	2 miles southeast of Etowah.	Conasauga Creek.	Apr. 16	1,340	74	59	Clear
			July 1	368	94	60	Do.
			Oct. 29	375	55	59	Do.
Hick's *	2½ miles north of Englewood.	Middle Creek	Apr. 17	934	75	54	Do.
			July 1	620	90	60	Murky.
			Oct. 29	458	59	59	Muddy.

Meigs County, 1931

Cave *	3 miles north of Euchee.	Tennessee River.	Apr. 2	1,120	54	55	Clear.
			July 15	220	84	59	Do.
			Oct. 31	139	54	57	Do.
Keylon's *	1½ miles north of Tenmile.	Tenmile Creek	Apr. 3	2,380	54	58	Do.
			July 15	260	94	59	Do.
			Oct. 31	94	59	57	Do.
Big	Big Spring	Hiwassee River.	Apr. 16	1,430	70	59	Do.
			July 15	485	82	59	Do.
			Nov. 2	310	60	58	Do.

Monroe County, 1931

Howard	4 miles east of Sweetwater.	Fork Creek	Apr. 17	1,400	74	58	Clear.
			July 2	588	88	59	Do.
			Oct. 12	130	84	59	Do.
Crystal *	1 mile east of Sweetwater.	Sweetwater Creek.	Apr. 18	1,510	74	58	Do.
			July 2	516	89	58	Do.
			Oct. 12	418	87	59	Do.
Reed's *	2½ miles east of Philadelphia.	do	Apr. 18	1,190	70	58	Do.
			July 2	646	92	60	Do.
			Oct. 12	166	78	59	Do.

Rhea County, 1931

Porter's Lake	7 miles south of Rhea Springs.	Yellow Creek	Mar. 26	1,660	61	62	Clear.
			July 18	1,400	99	60	Do.
			Oct. 30	700	54	59	Do.
Blue	¾ mile southwest of Rhea Springs.	Wolf Creek	Mar. 26	1,140	60	56	Do.
			July 18	772	90	60	Do.
			Oct. 30	404	51	60	Do.

Roane County, 1931

McKinney's *	4 miles north of Wheat.	East Fork Creek	Apr. 1	1,030	45	55	Clear.
			July 14	292	83	59	Do.
			Oct. 26	144	62	58	Do.
Bowman's *	5 miles south of Harriman.	Caney Creek	Apr. 1	885	38	54	Do.
			July 14	198	78	59	Do.
			Oct. 30	180	50	56	Do.
Rockwood Bank's*	6 miles south of Kingston.	Riley's Creek	Apr. 2	1,080	61	58	Cloudy.
			July 15	63	84	58	Clear.
			Oct. 31	45	48	56	Do.
McMurray's *	8 miles south of Kingston.	do	Apr. 2	1,060	64	59	Do.
			July 15	171	84	58	Do.
			Oct. 31	144	49	55	Do.
Shilo's *	12 miles south of Kingston.	do	Apr. 2	992	55	58	Do.
			July 15	72	86	58	Do.
			Oct. 31	76	54	58	Do.
Blue *	5 miles north of Euchee.	Tennessee River.	Apr. 2	2,040	54	56	Do.
			July 15	574	80	58	Do.
			Oct. 31	252	52	58	Do.
Gordon's *	6 miles north of Euchee.	do	Apr. 2	1,600	54	54	Do.
			July 15	471	85	59	Do.
			Oct. 31	148	51	57	Do.
Post Oak *	3½ miles east of Rockwood.	Caney Creek	May 13	840	60	56	Do.
			July 14	382	83	59	Do.
			Oct. 30	216	58	57	Do.

See footnotes at end of table.

Discharge measurements at large springs in east Tennessee, 1930–31—Contd.

Sequatchie County, 1931

Spring	Location	Tributary to—	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Pickett Creek *	¾ mile northeast of Cartwright.	Big Sequatchie River.	Mar. 23	5,900	60	47	Clear.
			July 21	135	73	59	Murky.
			Nov. 3	58	57	51	Clear.
Mack Stone Cave*	3½ miles south of Dunlap.	----do----	Mar. 23	2,480	52	47	Do.
			July 21	148	73	56	Muddy.
			Nov. 3	31	62	51	Clear.
Boynton *	½ mile south of Daus.	Therman Creek.	Mar. 23	9,590	60	44	Do.
			July 21	341	76	55	Do.
			Nov. 3	121	62	54	Do.
Barker's *	2 miles northeast of Dunlap.	Brush Creek----	Mar. 24	1,680	58	55	Do.
			July 21	615	73	57	Do.
			Nov. 3	1,080	72	57	Do.

Sevier County, 1931

Cave *	13 miles east of Sevierville.	Flat Creek----	Apr. 21	1,540	71	55	Clear.
			July 6	785	74	57	Muddy.
			Oct. 14	377	70	57	Clear.

Sullivan County, 1931

Carmack *	3 miles east of Bristol.	Sinking Creek---	Apr. 28	1,620	61	54	Clear.
			July 8	809	84	57	Milky.
			Oct. 16	489	62	56	Clear.

Unicoi County, 1931

Love *	1 mile south of Erwin.	Nolichucky River.	Apr. 24	745	60	56	Clear.
			July 7	[a] 1,280	88	63	Do.
			Oct. 20	[a] 997	65	57	Do.
Birchfield *	½ mile north of Erwin.	----do----	Apr. 24	2,020	60	56	Do.
			July 7	1,330	88	57	Do.
			Oct. 20	943	62	57	Do.
United States Fisheries.*	2 miles north of Erwin.	North Indian Creek.	Apr. 24	1,090	63	56	Do.
			July 7	1,030	90	61	Do.
			Oct. 20	992	53	56	Do.

Union County, 1931

Fulliton Cave	15 miles north of Sharp's Chapel.	Powell River----	May 11	1,700	59	56	Clear.
			July 13	1,960	74	58	Do.
			Oct. 27	1,760	54	56	Do.
Violet's	6 miles south of Speedwell.	----do----	May 11	7,100	58	55	Do.
			July 13	4,390	70	59	Do.
			Oct. 27	3,490	60	57	Do.

[a] Entire flow pumped. Some storage. Discharge greater than natural flow of spring.
[b] Rain raised lake level. Discharge too great.
[c] Most of spring not measured, owing to stage of river.
[d] Estimated.
[e] Pipe flow neglected.
[f] Mill pond at mouth not down to normal.
[g] Measurement at a section below that used on Apr. 24. Includes many small springs.
* Spring not subject to submergence by adjacent streams.

NOTE.—In every case in which the water was not clear the measurement was preceded by recent rains.

MISCELLANEOUS DISCHARGE MEASUREMENTS

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow are made at other points, as shown by the following table:

Miscellaneous discharge measurements in Ohio River drainage basin during the year ending September 30, 1931

Date	Stream	Tributary to—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Mar. 31	New Philadelphia power canal.	Tuscarawas River	On U. S. Route 21 at New Philadelphia, Ohio.		267
Apr. 13	do	do	do		262
Oct. 6	Tennessee River	Ohio River	Chattanooga, Tenn	7.88	7,520
Jan. 19	do	do	do	8.66	20,300
Apr. 6	do	do	do	22.24	122,000
Sept. 23	do	do	do	7.96	9,100
Sept. 11	Joel's Branch	Davidson River	Half a mile above mouth, near Pisgah Forest, N. C.		0.59
Do	Coontree Creek	do	A quarter of a mile above mouth, Pisgah Forest, N. C.		1.03
Do	Grogan's Creek	do	John Rock public camp site, near Pisgah Forest, N. C.		2.75
Dec. 2	Swannanoa River	French Broad River	Biltmore, N. C	1.50	101
Sept. 18	South Toe River	Nolichucky River	Above Camprock Creek, near Busick, N. C.		9.34
Do	Neal's Creek	South Toe River	Just above mouth, near Busick, N. C.		1.55
July 11	Tide Spring	Middle Fork of Holston River.	Near Marion, Va	.50	0.30
June 13	Suee Creek	Tennessee River	Near Decatur, Tenn		45.6
June 25	do	do	do		32.0
Aug. 20	do	do	do		26.7

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