UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY *of the* UNITED STATES 1934

PART 4

ST. LAWRENCE RIVER BASIN

Prepared in cooperation with the States of
INDIANA, MICHIGAN, MINNESOTA, NEW YORK
OHIO, VERMONT, AND WISCONSIN

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 759

UNITED STATES DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary
GEOLOGICAL SURVEY
W. C. MENDENHALL, Director

Water-Supply Paper 759

SURFACE WATER SUPPLY *of the* UNITED STATES 1934

PART 4
ST. LAWRENCE RIVER BASIN

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LASLEY LEE, and S. B. SOULÉ, District Engineers

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SURFACE WATER SUPPLY OF ST. LAWRENCE RIVER BASIN, 1934

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1934.

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, 1895–1934

1895	$12,500.00	1911–17	$150,000.00	1928	$147,000.00
1896	24,500.00	1918	175,000.00	1929	270,500.00
1897–99	50,000.00	1919	148,244.10	1930	275,000.00
1900	70,000.00	1920	175,000.00	1931	565,000.00
1901–2	100,000.00	1921–23	180,000.00	1932	711,000.00
1903–6	200,000.00	1924–25	170,000.00	1933	600,000.00
1907	150,000.00	1926	165,000.00	1934	[1] 540,000.00
1908–10	100,000.00	1927	151,000.00		

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 6,900 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July 1934, 2,940 gaging stations were being maintained by the Geological Survey and the cooperating organiza-

[1] Only $340,000 available for expenditure.

tions. 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 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, 1933, and ending September 30, 1934. At the beginning of January in most parts of the United States much of the precipitation in the preceding 3 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.

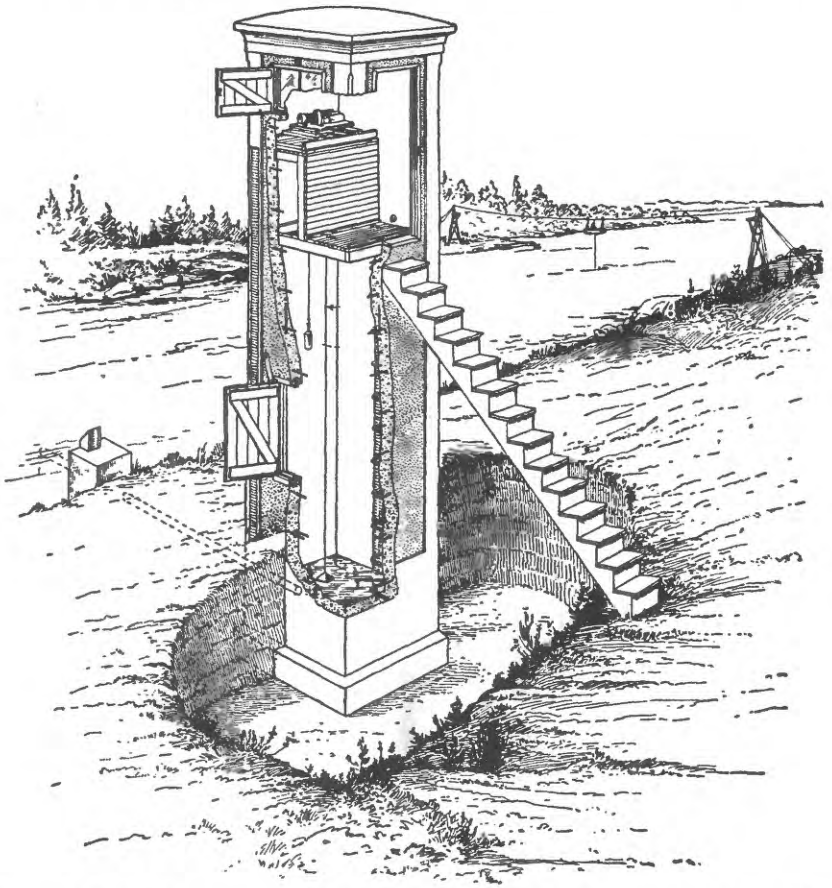

FIGURE 1.—Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.

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 nonrecording gage, or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of 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 discharges for any stage are prepared from the discharge measurements. The application of the daily gage heights 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 usually 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 information in regard to the location and type of gage, diversions that decrease the flow at the gage, artificial regulation from pondage or storage, and the accuracy of the records. Under "average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Information under "Extremes" gives the maximum discharge and gage height; the minimum discharge, if there is little or no regulation; the minimum daily discharge, if there is extensive regulation, and also the minimum discharge, if useful; and the minimum gage height except when it is of no importance. Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum represents the lowest discharge unless otherwise qualified.

The table of daily discharge gives, for stations equipped with nonrecording gages, the discharge in second-feet corresponding to once-daily or the mean of twice-daily readings of the gage. For stations equipped with water-stage recorders the table gives the discharge corresponding to the mean daily gage height except for stations on streams subject to sudden or rapid fluctuation. For stations subject to such fluctuation the mean daily gage height may not indicate the true mean daily discharge, which must be obtained by averaging the discharge for intervals of the day or by using the discharge integrator, an instrument for obtaining the 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.

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, in general, the daily records are accurate within 5 percent; "good", within 10 percent; "fair", within 15 percent; and "poor", within 20 percent 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.

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.

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, and that greater degrees of refinement in computations and records may be warranted with increased data and use of improved equipment.

In order to permit greater refinement in analysis and comparison of records for adjacent stations, the following changes have been made in the computation procedure: (*a*) Mean monthly discharge above 1,000 second-feet and monthly run-off above 10,000 acre-feet are expressed to four significant figures instead of three significant figures, as formerly; (*b*) monthly run-off in acre-feet is computed from the total second-foot-days for the month and not from the mean discharge for the month; (*c*) drainage areas above 1,000 square miles, if measured on topographic maps, or if otherwise warranted, are expressed to four significant figures instead of three as formerly. Some of the records in the series of reports for 1934 have been computed in accordance with the modified procedure.

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 power, 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 the 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 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 Unitcd 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, Maine, Statehouse.
Boston, Mass., 945 Post Office Building.
Hartford, Conn., 203 Federal Building.
Albany, N. Y., 526 Federal Building.
Trenton, N. J., 228 Federal Building.
Harrisburg, Pa., 490 Education Building.
Charlottesville, Va., 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.
Montgomery, Ala., Post Office Building.
Chattanooga, Tenn., 217 Post Office 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., 808 New Post Office Building.
Iowa City, Iowa, 402 Hydraulic Laboratory, University of Iowa.
St. Louis, Mo., Customhouse, Eighth and Olive Streets.
Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
Topeka, Kans., 305 Federal Building.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Highway Building.
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, 429 Federal Building.
Helena, Mont., 421 Federal Building.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 510 Eighth and Figueroa Building.
Honolulu, Hawaii, 225 Federal Building.

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

Stream-flow records have been obtained at about 6,900 points in he United States, and the data obtained have been published in the eports tabulated as follows:

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
th A, pt. 2	Descriptive information only	
th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept. 1890.
th A, pt. 2	do	1884 to June 30, 1891.
th A, pt. 3	do	1884 to Dec. 31, 1892.
th A, pt. 2	Monthly discharge (long-time records, 1871–93)	1888 to Dec. 31, 1893.
131	Descriptions, measurements gage heights, and ratings	1893–94.
th A, pt. 2	Descriptive information only.	
140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also data covering earlier years).	1895.
11	Gage heights (also gage heights for earlier years)	1896.
th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895–96.
15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas River.	1897.
16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.	1897.

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

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

Report	Character of data	Year
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 hgeihts, 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.
W 726 to 739	do	1932.
W 741 to 754	do	1933.
W 756 to 769	do	1934.

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 1934. 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, 1899–1934

[For basins included, see p. 6]

Year	1	2	3	4	5	6	7	8	9	10	11	12–A	12–B	12–C
1899[1]	35	[2] 35, 36	36	36	36	[3] 36, 37	37	37	[4] 37, 38	38, [5] 39	38, [6] 39	38	38	38
1900[7]	47, [8] 48	48	48, [9] 49	49	49	49, [10] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[11] 65, 66, 75	66, 75	[11] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[2] 82, 83	83	[12] 82, 83	[11] 83, 85	84	[11] 83, 84	84	85	85	85	85	85	85
1903	97	[2] 97, 98	98	97	[11] 98, 99, [13] 100	99	[11] 98, 99	99	100	100	100	100	100	100
1904	[14]124, [15]125, [16]126	[16] 126, 127	128	129	[11] 128, 130	130, [17] 131	[11] 128, 131	132	133	133, [18] 134	134	135	135	135
1905	[14]165, [15]166, [16]167	[16] 167, 168	169	170	171	172	[11] 169, 173	174	175, [19] 177	176, [18] 177	177	178	178	[20] 177, 178
1906	[14]201, [15]202, [16]203	[16] 203, 204	205	206	207	208	[11] 205, 209	210	211, [19] 213	212, [18] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [18] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [18] 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
1932	726	727	728	729	730	731	732	733	734	735	736	737	738	739
1933	741	742	743	744	745	746	747	748	749	750	751	752	753	754
1934	756	757	758	759	760	761	762	763	764	765	766	767	768	769

[1] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Monthly discharge for 1899 in 21st Annual Report, part 4.
[2] James River only.
[3] Gallatin River.
[4] Green and Gunnison Rivers and Colorado River above Gunnison River.
[5] Mojave River only.
[6] Kings and Kern Rivers and south Pacific slope basins.
[7] 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. Monthly discharge for 1900 in 22d Annual Report, part 4.
[8] Wissahickon and Schuylkill Rivers to James River.
[9] Scioto River.
[10] Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
[11] Tributaries of Mississippi River from east.
[12] Lake Ontario and tributaries to St. Lawrence River proper.
[13] Hudson Bay only.
[14] New England rivers only.
[15] Hudson River to Delaware River, inclusive.
[16] Susquehanna River to Yadkin River, inclusive.
[17] Platte and Kansas Rivers.
[18] The Great Basin in California, except Truckee and Carson River Basins.
[19] Below junction with Gila River.
[20] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in the several States was done under cooperative agreements as follows: In Indiana with the Department of Public Works, V. M. Simmons, administrative officer. In Michigan with the Michigan Stream Control Commission, M. D. Yan Wagoner, chairman. In Minnesota with the Division of Drainage and Waters, W. S. Olson, director. In New York with the State Conservation Department, Lithgow Osborne, commissioner; State Department of Public Works, Frederick Stuart Greene, superintendent; State Water Power and Control Commission, Lithgow Osborne, chairman; Black River Regulating District, Edwin S. Cullings, chief engineer; Commission for the Improvement of Oswegatchie River, J. E. Fell, chairman; and city of Rochester, Morgan D. Hayes, city engineer. In Ohio with the Ohio Cooperative Topographic Survey, C. E. Sherman, inspector. In Vermont with Stanley C. Wilson, governor. In Wisconsin with the Public Service Commission of Wisconsin, John C. Damon, chief engineer.

Assistance in collecting records was also rendered by the following municipalities, organizations, corporations, and individuals: In Michigan by the city of Allegan and Michigan Gas & Electric Co.; in Minnesota the Pigeon River station was maintained by funds appropriated by the United States Department of State; in New York by the Northern New York Utilities, Inc., International Paper Co., Utica Gas & Electric Co., Cornell University, Malone Light & Power Co., New York & Pennsylvania Co., Associated Gas & Electric System, Rochester Gas & Electric Corporation, and Deer River Power Co.; in Vermont by the Newport Electric Light Co.; and in Wisconsin by the Wisconsin Power & Light Co., Wisconsin Public Service Corporation, and the Corps of Engineers, United States Army.

Funds for the rehabilitation of gaging stations, repairs, replacement of equipment, and improvement of records were allocated by the Public Works Administration from funds made available by the National Industrial Recovery Act.

DIVISION OF WORK

The data for stations in the several States were collected and prepared for publication under the supervision of district engineers as follows: In Indiana and Michigan, H. E. Grosbach; in Minnesota, C. L. Batchelder; in New York, A. W. Harrington; in Ohio, Lasley Lee; in Vermont, H. B. Kinnison; and in Wisconsin, S. B. Soulé.

STREAMS TRIBUTARY TO LAKE SUPERIOR

Pigeon River at International Bridge, Minn.

Location.- Staff gage in lot 3, sec. 20, T. 64 N., R. 6 E. fourth principal meridian, 100 feet above International Bridge and 9.3 miles above mouth.

Drainage area.- 590 square miles.

Records available.- April 1924 to September 1934 in reports of U. S. Geological Survey; October 1923 to September 1932 in House Document 92, 73d Congress, 1st Session; June 1921 to September 1923 in reports of the Dominion Water Power and Hydrometric Bureau, Department of the Interior, Canada.

Average discharge.- 11 years (1923-34), 458 second-feet.

Extremes.- Maximum discharge during year, 11,000 second-feet May 6 (gage height, 7.6 feet); minimum, 96 second-feet Sept. 13-23 (gage height, 0.55 foot).
1923-34: Maximum discharge, that of May 6, 1934; minimum (published in House Document 92), 35 second-feet Mar. 11-15, 1924.

Remarks.- Records good except those for period of ice effect, Nov. 13 to Apr. 24, and those for days when discharge exceeds 2,000 second-feet, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	585	230	170	158	155	170	2,900	1,380	1,080	148	136
2	300	640	230	170	158	185	170	4,020	1,380	1,000	162	136
3	265	695	230	170	158	185	170	6,420	1,220	850	162	148
4	265	752	265	170	158	185	170	8,800	1,080	650	162	148
5	265	752	230	170	158	185	200	10,700	850	370	162	148
6	230	640	230	170	155	155	200	8,080	850	322	148	136
7	230	533	230	158	156	185	265	5,120	1,380	300	148	125
8	200	482	230	158	158	145	300	3,710	1,220	279	125	104
9	200	388	230	158	158	145	435	3,020	1,220	279	125	104
10	200	388	200	158	158	145	482	2,450	1,220	260	114	104
11	230	533	200	158	145	120	482	2,130	1,220	279	114	104
12	230	640	200	170	145	98	533	1,930	1,220	240	114	104
13	230	482	230	170	138	105	640	2,130	1,930	223	114	96
14	230	388	200	170	132	98	695	2,340	1,460	206	114	96
15	300	342	200	170	158	109	695	2,240	1,300	206	114	96
16	640	265	200	170	158	109	640	2,130	1,220	206	114	96
17	752	230	230	170	158	109	640	1,930	1,150	206	134	96
18	752	215	200	158	158	109	533	1,730	1,080	206	134	96
19	695	230	230	158	158	132	585	1,640	715	206	136	96
20	812	230	200	158	145	120	585	1,550	1,220	206	136	96
21	752	230	170	145	145	120	585	1,550	1,460	206	136	96
22	695	200	170	145	145	120	585	1,380	1,220	191	136	96
23	585	230	170	145	145	120	640	1,300	1,640	191	125	96
24	482	230	170	145	145	120	940	1,220	1,550	176	125	322
25	482	230	170	132	145	120	1,220	1,150	1,550	162	125	530
26	388	230	155	132	145	120	1,080	1,080	1,460	162	114	650
27	300	265	158	132	145	145	1,080	2,130	1,380	148	114	715
28	300	200	158	145	145	158	1,080	1,460	1,300	148	114	590
29	388	200	185	145		170	1,300	1,300	1,220	136	114	370
30	435	230	170	158		170	1,930	1,380	1,150	136	114	322
31	533		170	158		170		1,380		136	114	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	812	200	409	0.693	0.80
November	752	200	388	.658	.73
December	265	158	201	.341	.39
January	170	132	158	.268	.31
February	158	132	151	.256	.27
March	185	98	140	.237	.27
April	1,930	170	634	1.07	1.19
May	10,700	1,080	2,913	4.94	5.70
June	1,930	715	1,275	2.16	2.41
July	1,080	136	302	.512	.59
August	162	114	129	.219	.25
September	715	96	202	.342	.38
The year	10,700	96	578	.980	13.29

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Poplar River at Lutsen, Minn.

Location.- Chain gage in sec. 33, T. 60 N., R. 3 W., on old highway bridge about 1,500 feet above mouth and about 200 feet above new concrete bridge on U. S. highway 61 at Lutsen. Zero of gage is 690.99 feet above mean sea level.
In 1911 a gage about 400 feet above mouth was used; from 1912 to 1917 gage about 700 feet above mouth was used; relation between gage datums not determined.

Drainage area.- 138 square miles.

Records available.- May to November 1911 (gage heights only), August 1912 to September 1917, July 1928 to February 1929, March 1930 to September 1934.

Extremes.- Maximum discharge during year 1933-34, 1,280 second-feet May 6,7 (gage height, 8.31 feet); minimum, 8.3 second-feet Aug. 13, 17 (gage height, 2.41 feet).
1912-17, 1928-34: Maximum discharge, 1,390 second-feet Apr. 25, 1916 (gage height, 4.7 feet, old datum); minimum, 8.3 second-feet Aug. 13, 17, 1934.

Remarks.- Records fair. Base data for 1928-33 furnished by U. S. Army Engineers; discharge computations made by U. S. Geological Survey. No record Mar. 1, 1929, to Feb. 28, 1930, and Dec. 15, 1932, to Aug. 3, 1933. Stage-discharge relation affected by ice Nov. 25, 1928, to Feb. 28, 1929; Nov. 29, 1929, to Dec. 10, 1930; Dec. 16, 1930, to Jan. 3, 1931; Jan. 12-18, 1931; Nov. 21-28, 1931; Dec. 6-18, 1931; Jan. 9-18, 1932; Jan. 29 to Feb. 4, 1932; Feb. 8-10, 13-24, 1932; Mar. 1-4, 7-9, 1932; Nov. 14, 15, 1932; Dec. 9-14, 1932; Nov. 10-23, 1933: Dec. 6, 1933, Jan. 8 to Apr. 12, 1934; and by debris on control Oct. 1 to Nov. 23, 1928; Aug. 3 to Sept. 11, 1930; June 25 to Sept. 25, 1931; Aug. 4 to Sept. 2, 1933. Discharge estimated Mar. 1-5, 1930.

Discharge, in second-feet, 1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											116	179
2											111	183
3											97	210
4											99	201
5											99	174
6											94	153
7											90	130
8											84	121
9											83	294
10											77	342
11											72	344
12											72	344
13											69	250
14											82	241
15											136	477
16											126	594
17										170	104	347
18										170	103	339
19										169	93	269
20										128	91	237
21										144	83	220
22										157	75	232
23										144	76	235
24										132	75	241
25										117	70	235
26										156	68	185
27										128	76	158
28										111	183	158
29										104	183	159
30										102	197	156
31										126	192	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March					
April					
May					
June					
July 17-31	170	102	137	0.993	0.55
August	197	68	102	.739	.85
September	594	121	247	1.79	2.00
The year					

Bear River at Harer, Idaho

Location.- Water-stage recorder in NE¼ sec. 22, T. 14 S., R. 45 E., half a mile below mouth of Sheep Creek, three-quarters of a mile north of Harer siding on Oregon Short Line Railroad, and 6 miles east of Dingle.

Drainage area.- 2,780 square miles.

Records available.- June 1913 to September 1916, January 1919 to September 1934.

Average discharge.- 18 years, 560 second-feet.

Extremes.- Maximum discharge during year occurred during winter, not recorded; minimum mean daily discharge, 26 second-feet Aug. 21-27.
1913-16, 1919-34: Maximum discharge, 3,860 second-feet June 2, 1920 (gage height, 10.51 feet); minimum, that of Aug. 21-27, 1934.

Remarks.- Records good except those for Nov. 27 to Mar. 1, which were estimated. Numerous diversions for irrigation above station. Records collected by Utah Power & Light Co., under general supervision of Geological Survey in connection with a Federal Power Commission project.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	178	120	150	160	180	138	54	50	41	40	42
2	166	168	120	150	160	186	145	52	49	40	39	41
3	166	168	120	150	160	186	138	52	50	38	38	41
4	162	170	120	150	170	192	131	52	49	38	37	40
5	162	170	125	150	180	192	128	51	48	38	38	39
6	162	166	125	140	190	199	126	50	48	37	39	39
7	162	158	125	130	190	208	114	49	49	37	40	39
8	162	166	130	130	190	202	110	46	50	37	40	42
9	162	162	135	130	190	197	114	44	51	36	40	44
10	162	166	140	130	190	197	112	42	51	36	39	44
11	162	166	140	130	190	199	106	42	51	37	39	44
12	162	166	145	130	180	199	108	42	52	37	41	46
13	162	168	150	140	180	202	110	40	52	37	40	52
14	162	166	150	140	170	205	114	39	51	36	39	52
15	162	164	150	150	170	205	116	39	51	33	37	50
16	162	162	140	150	180	202	114	40	51	29	37	51
17	162	162	130	150	190	202	110	41	51	38	37	50
18	162	162	130	150	200	199	106	41	51	41	36	49
19	173	162	130	150	210	189	99	44	50	40	34	49
20	178	166	130	150	210	186	92	45	48	39	30	50
21	178	166	135	150	210	184	80	43	46	40	26	50
22	173	168	135	150	210	176	76	42	44	41	26	54
23	173	175	140	150	210	176	74	46	44	42	26	55
24	173	170	140	150	200	168	71	52	44	42	26	54
25	180	170	140	160	200	163	68	49	44	42	26	49
26	185	168	140	160	190	145	59	46	45	43	26	49
27	195	155	140	160	180	136	56	46	44	43	26	49
28	185	145	140	150	180	133	56	46	44	44	29	49
29	185	140	140	150		133	54	46	44	42	48	49
30	185	125	140	150		128	54	48	42	40	52	49
31	182		140	150		138		49		40	46	49

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	185	162	170	10,440
November	178	125	163	9,720
December	150	120	135	8,300
January	160	130	146	8,990
February	210	130	187	10,390
March	208	128	181	11,120
April	145	54	99.3	5,910
May	54	39	45.7	2,810
June	52	42	48.1	2,860
July	44	29	38.8	2,390
August	52	26	36.0	2,220
September	55	39	47.0	2,800
The year	210	26	108	77,950

Poplar River at Lutsen, Minn.

(Continued)

Discharge, in second-feet, 1930

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							28	257	126	133	52	30
2							31	308	125	115	50	30
3						20	43	252	126	100	73	28
4							52	232	133	99	57	30
5							112	205	151	88	50	28
6						28	147	257	159	80	45	27
7						30	107	460	131	77	44	26
8						32	109	981	125	73	42	26
9						30	112	1,090	118	78	36	25
10						28	147	762	111	90	31	26
11						28	170	740	99	90	28	26
12						26	228	494	103	241	27	105
13						25	239	500	120	241	25	107
14						22	259	452	220	224	25	94
15						25	202	318	220	139	25	76
16						28	177	306	212	150	38	76
17						28	139	285	167	257	22	64
18						28	235	274	140	121	20	60
19						26	235	271	126	150	20	55
20						25	208	250	107	189	18	52
21						24	195	239	95	230	18	48
22						23	181	220	95	226	17	45
23						25	150	197	95	122	17	45
24						26	139	183	97	77	22	43
25						29	137	179	87	77	24	35
26						28	127	151	96	71	24	62
27						28	121	145	201	70	22	102
28						28	122	137	142	65	23	90
29						26	145	130	190	59	26	72
30						26	177	127	154	56	28	67
31						26		126		55	28	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March	32		25.7	0.186	0.21
April	259	28	149	1.08	1.20
May	1,090	126	340	2.46	2.84
June	220	87	136	.986	1.10
July	257	55	124	.899	1.04
August	73	17	31.5	.228	.26
September	107	25	53.3	.386	.43
The year					

Poplar River at Lutsen, Minn.

(Continued)

Discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	59	174	90	59	49	48	54	102	60	19	12
2	69	64	174	89	60	50	49	52	98	54	21	11
3	81	62	165	88	59	47	54	52	83	*54	20	16
4	71	61	158	87	58	46	59	52	100	*53	20	16
5	66	60	158	84	57	47	62	52	101	53	18	14
6	74	92	150	82	57	44	65	52	100	52	16	14
7	96	99	149	80	56	43	94	66	96	52	14	13
8	130	59	149	79	55	43	99	66	96	50	14	11
9	230	57	148	77	54	43	140	83	76	48	14	11
10	172	56	147	76	54	42	138	102	69	48	12	10
11	139	55	145	73	53	43	121	159	105	40	12	9
12	118	54	148	70	52	43	98	143	259	46	12	8
13	105	54	142	66	51	43	95	112	283	46	10	28
14	96	52	139	67	49	43	94	97	233	46	9	28
15	90	94	139	63	49	43	91	89	185	43	9	21
16	145	257	132	62	49	43	97	83	139	41	8	17
17	127	383	126	62	49	43	91	72	216	40	8	16
18	133	283	124	62	49	43	92	72	287	40	7	16
19	118	276	121	61	48	43	94	69	259	39	7	17
20	105	675	117	59	48	43	93	72	167	38	7	62
21	92	939	114	58	49	43	90	74	130	35	7	63
22	88	678	110	58	49	43	89	76	119	29	12	47
23	81	740	107	58	48	45	86	79	115	27	14	44
24	78	678	104	58	50	47	84	83	109	26	14	36
25	77	615	103	58	50	47	82	83	102	24	13	69
26	76	503	101	58	47	48	77	81	90	24	11	176
27	74	415	100	58	48	48	69	209	84	24	9	103
28	91	243	97	59	49	48	59	212	73	26	20	83
29	99	201	95	59		47	57	167	71	21	15	69
30	71	183	93	59		47	55	146	62	20	14	66
31	62		90	58		48		116		19	14	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	230	59	100	0.725	0.84
November	939	52	268	1.94	2.16
December	174	90	130	.942	1.09
January	90	58	68.3	.495	.57
February	60	47	52.0	.377	.39
March	50	42	45.0	.326	.38
April	140	48	84.1	.609	.68
May	212	52	94.4	.684	.79
June	287	62	134	.971	1.08
July	60	19	39.3	.285	.33
August	21	7	12.9	.093	.11
September	176	8	36.8	.267	.30
The year	939	7	88.6	.642	8.72

*Interpolated.

Poplar River at Lutsen, Minn.

(Continued)

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	96	123	71	51	51	42	494	210	76	77	131
2	52	91	118	69	50	50	42	500	169	76	74	91
3	46	80	114	69	48	48	42	477	167	83	74	52
4	96	71	110	69	47	46	42	415	159	87	74	51
5	80	68	105	68	46	47	43	344	153	85	71	51
6	75	62	102	67	46	48	44	344	149	80	69	47
7	60	53	100	66	44	48	73	399	144	91	57	42
8	60	51	96	69	47	48	102	483	133	91	53	40
9	59	49	95	69	49	48	245	588	120	79	49	40
10	59	58	93	69	51	48	252	612	107	83	49	40
11	51	59	91	69	54	47	205	500	97	100	47	39
12	47	60	90	67	54	47	159	438	95	127	44	38
13	42	60	90	67	52	48	159	396	94	138	42	37
14	41	59	89	66	51	46	164	385	114	132	39	37
15	40	77	88	66	51	46	178	399	142	125	37	37
16	39	109	86	66	51	50	233	523	131	105	37	36
17	37	120	84	66	50	50	245	534	110	99	38	35
18	35	131	84	65	50	50	261	546	125	91	38	35
19	34	155	83	64	49	49	318	421	133	85	35	35
20	34	224	86	66	49	48	325	334	117	84	33	35
21	32	325	87	71	48	46	342	267	102	82	32	35
22	32	254	89	70	48	44	349	254	88	80	32	33
23	31	250	83	69	48	43	325	228	83	75	34	32
24	57	363	76	64	48	42	322	228	100	72	42	32
25	52	261	76	60	48	42	318	274	96	72	43	30
26	50	170	76	56	48	42	306	370	88	85	42	31
27	160	150	76	55	46	42	292	366	86	91	41	33
28	258	146	76	57	46	42	292	272	74	115	37	33
29	216	145	75	55	48	42	283	259	69	98	38	33
30	143	137	73	54		42	318	228	66	82	51	33
31	109		72	52		42		212		80	110	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	258	31	70.5	0.511	0.59
November	363	49	131	.949	1.06
December	123	72	89.9	.651	.75
January	71	52	64.9	.470	.54
February	54	44	48.9	.354	.38
March	51	42	46.3	.336	.39
April	349	42	211	1.53	1.71
May	612	212	390	2.83	3.26
June	210	66	117	.848	.95
July	138	72	91.9	.666	.77
August	110	32	49.6	.359	.41
September	131	30	42.5	.308	.34
The year	612	30	113	.819	11.15

Poplar River at Lutsen, Minn.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	82	123									*13
2	34	73	118									14
3	34	76	112									*55
4	34	83	110								10	96
5	33	91	108								17	*104
6	33	88	105								*16	111
7	34	90	102								16	*96
8	34	342	100								*16	*80
9	34	884	99								*16	64
10	34	1,080	97								*16	*60
11	33	1,080	95								*16	57
12	33	932	94								*16	*48
13	34	823	93								*16	40
14	34	728	92								*16	*41
15	41	327									*16	*41
16	41	218									*16	42
17	42	178									*16	172
18	42	181									16	*151
19	49	167									15	*131
20	152	164									*14	110
21	146	159									14	*99
22	118	140									*14	*88
23	243	144									13	77
24	224	146									*13	*80
25	220	142									*12	82
26	254	137									12	*78
27	139	124									*13	74
28	103	118									14	*77
29	100	122									*12	*80
30	100	115									11	83
31	94										*12	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	254	33	83.2	0.603	0.70
November	1,080	73	301	2.18	2.43
December 1-14	123	92	103	.746	.39
January					
February					
March					
April					
May					
June					
July					
August 4-31	17	10	14.4	.104	.11
September	172	13	78.1	.566	.63
The year					

*Interpolated.

Poplar River at Lutsen, Minn.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	120	85	68	51	36	38	925	129	76	36	30
2	77	136	84	66	50	36	38	995	124	73	40	39
3	62	156	83	64	50	37	38	1,170	113	68	36	47
4	66	146	83	64	49	38	41	1,240	108	68	35	46
5	64	106	82	64	50	41	45	1,240	104	64	29	42
6	60	94	97	64	48	42	55	1,280	113	64	26	43
7	60	92	99	64	48	43	68	1,280	118	60	22	34
8	55	90	100	62	48	44	74	1,280	118	56	17	28
9	54	95	100	63	48	44	98	1,280	124	56	13	23
10	52	92	97	63	47	44	110	1,240	124	56	12	23
11	50	95	87	63	46	44	107	1,100	124	49	11	25
12	48	100	85	61	45	43	112	1,060	124	52	8.6	27
13	48	105	75	60	44	42	97	1,030	108	46	8.3	26
14	46	111	75	60	42	41	78	700	104	43	10	25
15	40	106	75	59	42	40	79	522	99	42	10	28
16	61	100	75	59	42	39	83	496	94	40	9.5	27
17	95	94	75	59	40	38	94	445	99	40	8.3	26
18	104	76	75	60	40	36	100	397	94	36	21	23
19	123	73	75	58	40	36	104	331	94	35	26	24
20	120	74	74	57	40	36	104	293	94	35	24	21
21	120	76	74	54	39	36	103	293	94	33	26	20
22	106	76	73	55	38	36	103	293	94	32	24	18
23	101	73	73	54	38	36	113	274	94	31	21	17
24	90	85	72	55	36	37	139	255	94	31	19	94
25	87	83	72	54	36	38	156	217	90	30	16	129
26	88	85	72	54	36	38	252	200	94	29	16	118
27	84	87	72	54	36	38	267	183	86	28	16	99
28	80	90	70	54	36	38	274	175	82	28	15	90
29	88	88	69	52		38	287	175	82	30	15	78
30	101	86	69	52		38	669	160	78	30	16	73
31	112		69	52		38		160		30	23	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	123	40	78.2	0.567	0.65
November	156	73	96.3	.698	.78
December	100	69	79.5	.576	.66
January	68	52	59.0	.428	.49
February	51	36	43.0	.312	.32
March	44	36	39.1	.283	.33
April	669	38	131	.949	1.06
May	1,280	160	667	4.83	5.57
June	129	78	103	.746	.83
July	78	28	44.9	.325	.37
August	40	8.3	19.7	.143	.16
September	129	17	44.8	.325	.36
The year	1,280	8.3	118	.855	11.58

Baptism River near Beaver Bay, Minn.

Location.- Staff gage in sec. 15, T. 56 N., R. 7 W., about 260 feet above highway bridge 6 miles northeast of Beaver Bay. Zero of gage is 609.97 feet above mean sea level.

Drainage area.- 136 square miles.

Records available.- July 1928 to January 1929, March 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 1933-34, 1,010 second-feet Apr. 30 and May 2 (gage height, 4.27 feet); minimum, 1.5 second-feet Aug. 13 (gage height, 1.50 feet).

1928-29, 1930-34: Maximum discharge, 3,350 second-feet Nov. 10, 1932 (gage height, 6.00 feet); minimum, that of Aug. 18, 1934.

Remarks.- Records fair prior to Feb. 1, 1933, and poor thereafter, owing to infrequency of gage readings. No record Feb. 1, 1929, to Feb. 28, 1930. Stage-discharge relation affected by ice Nov. 26, 1928, to Jan. 31, 1929; Dec. 5-14, 1930; Dec. 5 to Apr. 6, 1932; Nov. 8-11, 1932; Nov. 15, 1933, to Apr. 11, 1934; and affected by slight shift Mar. 11-22, 1933. Gage read once daily prior to Feb. 1, 1933, and three times a week thereafter; discharge interpolated on days of no gage readings. Records furnished by U. S. Army Engineers July 1928 to January 1929 and March 1930 to September 1933. A few revisions were made by Geological Survey based on additional data.

Discharge, in second-feet, 1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											137	395
2											112	310
3											98	250
4											88	213
5											73	174
6											65	112
7											102	112
8											88	98
9											83	92
10											55	96
11											46	538
12											40	425
13										213	33	365
14										170	47	580
15										125	495	1,340
16										114	580	1,060
17										92	580	680
18										92	332	495
19										94	260	365
20										112	237	305
21										125	192	310
22										174	150	495
23										112	112	495
24										108	112	432
25										83	88	337
26										560	92	310
27										425	96	285
28										315	790	260
29										275	790	213
30										112	790	213
31										170	580	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March					
April					
May					
June					
July 13-31	580	83	183	1.35	0.95
August	790	33	237	1.74	2.01
September	1,340	92	378	2.78	3.10
* The year.					

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1928-29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	192	170	45	20								
2	170	170	42	19								
3	154	153	37	18								
4	137	112	36	18								
5	285	112	35	17								
6	337	124	34	19								*8.4
7	310	112	35	19								
8	285	112	35	18								
9	237	102	33	20								
10	213	102	31	23								
11	192	102	32	28								
12	213	102	35	34								
13	237	102	35	28								
14	213	112	46	28								
15	365	260	57	28								
16	425	285	60	23								
17	337	213	55	19								
18	285	192	45	15								
19	260	170	37	19								
20	237	153	32	19								
21	260	137	29	27								
22	337	112	27	25								
23	337	112	27	24								
24	285	102	27	19								
25	260	73	28	18								
26	237	92	29	18								
27	213	86	29	18								
28	213	71	28	18								
29	192	57	23	16								
30	192	46	22	17								
31	170		21	17								

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	425	137	251	1.85	2.13
November	285	46	128	.941	1.05
December	60	21	35.1	.258	.30
January	34	16	21.0	.154	.18
February					
March					
April					
May					
June					
July					
August					
September					
The year					

*Current meter measurement.

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1930

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							37	365	260	260	57	18
2							57	310	213	213	46	18
3							365	260	213	213	46	14
4						20	425	260	213	170	37	12
5							680	365	310	170	26	13
6							680	365	310	137	23	14
7						21	790	1,340	260	112	20	13
8						22	790	1,340	213	112	18	10
9						23	680	1,060	213	137	14	11
10						23	735	790	192	365	14	16
11						23	790	680	170	495	13	20
12						26	790	790	170	925	13	137
13						23	790	680	425	790	12	170
14						23	680	680	365	580	12	213
15						23	495	580	260	365	11	154
16						23	425	495	213	365	11	112
17						23	337	425	170	260	11	92
18						23	425	365	213	260	10	83
19						23	495	310	170	213	10	51
20						23	425	260	137	213	9	42
21						23	395	213	112	170	9	33
22						23	365	213	260	137	8	29
23						23	310	213	425	112	7	23
24						20	260	170	310	213	7	26
25						23	213	137	260	260	6	23
26						23	213	260	790	365	6	37
27						23	170	735	580	310	6	137
28						23	170	735	425	213	7	137
29						23	213	580	425	137	9	112
30						26	310	425	365	112	9	92
31						29		310		73	10	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March	29	20	22.6	0.166	0.19
April	790	37	450	3.31	3.69
May	1,340	137	507	3.73	4.30
June	790	112	288	2.12	2.36
July	930	73	273	2.01	2.32
August	57	6	16.0	.118	.14
September	213	10	62.1	.457	.51
The year					

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1930-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	104	108	45	14	22	30	88	310	50	29	7
2	82	70	104	43	15	23	45	86	260	37	18	7
3	82	56	98	42	16	22	56	86	213	34	14	6
4	73	55	92	39	18	20	58	84	204	28	12	10
5	81	45	86	30	20	18	88	96	179	35	10	9
6	65	55	83	35	19	18	92	122	163	34	9	8
7	108	79	81	33	18	18	137	127	124	33	9	7
8	182	57	77	31	18	19	204	117	117	28	17	7
9	170	46	75	33	18	20	275	137	108	27	15	7
10	137	43	73	32	18	18	295	580	104	23	12	6
11	119	36	71	29	17	16	305	680	251	22	10	5
12	102	37	70	29	17	16	255	520	520	42	9	5
13	98	42	70	28	17	15	178	481	600	31	8	5
14	76	39	68	28	16	15	174	337	563	33	8	6
15	79	201	67	27	15	16	170	300	338	32	8	9
16	213	355	65	26	14	15	167	285	251	28	7	9
17	227	560	63	24	16	16	183	213	529	23	6	9
18	205	520	62	17	16	16	170	196	495	19	6	9
19	183	419	61	22	16	17	209	183	236	13	6	8
20	120	1,270	57	21	17	17	213	170	222	12	6	42
21	137	1,410	56	19	17	18	222	183	213	12	5	63
22	120	979	56	18	17	21	251	204	204	11	5	41
23	88	660	55	17	18	24	213	187	251	10	6	31
24	79	474	54	17	18	34	196	213	257	10	7	27
25	71	439	54	17	21	38	170	222	163	9	6	73
26	71	383	53	16	21	39	137	204	154	8	6	332
27	79	365	49	15	21	30	125	425	127	8	6	241
28	92	260	48	14	22	23	112	1,060	108	8	12	163
29	94	157	48	13		23	104	680	86	6	10	112
30	92	112	48	12		25	92	495	62	5	8	84
31	92		46	13		28		425		4	7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	227	62	113	0.831	0.96
November	1,410	36	315	2.32	2.59
December	108	46	67.7	.498	.57
January	45	12	25.3	.186	.21
February	22	14	17.5	.129	.13
March	39	15	21.3	.157	.18
April	305	30	164	1.21	1.35
May	1,060	84	296	2.18	2.51
June	600	62	247	1.82	2.03
July	50	4	21.8	.160	.18
August	29	5	9.58	.070	.08
September	332	5	44.9	.330	.37
The year	1,410	4	112	.824	11.16

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	213	196	48	31	77	34	425	241	42	53	563
2	44	187	187	46	29	73	35	365	187	46	46	310
3	35	163	170	48	29	55	32	354	163	41	44	251
4	112	137	163	46	28	53	34	343	157	34	32	137
5	92	127	137	46	27	53	35	332	137	29	28	73
6	88	104	127	44	25	55	41	546	112	50	27	57
7	127	92	100	44	25	57	389	580	92	46	18	46
8	150	84	96	44	24	55	481	680	73	42	16	42
9	132	77	112	46	24	50	580	660	57	35	16	34
10	88	108	96	47	28	48	600	563	48	28	14	28
11	84	104	92	47	28	50	680	425	44	23	13	22
12	63	96	88	48	27	48	680	413	42	21	11	21
13	57	104	96	63	27	46	660	343	37	44	10	29
14	53	127	100	57	27	44	660	300	35	29	10	28
15	46	170	100	55	25	42	790	332	46	28	9	27
16	42	170	100	53	25	46	844	401	37	27	9	22
17	39	365	92	46	25	46	898	425	35	23	9	21
18	35	310	88	44	24	44	898	401	42	22	8	20
19	32	260	77	44	24	46	871	332	44	92	8	22
20	29	413	60	42	23	44	817	300	37	137	7	22
21	28	1,340	60	41	24	41	790	260	35	112	7	21
22	35	925	67	41	23	39	790	213	29	108	7	20
23	48	898	77	39	23	37	735	204	23	57	7	20
24	77	925	73	37	22	35	580	196	28	53	7	17
25	67	680	55	35	22	27	563	170	57	37	8	16
26	57	640	55	35	24	28	425	163	50	39	29	15
27	389	481	57	35	28	28	365	343	37	34	92	15
28	425	365	55	34	35	29	332	425	32	137	60	14
29	413	321	57	34	81	31	321	365	28	112	112	14
30	365	260	53	32		32	389	300	35	73	1,410	13
31	300		50	32		32		251		55	871	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	425	28	116	0.853	0.98
November	1,340	77	342	2.51	2.80
December	196	50	94.7	.696	.80
January	63	32	43.6	.321	.37
February	81	22	27.8	.204	.22
March	77	27	44.9	.330	.38
April	898	32	512	3.76	4.20
May	680	163	368	2.71	3.12
June	241	23	67.3	.495	.55
July	137	21	53.4	.393	.45
August	1,410	7	96.7	.711	.82
September	563	13	64.7	.476	.53
The year	1,410	7	152	1.12	15.22

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	137	115	39	21	35	365	720	231	13	8	6
2	12	92	110	37	21	28	386	615	270	12	7	7
3	13	88	105	35	20	22	407	510	310	11	7	5
4	12	170	96	34	20	16	324	447	267	10	6	3
5	12	196	91	34	20	16	242	384	224	9	6	3
6	13	204	88	32	19	16	190	321	193	10	6	3
7	13	260	85	32	18	16	139	290	162	12	5	23
8	21	1,200	79	31	18	15	88	260	174	14	6	44
9	22	2,600	76	31	17	15	75	234	187	34	6	64
10	21	3,350	76	29	16	14	62	207	199	54	7	50
11	20	1,620	74	29	16	14	64	283	154	50	9	35
12	21	830	71	29	14	14	66	359	110	46	10	28
13	20	720	71	28	12	14	74	435	87	41	10	22
14	20	550	69	27	10	14	81	435	64	37	9	45
15	23	365	69	25	9	14	88	435	90	32	8	68
16	27	332	66	24	9	13	184	372	117	26	6	91
17	29	256	62	22	8	12	280	310	143	20	7	82
18	34	215	54	21	8	11	675	290	112	16	8	74
19	48	191	52	21	8	14	1,070	271	82	13	6	124
20	196	175	50	20	8	14	1,110	251	68	20	6	175
21	204	169	48	20	8	14	1,160	229	54	26	5	137
22	187	162	48	19	7	14	1,200	207	48	32	4	98
23	196	162	46	19	7	14	1,140	234	41	37	4	80
24	260	169	45	20	6	15	1,070	260	34	42	4	53
25	204	175	48	20	6	16	840	245	30	34	4	46
26	187	143	46	20	25	18	610	230	27	25	4	104
27	150	162	46	21	44	21	528	215	23	21	4	162
28	144	143	42	21	40	22	446	203	19	17	4	131
29	137	156	40	20		22	365	191	17	13	4	100
30	117	137	39	20		136	542	191	15	11	4	69
31	132		39	20		250		191		9	5	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	260	12	80.9	0.595	0.69
November	3,350	88	504	3.71	4.14
December	115	39	66.0	.485	.56
January	39	19	25.8	.190	.22
February	44	6	15.5	.114	.12
March	250	11	28.0	.206	.24
April	1,200	62	462	3.40	3.79
May	720	191	317	2.33	2.69
June	310	15	118	.868	.97
July	54	9	24.1	.177	.20
August	10	4	6.1	.045	.05
September	175	3	63.7	.468	.52
The year	3,350	3	142	1.04	14.19

Baptism River near Beaver Bay, Minn.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	195	43	33	30	17	24	1,010	55	21	4	12
2	49	209	41	32	29	23	26	1,010	49	18	4	16
3	45	224	53	32	29	39	30	932	48	16	3	20
4	41	238	65	32	30	41	34	853	47	14	3	20
5	39	205	66	32	32	53	89	775	54	13	3	19
6	36	172	68	32	30	59	144	652	61	12	3	16
7	34	135	60	31	28	47	199	530	64	11	2	14
8	28	98	53	30	26	42	207	451	67	12	2	11
9	22	90	45	30	25	38	215	372	70	12	2	9
10	21	83	40	30	23	33	248	336	69	11	2	7
11	20	75	36	31	23	32	280	300	68	10	2	6
12	19	65	34	31	23	32	294	265	63	9	2	6
13	19	55	33	32	22	31	307	376	98	7	2	6
14	18	59	35	31	22	30	321	488	85	6	2	7
15	79	63	38	32	21	30	350	407	72	6	2	7
16	140	59	40	31	21	30	379	326	59	5	2	7
17	189	56	39	30	20	30	400	282	57	4	2	7
18	238	52	38	30	20	30	421	239	55	4	2	7
19	221	50	38	29	19	29	433	195	50	4	2	7
20	204	47	38	29	19	29	446	187	45	4	2	7
21	187	50	38	30	19	29	458	179	42	4	2	7
22	170	53	38	32	18	28	480	162	38	4	2	7
23	153	51	38	44	17	26	502	146	34	3	2	14
24	118	49	37	57	16	25	521	121	33	2	3	21
25	84	47	36	51	14	24	540	95	32	2	3	105
26	78	49	34	44	13	22	574	70	33	2	2	85
27	73	51	33	38	12	22	609	72	34	2	2	76
28	68	49	32	36	11	21	643	75	30	2	2	71
29	73	47	31	33		21	826	68	27	4	3	62
30	78	45	30	32		21	1,010	62	24	5	6	53
31	136		32	30		21		58		4	9	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	238	18	88.4	0.650	0.75
November	238	45	90.7	.667	.74
December	68	30	41.4	.304	.35
January	57	29	33.8	.249	.29
February	32	11	21.9	.161	.17
March	53	17	30.2	.222	.26
April	1,010	24	367	2.70	3.01
May	1,010	58	358	2.63	3.03
June	98	24	52.8	.388	.43
July	21	2	7.5	.055	.06
August	9	2	2.7	.020	.02
September	105	6	23.7	.174	.19
The year	1,010	2	93.3	.686	9.30

Tahquamenon River at Newberry, Mich.

Location.- Staff gage at highway bridge between sec. 23 and 24, T. 46 N., R. 10 W., three-quarters of a mile north of Newberry.

Drainage area.- 200 square miles.

Records available.- August and September 1934.

Extremes.- Maximum discharge recorded during year, 263 second-feet Sept. 24 (gage height, 9.91 feet); minimum, 78 second-feet Aug. 14 (gage height, 8.22 feet).

Remarks.- Records good. Stage-discharge relation affected by aquatic growth during entire period.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												132
2												132
3												132
4												152
5												162
6												173
7												184
8												195
9												206
10											86	206
11											86	206
12											82	206
13											82	206
14											78	206
15											82	206
16											82	217
17											86	228
18											86	228
19											86	239
20											90	239
21											90	251
22											108	263
23											113	263
24											132	263
25											152	263
26											152	263
27											152	263
28											152	251
29											152	239
30											152	228
31											142	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March					
April					
May					
June					
July					
August 10-31	152	78	110	0.550	0.45
September	263	132	213	1.06	1.18
The year					

Menominee River at Twin Falls, near Iron Mountain, Mich.

Location.- In sec. 12, T. 40 N., R. 31 W., at power plant of Wisconsin-Michigan Power Co., 3 miles above mouth of Pine River and 3½ miles north of Iron Mountain.

Drainage area.- 1,790 square miles.

Records available.- January 1914 to September 1934.

Average discharge.- 20 years, 1,723 second-feet.

Extremes.- Maximum daily discharge during year, 10,000 second-feet May 3, 4; minimum, 442 second-feet Aug. 20.
1914-34: Maximum daily discharge, 16,700 second-feet Apr. 23, 24, 1916; minimum, 154 second-feet Aug. 9, 1925.

Remarks.- Records good. Discharge determined from power-house records. Besides regulation by power plant at which station is located, flow is regulated by a plant on Brule River about 5 miles above station, where drainage area is 58 percent of that at station. Records of daily discharge furnished by Wisconsin-Michigan Power Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	945	1,060	888	777	1,000	764	877	7,900	1,480	981	681	651
2	915	1,290	903	854	905	723	793	9,560	1,320	920	807	892
3	840	1,370	868	895	822	733	989	10,000	1,100	883	824	849
4	839	1,410	1,150	990	854	788	1,180	10,000	1,060	884	797	1,840
5	737	1,460	1,210	1,110	743	756	1,320	9,540	1,100	892	833	1,630
6	699	1,420	1,350	1,130	795	799	1,760	8,830	1,100	900	742	1,340
7	625	1,200	1,230	1,020	798	848	1,930	8,230	1,290	892	722	1,020
8	770	1,060	1,330	925	785	899	1,770	7,210	1,610	850	697	983
9	716	1,050	1,100	934	936	920	2,110	6,960	1,750	881	695	811
10	715	1,030	1,090	879	960	929	2,330	6,760	1,420	849	645	845
11	680	862	1,060	851	969	971	2,450	3,820	1,420	886	591	906
12	788	975	1,000	791	983	914	2,510	5,010	1,680	991	549	953
13	851	950	889	805	896	960	2,530	4,410	1,750	999	489	1,040
14	713	932	865	835	851	933	2,510	4,290	1,700	939	481	1,000
15	856	828	872	887	859	906	2,440	3,860	1,590	959	515	1,200
16	850	757	853	901	784	931	2,360	4,040	1,240	902	492	1,430
17	767	709	959	906	830	853	2,530	4,020	1,110	860	480	1,350
18	786	706	840	907	914	895	2,500	3,670	1,140	874	484	1,380
19	929	749	836	892	829	834	2,900	3,100	1,230	881	503	1,520
20	1,220	926	976	883	849	818	3,560	2,450	1,180	872	442	1,870
21	1,350	1,100	1,040	969	899	847	3,710	2,460	1,120	836	472	2,100
22	1,010	1,170	1,130	938	881	841	3,840	2,720	1,170	808	516	2,090
23	969	1,220	1,100	1,060	853	809	4,180	2,580	1,260	718	577	1,860
24	935	1,200	1,070	1,040	820	816	4,170	2,320	1,100	675	859	1,880
25	897	1,100	857	1,070	918	829	4,010	1,900	1,160	606	784	2,030
26	919	1,110	893	1,130	768	858	3,670	1,810	1,130	498	759	2,470
27	945	1,050	782	1,200	789	858	3,890	1,750	1,110	712	712	3,040
28	873	970	827	1,190	738	838	4,240	1,680	1,000	524	712	3,420
29	949	961	774	1,120		847	4,500	1,640	1,000	489	682	2,710
30	946	900	667	1,040		837	5,660	1,560	970	464	664	2,150
31	976		836	999		832		1,520		572	652	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,350	625	871	0.487	0.56
November	1,460	706	1,052	.588	.66
December	1,350	667	976	.545	.63
January	1,200	777	965	.539	.62
February	1,000	738	858	.479	.50
March	971	723	851	.475	.55
April	5,660	793	2,774	1.55	1.73
May	10,000	1,520	4,697	2.62	3.02
June	1,750	970	1,276	.713	.80
July	999	484	807	.451	.52
August	859	442	641	.358	.41
September	3,420	651	1,575	.880	.98
The year	10,000	442	1,448	.809	10.98

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Menominee River below Koss, Mich.

Location.- In sec. 9, T. 34 N., R. 27 W., at power plant of Menominee & Marinette Light & Traction Co., half a mile above mouth of Little Cedar River and 4 miles below Koss.

Drainage area.- 3,790 square miles.

Records available.- July 1913 to September 1934.

Average discharge.- 21 years, 3,142 second-feet.

Extremes.- Maximum daily discharge during year, 13,400 second-feet Apr. 11; minimum, 336 second-feet July 17, 29, 30, Aug. 21.
1913-34: Maximum daily discharge, 23,200 second-feet Apr. 23, 25, 1916; minimum, 182 second-feet Sept. 15, 1931.

Remarks.- Records good. Discharge determined from power-house records. Flow regulated by six dams above station, which are used for developing power. Records of daily discharge furnished by Wisconsin Public Service Corporation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	961	1,710	1,450	1,560	1,550	1,390	1,330	5,010	1,970	1,670	671	1,150
2	1,060	1,320	1,470	914	1,570	1,030	1,440	6,260	1,960	1,660	579	1,200
3	1,330	1,440	1,620	1,030	1,570	1,310	1,830	8,310	1,940	671	349	936
4	1,240	2,280	1,400	1,520	1,640	1,100	1,820	10,600	1,320	1,030	347	1,090
5	1,250	1,750	1,910	1,340	706	1,100	2,230	10,700	1,680	671	1,020	2,150
6	1,500	1,890	1,420	1,030	1,180	1,120	3,110	11,700	1,660	1,340	1,010	2,400
7	868	2,010	1,620	1,640	1,680	799	3,730	9,890	1,340	1,640	694	2,210
8	1,220	2,450	1,270	1,410	880	1,190	4,080	8,510	1,670	1,640	1,340	1,930
9	1,030	1,550	1,770	1,500	1,560	1,500	6,330	8,510	1,970	671	694	1,660
10	1,670	1,130	1,680	1,160	891	1,760	8,460	7,490	2,270	1,020	683	1,230
11	1,160	1,770	1,090	1,740	1,300	1,470	13,400	6,180	1,970	1,660	671	1,460
12	833	1,860	1,400	1,370	1,100	752	10,200	5,160	1,990	1,660	1,040	1,800
13	1,460	1,240	1,310	1,250	1,350	1,010	8,610	5,270	2,270	1,640	694	1,370
14	775	544	1,400	1,410	1,150	1,350	8,520	5,080	1,960	1,670	1,040	1,040
15	1,280	579	1,790	1,270	1,420	1,340	9,530	4,770	2,290	1,320	683	1,800
16	937	1,480	1,500	1,250	1,190	1,480	7,750	3,920	2,270	671	683	1,800
17	1,380	1,200	1,680	1,200	1,150	1,320	6,330	4,270	1,620	336	683	1,870
18	903	1,370	1,010	1,270	1,520	1,340	7,240	3,540	1,320	683	683	1,870
19	1,380	1,460	880	1,450	1,060	1,370	7,400	3,670	1,490	1,350	509	1,970
20	1,330	1,470	1,520	1,110	1,310	1,330	9,980	4,130	1,640	1,330	347	2,160
21	1,740	1,100	1,750	1,220	706	1,330	8,330	3,310	1,630	1,350	336	2,240
22	2,290	937	1,040	1,300	1,450	1,320	8,990	3,450	1,620	1,330	347	2,910
23	1,390	1,700	752	1,190	1,080	1,340	6,880	3,910	1,660	683	547	2,400
24	1,740	1,900	1,670	1,390	868	1,320	2,570	3,600	1,980	1,030	762	2,580
25	1,900	1,380	1,500	1,420	1,690	1,160	6,710	3,260	1,010	1,680	699	2,020
26	1,480	1,670	1,130	1,520	787	878	6,230	2,820	1,680	1,010	1,100	2,500
27	1,030	1,120	1,140	2,060	1,170	1,060	5,810	2,210	1,670	671	720	2,880
28	1,160	1,750	984	1,590	903	671	6,310	2,300	1,670	671	697	3,240
29	1,850	1,490	1,330	1,330		797	6,960	2,590	1,660	336	870	5,110
30	1,230	1,830	1,500	1,530		1,350	5,240	2,550	1,340	336	906	4,800
31	2,050		1,240	1,400		870		1,930		1,020	1,250	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,290	775	1,336	0.353	0.41
November	2,450	544	1,513	.399	.45
December	1,910	752	1,394	.368	.42
January	2,060	914	1,367	.361	.42
February	1,690	706	1,230	.325	.34
March	1,760	671	1,199	.316	.36
April	13,400	1,330	6,262	1.65	1.84
May	11,700	1,930	5,319	1.40	1.61
June	2,290	1,010	1,751	.462	.52
July	1,680	336	1,111	.293	.34
August	1,340	336	731	.193	.22
September	5,110	936	2,126	.561	.63
The year	13,400	336	2,110	.557	7.56

Pine River at Pine River power plant, near Florence, Wis.

Location.- In sec. 28, T. 39 N., R. 18 E., at power plant of Wisconsin-Michigan Power Co. 6½ miles south of Florence.

Drainage area.- 520 square miles.

Records available.- October 1923 to September 1934; January 1914 to September 1923 at station 4 miles upstream.

Average discharge.- 11 years (1923-34), 398 second-feet.

Extremes.- Maximum daily discharge during year, 1,600 second-feet May 3; minimum, 10 second-feet several times during July and August.
1923-34: Maximum daily discharge, 4,380 second-feet Apr. 9, 1929; no flow at times in 1924, 1928, 1927, 1930, 1931, 1933.

Remarks.- Records good for medium and low stages; fair for high stages. Discharge determined from power-house records. Flow regulated by power plant at station, but pondage is small and monthly discharge is very nearly natural flow. Records of daily discharge furnished by Wisconsin-Michigan Power Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97	339	169	169	141	94	56	1,340	325	54	54	179
2	141	301	226	169	169	121	127	1,530	216	189	122	68
3	135	339	226	169	169	141	218	1,600	189	122	108	190
4	135	339	240	169	127	56	226	1,590	188	135	143	325
5	135	339	339	166	169	191	226	1,510	216	122	10	325
6	135	319	240	226	169	198	339	1,370	216	122	100	325
7	212	226	311	71	169	169	544	1,110	216	216	97	325
8	56	226	238	169	155	169	655	1,010	216	28	99	217
9	183	160	212	183	155	144	1,010	927	325	190	54	95
10	212	99	169	155	169	226	1,210	917	325	190	54	162
11	212	268	184	183	127	56	1,120	740	406	103	135	190
12	212	127	184	169	169	135	1,040	644	325	202	10	190
13	149	240	184	226	169	127	1,100	721	325	184	182	172
14	226	183	184	99	127	141	918	611	325	216	95	217
15	51	169	197	169	169	129	918	664	325	10	54	217
16	149	183	226	169	141	155	917	659	325	197	54	237
17	212	169	71	169	193	169	928	541	135	122	54	334
18	197	226	240	169	70	93	1,120	542	325	122	54	339
19	240	169	169	169	169	183	1,180	447	216	122	10	339
20	240	183	226	193	127	155	1,220	541	210	122	103	334
21	337	183	141	84	141	155	1,220	580	216	54	108	325
22	335	212	169	183	141	155	1,220	664	127	10	54	325
23	235	212	197	226	141	155	1,160	647	206	146	190	325
24	199	158	99	226	155	155	1,220	623	94	118	122	314
25	331	193	155	226	56	141	1,170	451	216	117	216	325
26	268	198	155	226	127	117	1,100	468	216	105	10	585
27	198	234	169	226	127	129	1,090	339	226	52	122	772
28	264	169	169	183	118	129	1,040	339	216	10	122	784
29	155	240	197	169		129	1,030	339	209	10	122	784
30	281	198	197	169		129	1,080	331	216	122	122	775
31	339		85	141		181		325		108	122	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	339	51	202	0.388	0.45
November	339	99	220	.423	.47
December	339	71	193	.371	.43
January	226	71	175	.337	.39
February	193	56	145	.279	.29
March	226	56	143	.275	.32
April	1,220	56	880	1.69	1.89
May	1,600	325	778	1.50	1.73
June	406	94	243	.467	.52
July	216	10	117	.225	.26
August	216	10	93.6	.180	.21
September	784	68	336	.646	.72
The year	1,600	10	294	.565	7.68

Pike River at Amberg, Wis.

Location.- Staff gage installed Aug. 5, 1934, in sec. 21, T. 35 N., R. 20 E., a quarter of a mile south of Amberg and 500 feet above Chicago, Milwaukee, St. Paul & Pacific Railroad bridge. Prior to that date chain gage in sec. 22, T. 35 N., R. 20 E., at highway bridge 3,500 feet below present site.

Drainage area.- 240 square miles.

Records available.- February 1914 to September 1934.

Average discharge.- [a] 20 years, 233 second-feet.

Extremes.- Maximum discharge recorded during year, 1,160 second-feet Apr. 10 (gage height, 5.49 feet); minimum, 70 second-feet Aug. 13 (gage height, 1.46 feet).
1914-34: Maximum discharge, 2,730 second-feet Apr. 10, 1922 (gage height, 7.68 feet); minimum, 26 second-feet Dec. 27, 1925 (gage height, 1.30 feet).

Remarks.- Records Oct. 1 to Aug. 4 fair except those for periods of ice effect Nov. 13 to Dec. 6, Dec. 9 to Apr. 7, which are poor. Records Aug. 5 to Sept. 30 good. Stage-discharge relation affected shifting control Apr. 8 to Aug. 4.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	170	132	103	103	80	146	310	132	103	84	92
2	108	170	162	108	108	84	178	298	126	98	84	99
3	108	162	170	108	106	86	333	298	120	93	98	114
4	108	154	178	108	108	98	488	276	120	93	88	168
5	108	146	187	108	108	108	624	254	114	98	86	178
6	114	139	162	103	103	108	738	244	108	114	80	149
7	114	146	187	108	103	103	860	224	108	126	80	131
8	139	139	146	114	98	98	990	214	120	114	86	114
9	154	139	146	114	93	93	1,090	244	146	108	80	106
10	154	126	154	108	88	84	1,160	234	146	108	75	92
11	146	178	154	108	88	84	990	224	146	108	75	99
12	139	*158	154	108	88	84	709	205	139	103	70	114
13	132	139	154	103	88	84	596	254	132	114	70	122
14	126	139	146	106	93	88	515	265	126	108	75	106
15	132	132	146	108	93	93	488	244	114	103	75	122
16	132	132	146	108	93	103	462	224	114	98	75	168
17	132	146	146	93	88	114	488	214	114	93	75	158
18	132	154	146	103	93	120	488	205	126	93	75	140
19	132	146	139	103	93	120	515	187	126	84	86	131
20	139	154	139	98	93	120	488	205	114	84	80	131
21	154	154	139	103	93	120	436	254	108	84	86	122
22	146	154	132	120	88	130	410	310	108	84	75	122
23	146	146	154	126	84	139	410	298	103	80	80	122
24	154	139	146	126	80	108	384	254	103	75	86	114
25	*150	146	136	126	80	114	359	214	103	75	80	131
26	146	162	126	120	80	114	359	187	114	75	80	140
27	146	154	114	114	75	98	310	178	132	75	80	149
28	146	170	114	114	71	98	310	162	114	75	80	140
29	146	154	114	108		103	298	154	114	*78	80	131
30	146	162	108	98		108	298	139	108	80	80	122
31	162		103	103		126		139		84	86	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	162	108	135	0.562	0.65
November	178	126	150	.625	.70
December	187	103	145	.604	.70
January	126	93	109	.454	.52
February	108	71	92.2	.384	.40
March	139	80	104	.433	.50
April	1,160	146	531	2.21	2.47
May	310	139	229	.954	1.10
June	146	103	120	.500	.56
July	126	75	93.8	.391	.45
August	98	70	80.3	.335	.39
September	178	92	128	.533	.59
The year	1,160	70	159	.662	9.03

*Estimated.

Peshtigo River at High Falls, near Crivitz, Wis.

Location.- In sec. 1, T. 32 N., R. 18 E., at High Falls power house of Wisconsin Public Service Corporation, 1 mile above Thunder River and 10 miles west of Crivitz.

Drainage area.- 585 square miles.

Records available.- August 1912 to September 1934.

Average discharge.- 22 years, 495 second-feet.

Extremes.- Maximum daily discharge during year, 1,320 second-feet Apr. 16; minimum, 7 second-feet one or more times each month.
1912-34: Maximum discharge recorded, 3,860 second-feet Apr. 11, 1922 (gage height, 7.80 feet); no flow several days during 1925, 1928, 1929, 1932, 1933.

Remarks.- Records fair. Discharge determined from power-house records. Flow is regulated by storage in service reservoir at plant. Records of daily discharge furnished by Wisconsin Public Service Corporation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	206	201	7	306	260	7	697	97	7	80	30
2	140	402	7	413	183	151	613	721	66	82	54	7
3	127	546	7	165	7	250	263	954	7	88	7	7
4	18	196	358	92	15	7	605	1,020	378	7	28	76
5	71	44	352	7	253	718	564	918	425	288	7	8
6	119	666	197	10	300	786	363	475	420	20	95	7
7	135	445	117	7	228	715	12	1,090	225	164	235	7
8	19	614	135	59	485	626	7	907	327	7	610	67
9	133	440	69	47	463	603	197	729	269	580	470	58
10	40	144	7	100	139	242	262	558	7	7	357	120
11	178	80	350	84	54	7	269	655	451	132	142	192
12	92	7	205	222	343	715	453	490	494	135	7	119
13	31	407	178	152	492	560	353	105	485	19	412	59
14	53	618	46	7	395	335	455	533	253	291	132	269
15	7	415	313	263	393	285	371	513	246	7	47	591
16	172	260	507	128	330	201	1,320	516	120	134	7	7
17	99	177	8	205	226	257	869	419	7	201	7	100
18	102	262	513	63	98	7	896	316	389	200	45	573
19	60	12	391	100	458	472	1,210	304	385	82	61	42
20	118	479	637	135	608	518	960	380	348	174	7	699
21	32	7	111	209	515	114	960	533	269	7	80	626
22	47	172	123	448	297	13	584	348	288	7	84	84
23	55	97	188	358	79	7	1,100	529	86	198	75	7
24	244	69	7	387	80	7	981	1,090	7	79	7	77
25	67	117	7	416	160	7	1,090	1,020	331	7	7	362
26	137	7	248	226	425	347	1,090	684	831	61	7	541
27	208	122	388	117	423	258	1,060	378	432	7	7	288
28	130	88	396	92	412	269	1,090	461	281	303	44	424
29	7	99	430	265		372	710	376	278	7	21	707
30	129	7	667	107		67	907	7	46	564	7	227
31	98		7	292		663		197		410	7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	244	7	97.1	0.166	0.19
November	666	7	240	.410	.46
December	667	7	231	.395	.46
January	448	7	167	.285	.33
February	608	7	292	.499	.52
March	786	7	316	.544	.63
April	1,320	7	654	1.12	1.25
May	1,090	7	578	.988	1.14
June	831	7	275	.470	.52
July	580	7	138	.236	.27
August	610	7	102	.174	.20
September	707	7	213	.364	.41
The year	1,320	7	275	.470	6.38

Oconto River near Gillett, Wis.

Location.- Chain gage in sec. 34, T. 28 N., R. 18 E., at highway bridge 2½ miles southeast of Gillett.

Drainage area.- 678 square miles.

Records available.- June 1906 to March 1909, January 1914 to September 1934.

Average discharge.- 20 years (1914-34), 606 second-feet.

Extremes.- Maximum discharge during year (estimated), 2,840 second-feet Apr. 7; minimum, 150 second-feet July 7, 8 (gage height, 0.40 foot).
1906-9, 1914-34: Maximum discharge, 6,470 second-feet Apr. 11, 1922, caused by failure of a dam at Pulcifer, 4 miles upstream (gage height, 9.1 feet); minimum, 95 second-feet June 3, 6, 1907 (gage height, 0.1 foot).

Remarks.- Records good except those for period of shifting control, June 6 to Sept. 4, which are fair, and those for periods of ice effect, Nov. 11-22, Dec. 7 to Apr. 7, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	212	197	242	212	212	197	258	700	293	351	172	172
2	212	197	258	212	212	197	276	700	276	331	172	172
3	212	226	276	212	197	197	800	599	258	331	172	172
4	212	242	276	212	197	197	1,600	574	242	331	161	172
5	212	258	293	226	212	197	2,490	550	242	331	150	197
6	226	258	293	242	212	212	2,140	526	212	331	150	197
7	226	276	276	242	226	226	2,210	503	212	331	150	212
8	242	276	293	242	212	226	1,720	480	197	331	150	212
9	242	293	242	242	212	242	1,660	457	184	351	172	226
10	242	293	242	258	212	242	1,480	457	197	331	172	226
11	242	293	242	312	212	242	1,360	457	226	331	161	242
12	242	293	242	276	212	242	1,190	457	242	312	150	258
13	242	293	242	276	212	242	1,190	435	242	293	150	258
14	226	293	242	276	212	242	1,130	457	226	293	150	258
15	226	276	242	276	212	258	1,070	413	226	293	161	258
16	242	276	226	258	212	258	1,020	413	226	293	150	293
17	242	276	226	242	212	258	910	413	226	276	150	293
18	242	276	226	242	212	258	910	413	242	276	150	293
19	242	258	226	242	212	258	855	413	242	242	150	293
20	242	258	226	242	212	258	855	392	242	226	150	293
21	242	258	197	226	212	258	800	392	242	226	150	293
22	242	258	212	226	212	267	800	371	242	197	161	312
23	242	242	226	242	212	276	800	371	242	184	161	293
24	242	242	226	226	212	242	750	351	242	184	161	293
25	242	242	226	226	212	258	750	331	242	172	161	293
26	226	242	197	226	197	242	750	331	258	172	161	293
27	212	242	197	226	197	242	750	331	312	172	161	312
28	212	242	212	226	197	242	750	331	392	172	161	312
29	197	242	212	226		242	750	331	371	172	161	312
30	184	242	212	212		258	750	312	351	161	161	312
31	184		212	212		258		312		161	161	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	242	184	227	0.335	0.39
November	293	197	259	.382	.43
December	293	197	237	.350	.40
January	312	212	239	.353	.41
February	226	197	210	.310	.32
March	276	197	240	.354	.41
April	2,490	258	1,092	1.61	1.80
May	700	312	436	.646	.74
June	392	184	252	.372	.42
July	351	161	263	.388	.45
August	172	150	158	.233	.27
September	312	172	257	.379	.42
The year	2,490	150	322	.475	6.46

Fox River at Berlin, Wis.

Location.- Staff gage in sec. 16, T. 17 N., R. 13 E., at Government lock and dam 2 1/3 miles upstream from Berlin.

Drainage area.- 1,430 square miles.

Records available.- January 1898 to September 1934.

Average discharge.- 36 years, 1,110 second-feet.

Extremes.- Maximum daily discharge during year, 1,910 second-feet Apr. 6-8; minimum, 360 second-feet Feb. 27, 28.
1898-1934: Maximum daily discharge 6,620 second-feet Mar. 21, 23, 1929; minimum, 250 second-feet Feb. 1-4, 1900.

Remarks.- Open-water records good; winter records fair. Daily-discharge records furnished by U. S. Army Engineers.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	675	705	645	455	440	370	645	830	510	615	560	560
2	645	705	645	450	435	400	830	705	510	560	535	590
3	645	675	675	430	430	500	1,460	675	510	560	535	590
4	645	675	705	430	430	510	1,800	675	465	535	535	645
5	615	675	675	430	450	545	1,850	675	465	535	560	705
6	615	645	615	430	430	595	1,910	645	465	590	560	735
7	615	675	615	455	450	570	1,910	645	465	645	560	705
8	645	645	645	455	480	560	1,910	615	445	705	560	645
9	675	645	590	480	450	485	1,850	615	465	675	560	615
10	735	590	550	480	425	450	1,800	645	490	735	560	590
11	735	625	500	480	420	475	1,740	645	510	765	560	590
12	735	600	425	480	445	500	1,620	615	490	765	560	615
13	735	670	480	510	470	545	1,420	645	490	735	535	615
14	735	600	475	535	470	665	1,360	645	490	705	535	615
15	735	540	470	570	470	695	1,320	615	490	705	535	675
16	735	540	470	570	460	705	1,220	590	490	675	560	705
17	800	570	470	510	460	675	1,140	590	490	675	615	735
18	765	570	465	455	450	615	1,060	560	490	615	590	765
19	765	565	465	510	450	700	1,020	535	490	615	645	735
20	765	560	465	515	420	590	975	560	510	615	645	735
21	735	600	470	515	420	615	975	590	510	615	675	735
22	735	610	445	575	415	590	1,060	535	510	615	645	735
23	735	690	440	605	395	565	1,060	535	510	615	645	765
24	705	750	430	575	390	595	940	535	510	590	615	735
25	675	675	430	600	390	590	905	535	490	560	615	735
26	705	705	390	570	380	615	906	535	560	560	590	705
27	675	675	410	560	360	560	830	535	590	560	590	675
28	650	645	420	580	360	560	830	535	615	560	590	705
29	705	675	420	440		590	905	535	645	560	560	705
30	735	645	410	390		465	865	510	615	560	560	675
31	705		420	415		465		510		560	560	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	800	615	702	0.491	0.57
November	750	540	638	.446	.50
December	705	390	507	.355	.41
January	605	390	499	.349	.40
February	480	360	430	.301	.31
March	705	370	560	.392	.45
April	1,910	645	1,270	.888	.99
May	830	510	600	.420	.48
June	645	445	510	.357	.40
July	765	535	625	.437	.50
August	675	535	579	.405	.47
September	765	560	678	.474	.53
The year	1,910	360	633	.443	6.01

Fox River at Rapide Croche Dam, near Wrightstown, Wis.

Location.- At Rapide Croche Dam, in sec. 4, T. 21 N., R. 19 E., 2 miles above Wrightstown.

Drainage area.- 6,150 square miles.

Records available.- March 1896 to September 1934.

Average discharge.- 38 years, 4,337 second-feet.

Extremes.- Maximum daily discharge during year, 6,650 second-feet Apr. 3; minimum, 282 second-feet Oct. 8.
1918-34: Maximum daily discharge, 20,600 second-feet Apr. 4, 1929; minimum, 273 second-feet Sept. 24, 1933.

Remarks.- Records good. Flow regulated by storage in Lake Winnebago. Daily-discharge records furnished by U. S. Army Engineers.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	518	1,290	1,550	2,340	2,590	2,140	1,450	3,230	1,940	1,280	1,280	914
2	618	1,250	2,370	2,250	2,660	1,950	2,850	3,750	1,870	1,400	1,360	868
3	788	1,180	2,010	2,340	2,160	2,150	6,650	3,380	1,160	1,040	1,220	896
4	763	647	2,110	2,240	1,720	2,060	3,730	3,550	2,080	1,020	1,000	1,470
5	630	794	1,780	2,410	2,310	2,320	3,570	3,270	1,840	1,840	855	777
6	602	1,370	2,050	1,990	2,680	2,000	3,590	2,420	1,870	1,940	1,360	662
7	718	1,780	1,820	2,000	2,400	2,030	3,640	3,530	1,920	1,570	1,240	891
8	282	2,120	1,430	2,450	2,240	2,000	4,310	3,280	1,900	1,080	977	999
9	948	1,880	2,000	2,620	2,200	2,290	3,750	3,980	1,850	1,650	1,340	764
10	660	1,430	2,420	2,670	2,140	2,320	2,490	3,040	1,340	2,070	725	1,170
11	705	1,620	2,340	2,770	2,070	1,860	2,740	2,990	1,790	1,790	920	981
12	778	1,460	2,930	2,580	2,440	2,020	2,950	2,790	1,090	2,220	655	959
13	776	1,360	2,770	2,330	2,280	2,110	3,090	2,830	1,030	1,860	1,320	1,040
14	671	1,460	2,550	1,690	2,620	2,640	3,270	3,180	1,360	2,260	976	1,060
15	611	1,300	2,670	2,380	2,650	2,290	2,420	3,030	958	1,240	807	1,140
16	848	1,930	2,070	1,920	2,190	2,040	3,560	3,620	1,510	1,930	931	925
17	832	1,410	1,810	2,520	2,180	2,110	3,440	3,020	762	1,890	742	1,060
18	1,140	1,810	2,490	2,640	1,790	1,680	3,710	3,000	1,520	2,110	602	1,310
19	1,320	1,460	2,540	2,450	2,190	2,210	3,510	3,030	1,150	2,250	728	1,220
20	992	1,770	2,580	2,430	2,360	2,210	3,120	2,020	1,010	1,740	964	1,260
21	1,020	2,000	2,630	2,170	2,190	2,590	2,980	3,310	1,320	1,530	716	1,170
22	962	1,960	2,210	2,720	2,290	2,280	3,280	2,890	1,050	977	776	1,030
23	1,100	1,830	2,240	2,090	2,120	1,620	3,480	3,010	1,470	2,140	894	1,280
24	1,090	1,880	2,010	2,460	1,520	2,040	3,120	3,080	598	1,590	767	1,650
25	1,050	1,830	1,870	2,460	1,310	1,840	3,630	2,960	1,680	1,950	874	1,960
26	1,520	1,310	2,610	2,380	1,870	2,040	3,690	2,740	1,850	1,110	343	1,770
27	1,040	1,880	2,500	2,100	2,260	2,170	3,520	1,770	1,410	1,280	999	1,800
28	981	2,130	2,490	1,280	1,950	1,970	2,800	3,110	1,490	1,200	755	1,830
29	1,100	2,080	2,520	2,090		2,100	2,830	1,850	1,170	1,200	825	1,520
30	1,110	1,730	2,260	2,270		1,410	3,340	2,020	1,480	1,160	902	1,300
31	1,090		2,250	2,670		1,950		2,960		1,270	1,130	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,520	282	879	0.143	0.16
November	2,130	647	1,598	.260	.29
December	2,930	1,430	2,261	.368	.42
January	2,770	1,280	2,313	.376	.43
February	2,680	1,310	2,192	.356	.37
March	2,640	1,410	2,079	.338	.39
April	6,650	1,450	3,350	.545	.61
May	3,980	1,650	2,982	.485	.56
June	2,080	598	1,449	.236	.26
July	2,260	977	1,600	.260	.30
August	1,360	343	935	.152	.18
September	1,960	662	1,189	.193	.22
The year	6,650	282	1,900	.309	4.19

Wolf River above West Branch of Wolf River, Wis.

Location.- Staff gage in E½ sec. 3, T. 28 N., R. 15 E., half a mile above West Branch of Wolf River and 3 miles upstream from Keshena. Zero of gage is 856.57 feet above mean sea level.

Drainage area.- 633 square miles.

Records available.- March 1928 to September 1934.

Extremes.- Maximum discharge recorded during year, 1,620 second-feet Apr. 10 (gage height, 4.50 feet); minimum, 228 second-feet Aug. 18 (gage height, 1.33 feet).
1928-34: Maximum discharge recorded 2,580 second-feet Apr. 8, 1929 (gage height, 6.10 feet); minimum, 201 second-feet Nov. 21, 1929, and Sept. 6, 1933 (gage height, 1.35 feet).

Remarks.- Records excellent except those for periods of ice effect, Nov. 10-14, Nov. 17 to Apr. 8, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	294	380	306	306	270	281	380	818	413	333	237	270
2	281	363	306	306	258	294	430	818	396	306	270	320
3	281	363	306	306	281	306	464	818	363	294	270	396
4	281	348	320	294	281	333	578	818	363	281	261	500
5	270	333	333	320	294	363	767	767	333	281	258	500
6	281	333	333	306	294	363	920	767	320	430	247	430
7	281	333	333	320	294	333	1,130	716	294	380	237	380
8	306	306	333	333	294	348	1,340	716	306	333	247	333
9	320	270	333	320	258	363	1,460	665	363	320	247	320
10	306	281	333	306	270	306	1,620	665	396	306	237	306
11	306	281	333	294	258	294	1,290	620	396	306	237	306
12	306	281	333	294	270	294	1,400	578	380	294	228	333
13	294	281	333	294	270	306	1,130	538	363	281	228	333
14	281	270	333	294	281	306	1,020	538	348	281	228	320
15	294	258	333	306	281	306	970	538	333	294	228	363
16	306	237	333	294	281	333	970	538	320	294	228	413
17	306	258	333	281	281	363	920	500	320	281	228	430
18	306	306	333	281	281	333	920	500	363	281	228	430
19	320	306	333	281	281	380	970	500	348	270	247	396
20	320	306	320	294	281	348	920	500	333	258	258	396
21	333	306	320	294	281	363	920	578	306	258	258	413
22	333	306	320	306	281	306	920	620	306	247	247	396
23	320	306	320	320	281	306	920	620	306	237	258	380
24	348	306	320	348	270	306	920	620	320	237	258	380
25	320	294	306	333	270	306	869	578	320	237	270	396
26	333	281	306	320	270	306	920	538	538	237	258	464
27	333	270	306	294	258	320	920	538	500	237	258	538
28	306	306	306	258	270	320	869	500	464	228	258	538
29	363	306	306	247		320	818	464	413	228	258	538
30	380	306	306	247		333	818	430	363	237	258	538
31	380		306	247		363		430		237	258	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	380	270	313	0.494	0.57
November	380	237	303	.479	.53
December	333	306	322	.509	.59
January	348	247	298	.471	.54
February	294	258	276	.436	.45
March	380	281	326	.515	.59
April	1,620	380	950	1.50	1.67
May	818	430	608	.961	1.11
June	538	294	363	.573	.64
July	430	228	281	.444	.51
August	281	228	249	.393	.45
September	538	270	402	.635	.71
The year	1,620	228	391	.618	8.36

Wolf River at Keshena Falls, Wis.

Location.- Water-stage recorder in E½ sec. 22, T. 28 N., R. 15 E., 500 feet below Keshena Falls.

Drainage area.- 812 square miles.

Records available.- March 1928 to September 1934. May 1907 to March 1909, February 1911 to March 1928 at station 1½ miles downstream, at Keshena.

Average discharge.- 23 years (1911-34), 790 second-feet.

Extremes.- Maximum discharge recorded during year, 2,120 second-feet Apr. 11; minimum discharge 256 second-feet Aug. 11.
1911-34: Maximum discharge recorded, 4,390 second-feet Apr. 10, 1922; minimum discharge, that of Aug. 11, 1934.

Remarks.- Records good except those for period of ice effect, Dec. 9 to Apr. 7, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	394	466	471	418	376	334	590	975	572	609	277	324
2	385	471	466	418	376	334	680	975	549	554	298	366
3	380	471	466	418	376	334	820	975	531	506	338	445
4	370	466	466	418	376	376	960	950	514	471	324	609
5	366	466	471	418	376	418	1,170	942	497	440	302	635
6	370	466	471	418	368	418	1,340	917	476	440	307	578
7	370	455	471	418	368	418	1,520	893	455	497	281	520
8	380	445	466	418	368	418	1,760	870	440	508	285	450
9	399	435	445	416	376	418	1,880	831	435	508	290	404
10	409	424	430	418	376	418	2,120	801	471	492	294	385
11	404	404	404	418	401	418	1,760	779	482	482	268	370
12	399	435	385	418	418	418	1,760	757	482	466	272	394
13	394	476	375	418	418	418	1,460	736	482	445	277	404
14	385	466	370	418	418	418	1,280	715	476	430	277	390
15	380	445	370	418	418	418	1,170	694	460	414	281	399
16	385	497	370	418	418	418	1,170	674	450	409	281	492
17	394	543	366	418	418	418	1,110	654	440	409	277	520
18	394	525	366	418	418	418	1,170	641	435	399	277	520
19	394	520	366	418	418	418	1,220	628	440	390	294	492
20	399	514	366	418	418	376	1,170	616	440	380	307	482
21	409	508	366	418	376	376	1,110	628	430	347	320	497
22	424	497	366	418	376	401	1,080	694	424	338	311	492
23	430	487	366	418	334	401	1,080	729	414	324	311	476
24	430	476	366	418	334	418	1,060	729	409	320	320	476
25	435	471	366	418	334	418	1,040	729	409	311	302	455
26	435	466	401	418	334	418	1,030	708	508	302	307	476
27	430	471	401	376	334	418	1,030	687	701	294	298	566
28	430	476	418	334	334	418	1,010	674	722	285	285	609
29	424	476	418	334		418	983	648	701	281	281	609
30	419	471	418	334		460	975	616	661	277	272	616
31	455		418	334		546		597		277	285	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	455	366	402	0.495	0.57
November	543	404	473	.583	.65
December	471	366	409	.504	.58
January	418	334	406	.500	.58
February	418	334	381	.469	.49
March	546	334	410	.505	.58
April	2,120	590	1,217	1.50	1.67
May	975	597	757	.932	1.07
June	722	409	497	.612	.68
July	609	277	407	.501	.58
August	338	268	294	.362	.42
September	635	324	482	.594	.66
The year	2,120	268	510	.628	8.53

Wolf River at New London, Wis.

Location.- Staff gage in sec. 12, T. 22 N., R. 14 E., at New London, three-quarters of a mile below Embarrass River. Zero of gage is 749.4 feet above mean sea level.

Drainage area.- 2,240 square miles.

Records available.- October 1913 to September 1934.

Average discharge.- 21 years, 1,797 second-feet.

Extremes.- Maximum discharge recorded during year, 6,000 second-feet Apr. 8, 9 (gage height, 8.4 feet); minimum, 348 second-feet Feb. 27, 28.
1913-34: Maximum discharge recorded, 15,500 second-feet Apr. 13, 1922 (gage height, 11.4 feet); minimum, 261 second-feet Sept. 6, 1933.
Maximum stage known, 11.6 feet Apr. 16, 1888, reported by U. S. Army Engineers.

Remarks.- Records good except those for periods of ice effect, Nov. 16-21, Dec. 6 to Mar. 13, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	564	528	636	564	564	456	1,120	1,610	780	1,610	456	600
2	564	600	636	600	636	600	962	1,560	780	1,340	420	600
3	492	672	672	528	636	744	1,650	1,560	636	962	492	528
4	492	636	672	564	672	888	3,560	1,560	708	888	564	636
5	456	636	672	564	636	1,000	4,270	1,560	672	852	528	708
6	456	672	564	672	456	1,000	5,300	1,520	672	852	492	744
7	456	600	600	672	420	1,000	5,720	1,520	672	816	420	744
8	492	528	564	708	492	1,040	6,000	1,470	708	852	420	780
9	672	672	492	708	564	1,040	6,000	1,430	744	852	600	888
10	636	564	492	672	564	1,000	5,860	1,430	708	888	636	924
11	600	528	456	636	564	962	5,720	1,340	672	924	600	780
12	456	564	456	672	564	962	5,440	1,200	564	1,040	528	744
13	564	636	420	672	492	888	5,160	1,160	636	1,040	492	780
14	600	744	492	708	492	962	4,900	1,080	708	1,000	492	744
15	600	600	600	744	564	1,000	4,510	1,080	744	962	492	744
16	600	456	636	600	600	1,080	4,160	1,040	744	852	456	780
17	564	456	672	564	636	1,120	3,740	1,040	708	816	492	780
18	420	492	672	600	708	1,160	3,480	1,000	672	924	456	816
19	528	528	528	672	672	1,080	3,190	962	636	1,040	456	888
20	600	564	492	672	492	962	2,700	962	636	962	528	888
21	636	600	384	672	420	816	2,630	962	744	888	492	852
22	492	636	636	708	492	962	2,460	1,000	744	780	492	888
23	420	708	636	852	600	1,040	2,350	1,040	708	672	564	962
24	456	780	636	888	636	1,040	2,200	1,080	1,430	672	456	1,040
25	528	780	564	962	564	1,000	2,100	1,120	1,340	528	528	1,080
26	636	744	528	962	456	962	1,970	1,120	816	492	564	1,040
27	672	744	456	962	348	888	1,880	1,060	1,120	456	456	1,000
28	672	708	456	962	348	744	1,830	1,000	1,520	492	492	924
29	672	564	456	888		744	1,740	924	1,790	528	600	852
30	636	564	492	708		1,000	1,650	852	1,830	528	456	924
31	600		528	564		1,290		816		492	528	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	672	420	556	0.248	0.29
November	780	456	617	.275	.31
December	672	384	555	.248	.29
January	962	528	707	.316	.36
February	708	348	546	.244	.25
March	1,290	456	949	.424	.49
April	6,000	962	3,475	1.55	1.73
May	1,610	816	1,196	.534	.62
June	1,830	564	861	.384	.43
July	1,610	456	839	.375	.43
August	636	420	505	.225	.26
September	1,080	528	822	.367	.41
The year	6,000	348	967	.432	5.87

Embarrass River near Embarrass, Wis.

Location.- Chain gage on line between T. 26 N., R. 14 E., and T. 26 N., R. 15 E., 4 miles upstream from Embarrass.

Drainage area.- 395 square miles.

Records available.- June 1919 to September 1934.

Average discharge.- 15 years, 289 second-feet.

Extremes.- Maximum discharge recorded during year, 2,240 second-feet Apr. 5 (gage height, 6.85 feet); minimum, 30 second-feet (estimated) Dec. 19.
1919-34: Maximum discharge, 6,760 second-feet Apr. 10, 1922 (gage height, 11.5 feet); minimum, 23 second-feet Aug. 3, 6, 7, 1931.

Remarks.- Records fair except those for period of ice effect, Nov. 11-21, 27, 28, Dec. 8 to Mar. 31, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	95	95	103	75	73	98	234	112	120	47	70
2	62	115	117	110	77	83	131	217	95	95	58	98
3	88	115	86	121	60	113	1,210	200	88	95	62	95
4	86	102	90	127	73	108	1,390	184	81	93	64	289
5	95	100	95	129	51	127	2,100	168	105	88	58	347
6	93	98	98	124	64	153	2,030	171	112	79	62	347
7	73	90	100	113	47	156	1,770	200	84	66	64	308
8	73	98	55	127	39	175	1,510	178	70	56	68	252
9	73	98	55	116	47	79	1,150	151	86	58	68	115
10	95	102	83	110	51	60	910	159	75	136	73	79
11	84	95	49	103	47	83	750	148	68	93	64	98
12	95	70	70	93	58	70	604	159	81	145	58	145
13	100	73	79	100	79	70	428	148	120	136	58	68
14	102	77	66	68	66	56	347	148	117	142	60	68
15	107	79	56	77	56	42	328	136	93	234	58	151
16	75	81	62	116	55	60	289	136	90	308	58	200
17	88	77	44	100	75	70	289	139	84	328	53	126
18	98	75	44	62	60	83	308	117	81	289	47	117
19	95	70	30	51	58	53	270	131	112	181	44	93
20	95	64	62	77	62	32	347	126	95	100	42	142
21	98	98	58	95	64	36	308	134	100	93	40	234
22	88	115	70	116	55	75	308	181	86	88	47	270
23	81	77	53	79	39	70	308	217	70	77	60	308
24	112	93	49	100	51	56	270	217	64	70	62	217
25	98	100	62	81	44	34	252	184	77	62	53	151
26	107	81	51	86	58	33	234	162	536	70	47	159
27	107	95	64	100	60	64	217	126	750	68	46	168
28	105	81	95	83	49	62	234	100	650	56	46	200
29	93	84	95	88		53	200	117	470	58	56	217
30	84	86	108	83		246	200	110	270	46	58	181
31	100		108	79		246		107		49	56	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	112	62	90.9	0.230	0.27
November	115	64	89.5	.227	.25
December	117	30	72.5	.184	.21
January	129	51	97.3	.246	.28
February	79	39	57.9	.147	.15
March	246	32	87.8	.222	.26
April	2,100	98	626	1.58	1.76
May	234	100	158	.400	.46
June	750	64	164	.415	.46
July	328	46	115	.291	.34
August	73	40	56.0	.142	.16
September	347	68	176	.446	.50
The year	2,100	30	149	.377	5.10

Little Wolf River at Royalton, Wis.

Location.- Water-stage recorder in sec. 1, T. 22 N., R. 13 E., installed Apr. 23, 1934, at Royalton. Prior to that date staff gage on opposite side of river was used.

Drainage area.- 485 square miles.

Records available.- January 1914 to September 1934.

Average discharge.- 20 years, 445 second-feet.

Extremes.- Maximum discharge recorded during year, 3,500 second-feet Apr. 4 (gage height, 5.15 feet); minimum, 57 second-feet Feb. 10.
1914-34: Maximum discharge recorded, 5,780 second-feet Apr. 10-11, 1922 (gage height, 6.92 feet); minimum, that of Feb. 10, 1934.

Remarks.- Records fair Oct. 1 to Apr. 22 except those for period of ice effect, Nov. 10-20, Dec. 9 to Mar. 19, which are poor. Records good Apr. 23 to Sept. 30. Stage-discharge relation affected by aquatic growth Aug. 1 to Sept. 30.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	154	198	102	84	94	132	250	148	298	115	143
2	122	147	187	102	84	138	449	275	154	329	135	161
3	132	164	223	116	97	154	2,260	260	130	213	133	219
4	147	154	187	102	84	138	3,370	257	104	169	124	406
5	141	147	180	102	72	154	2,690	255	107	192	138	315
6	141	154	154	116	82	154	2,560	261	106	230	126	317
7	141	141	147	102	79	141	1,950	233	111	248	142	289
8	187	147	132	116	63	157	1,400	249	120	179	150	248
9	198	141	128	102	70	141	917	225	165	208	175	199
10	173	134	122	102	57	141	663	227	175	254	148	163
11	154	135	111	102	75	157	498	205	127	270	141	227
12	164	157	102	116	84	157	473	199	165	287	207	204
13	154	154	84	102	122	173	473	181	155	288	90	184
14	147	173	97	102	180	132	335	241	140	258	158	209
15	141	170	111	116	173	128	379	212	146	204	190	272
16	164	177	111	116	157	119	293	179	160	285	138	247
17	154	173	97	132	135	147	293	199	140	245	110	228
18	180	201	97	132	132	144	273	195	157	213	124	259
19	173	201	84	116	147	136	215	200	177	199	186	239
20	154	215	97	141	144	116	253	161	170	199	183	247
21	164	215	97	180	125	116	273	211	160	173	172	292
22	122	187	84	253	94	180	215	226	134	162	85	300
23	132	180	84	293	92	164	*261	235	131	143	137	270
24	147	173	84	273	65	180	308	225	163	154	82	356
25	154	154	94	234	72	164	303	171	172	137	211	308
26	173	173	77	212	79	147	273	212	582	137	129	284
27	154	180	75	167	75	132	246	170	618	119	99	272
28	164	167	84	138	62	132	261	152	698	124	121	248
29	173	208	82	125		116	249	171	676	148	122	255
30	164	167	92	89		116	256	143	586	103	142	223
31	154		116	100		132		150		126	143	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	198	122	155	0.320	0.37
November	216	135	170	.350	.39
December	223	75	117	.241	.28
January	293	89	139	.287	.33
February	180	57	100	.206	.21
March	180	94	142	.293	.34
April	3,370	132	757	1.56	1.74
May	275	143	211	.435	.50
June	698	104	220	.454	.51
July	329	103	202	.416	.48
August	211	82	141	.291	.34
September	406	143	253	.522	.58
The year	3,370	57	217	.447	6.07

*Estimated.

Waupaca River near Waupaca, Wis.

Location.- Chain gage near north line of sec. 1, T. 21 N., R. 12 E., at highway bridge 4 miles below Waupaca.

Drainage area.- 305 square miles.

Records available.- October 1917 to September 1934. June 1916 to October 1917 at station 1 mile below present site.

Average discharge.- 18 years, 251 second-feet.

Extremes.- Maximum discharge recorded during year, 1,980 second-feet Apr. 4 (gage height, 5.82 feet); minimum, 95 second-feet Aug. 29 (gage height, 1.11 feet).
1916-34: Maximum discharge, 2,600 second-feet Mar. 17, 1919 (gage height, 5.6 feet); minimum (estimated), 35 second-feet Jan. 22, 28, 1926.

Remarks.- Records fair except those above 1,000 second-feet and those for period of ice effect, Nov. 14-21, Dec. 9 to Mar. 22, which are poor. Slight diurnal fluctuations. Discharge estimated owing to missing gage-height record Aug. 16-19.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	202	202	190	119	119	245	166	177	230	154	177
2	127	202	216	166	190	260	190	190	166	216	119	154
3	177	216	166	112	135	177	1,470	166	135	144	166	230
4	100	144	202	127	190	276	1,980	202	154	190	166	291
5	202	166	202	230	166	276	1,560	202	100	154	154	230
6	190	135	202	245	202	230	1,190	202	216	260	166	230
7	190	190	144	166	190	291	535	190	154	177	106	177
8	276	190	166	202	154	230	439	135	144	190	190	135
9	202	190	190	135	106	127	338	190	190	202	177	190
10	202	202	202	230	127	230	370	202	166	291	177	202
11	202	202	154	119	166	202	322	177	154	202	177	177
12	202	154	202	202	202	154	291	177	144	202	166	190
13	202	216	230	216	119	245	291	190	177	177	144	216
14	112	202	154	144	216	276	216	177	106	177	166	166
15	177	245	202	202	177	135	245	202	166	202	119	276
16	166	202	154	216	216	245	216	177	154	166	168	230
17	190	154	202	127	216	230	202	177	154	202	168	230
18	190	202	202	202	202	230	177	135	190	190	168	230
19	144	154	202	127	106	166	230	154	177	190	168	202
20	216	202	190	202	166	119	230	166	144	154	245	230
21	202	202	106	144	202	190	216	177	190	166	190	260
22	177	190	144	154	119	276	190	230	190	177	154	216
23	144	144	190	322	202	202	216	216	154	184	166	202
24	202	202	112	291	166	230	190	190	166	177	154	202
25	202	216	106	166	177	177	216	154	154	154	166	177
26	154	177	177	190	135	166	177	177	535	127	100	216
27	190	154	154	216	154	202	230	166	658	154	166	216
28	216	144	166	202	202	202	202	154	291	127	154	166
29	202	202	135	119		177	154	100	230	177	95	177
30	166	177	144	127		1,010	216	135	230	119	190	190
31	216		202	154		370		154		202	202	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	276	100	184	0.603	0.70
November	245	135	186	.610	.68
December	230	106	175	.574	.66
January	322	112	182	.597	.69
February	216	106	169	.554	.58
March	1,010	119	239	.784	.90
April	1,980	154	425	1.39	1.55
May	230	100	175	.574	.66
June	658	100	199	.652	.73
July	291	119	182	.597	.69
August	245	95	161	.528	.61
September	291	135	206	.675	.75
The year	1,980	95	207	.679	9.20

Milwaukee River near Milwaukee, Wis.

Location.- Water-stage recorder in sec. 5, T. 7 N., R. 22 E., on left bank of river 2,000 feet below Port Washington highway bridge installed Jan. 9, 1934; prior to that date chain gage at Port Washington highway bridge near the north limits of Milwaukee.

Drainage area.- 661 square miles.

Records available.- April 1914 to September 1934.

Average discharge.- 20 years, 426 second-feet.

Extremes.- Maximum discharge recorded during year, 2,260 second-feet Apr. 4 (gage height, 5.46 feet); minimum, 9 second-feet Aug. 18 (gage height, 0.30 foot).
1914-34: Maximum discharge, 15,100 second-feet Mar. 20, 1918 (gage height, 9.00 feet from high-water mark); minimum, that of Aug. 18, 1934.

Remarks.- Records fair except those for periods of ice effect, Nov. 10, 11, 14-18, Dec. 11-19, 25-31, Jan. 25 and Jan. 28 to Mar. 3, which are poor. Stage-discharge relation affected by channel improvement work which was started about Dec. 10 and which consisted of excavating rock from the bed of the stream in the reach of the river occupied by the gages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	67	122	164	38	46	300	153	32	80	14	25
2	86	107	107	211	32	47	410	136	32	50	21	36
3	86	100	149	144	27	74	1,370	132	28	40	14	34
4	67	107	149	150	27	202	2,070	144	28	31	14	24
5	56	86	149	290	27	258	2,070	128	21	31	14	36
6	33	130	168	130	27	211	1,790	109	24	61	29	34
7	56	107	139	130	25	258	1,430	128	41	41	17	31
8	41	86	139	130	32	239	990	114	42	29	19	24
9	86	107	67	112	52	230	780	91	49	36	17	24
10	86	22	56	95	66	211	740	118	44	38	17	21
11	33	36	36	112	66	144	660	87	36	36	13	22
12	86	73	36	112	66	124	580	107	58	36	14	24
13	61	86	36	230	66	130	540	138	42	41	17	21
14	41	61	36	187	66	100	390	114	33	36	11	24
15	18	18	36	130	64	144	360	187	38	36	19	50
16	107	22	61	300	64	157	335	177	36	41	14	34
17	67	36	92	164	92	300	286	142	39	29	17	34
18	56	36	100	130	82	164	257	148	36	36	9	57
19	67	25	107	130	87	480	251	89	21	36	14	112
20	33	107	115	74	74	514	223	120	30	34	13	84
21	177	107	200	84	53	448	241	93	36	36	11	130
22	107	107	107	84	38	258	232	100	21	36	11	124
23	122	130	122	164	38	416	251	77	38	36	19	95
24	130	107	130	84	38	258	260	113	54	36	41	61
25	107	107	100	87	38	130	270	95	50	21	38	66
26	130	86	87	95	38	230	226	76	152	38	36	70
27	86	107	53	95	38	164	220	86	99	29	36	38
28	107	86	38	74	38	100	166	82	184	25	19	41
29	25	86	38	53		130	166	82	184	13	24	50
30	107	73	38	38		84	170	72	160	11	24	53
31	100		53	37		112		48		17	24	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	177	20	76.9	0.116	0.13
November	130	18	80.5	.122	.14
December	200	36	92.5	.140	.16
January	300	37	130	.197	.23
February	92	25	50.0	.076	.08
March	514	46	205	.310	.36
April	2,070	166	601	.909	1.01
May	187	48	112	.169	.19
June	184	21	56.3	.085	.09
July	80	11	35.4	.054	.06
August	41	9	19.4	.029	.03
September	130	21	49.3	.075	.08
The year	2,070	9	126	.191	2.56

Cedar Creek near Cedarburg, Wis.

Location.- Chain gage on south line of sec. 14, T. 10 N., R. 21 E., at bridge on State trunk highway 60 about 2 miles north of Cedarburg.

Drainage area.- 122 square miles.

Records available.- August 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 340 second-feet Apr. 4 (gage height, 6.48 feet); minimum discharge (estimated), 0.3 second-foot Dec. 28. 1930-34: Maximum discharge recorded, 1,420 second-feet Apr. 1, 1933 (gage height, 8.94 feet); minimum, that of Dec. 28, 1933.

Remarks.- Records good except those for period Oct. 1-16 and for periods of ice effect, Nov. 9-22, 26, 27, Dec. 8 to Mar. 19, which are poor. Discharge estimated Oct. 12-16, Aug. 5.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	8.7	13	10	5.5	1.9	57	21	7.1	2.6	1.4	0.9
2	4.8	11	12	9.2	6.3	9.2	200	21	6.3	2.3	1.4	1.3
3	4.1	9.6	14	14	6.7	38	249	22	2.8	2.0	1.2	3.0
4	5.4	7.8	15	9.6	6.7	44	328	22	3.7	1.4	1.0	3.0
5	4.8	8.2	18	9.2	7.1	37	200	20	3.0	1.4	1.0	2.6
6	4.8	8.2	15	9.2	6.7	40	72	21	3.0	4.8	.9	2.3
7	5.4	8.2	12	9.2	5.5	31	68	19	2.3	3.9	1.2	3.5
8	5.4	9.2	7.1	9.2	7.8	15	57	18	2.1	3.7	1.4	3.2
9	6.8	7.4	7.4	12	7.8	7.1	47	12	4.4	3.9	1.1	2.6
10	6.8	5.9	7.1	12	7.8	5.2	42	12	3.7	5.9	1.4	2.6
11	8.0	7.1	3.0	11	7.8	5.5	57	7.8	3.7	4.2	1.9	2.0
12	7.6	7.8	1.8	9.6	7.4	7.1	61	9.2	3.0	3.2	1.6	2.6
13	7.2	8.2	1.8	17	7.4	12	47	19	3.0	3.0	1.2	2.1
14	6.7	8.2	3.5	22	9.2	30	42	31	3.2	3.9	1.3	2.8
15	6.3	3.5	6.3	31	12	13	37	25	3.2	2.6	1.4	5.2
16	5.9	3.0	6.7	20	8.7	21	35	19	2.8	2.6	1.4	4.4
17	5.5	2.1	8.2	8.7	6.7	30	33	19	1.9	2.1	.9	4.4
18	6.7	3.5	7.4	7.8	5.2	33	31	13	2.8	1.8	.9	4.8
19	7.1	6.3	7.1	3.9	4.8	66	33	12	2.8	1.9	3.5	5.9
20	6.7	8.2	7.4	3.7	3.5	40	31	11	2.6	1.4	3.0	4.2
21	11	9.2	8.2	4.8	2.8	45	29	10	3.0	1.4	2.6	5.2
22	11	10	7.8	12	1.8	90	33	13	3.2	1.2	2.1	7.4
23	13	11	7.1	15	1.9	41	42	17	2.6	1.0	1.8	5.2
24	13	11	5.5	17	1.9	41	37	14	1.8	.8	1.9	5.9
25	10	10	2.8	15	1.7	31	31	14	1.8	.9	1.7	4.2
26	9.6	9.2	3.9	13	1.8	33	27	14	3.7	.9	1.2	5.2
27	9.2	12	1.2	11	1.4	32	25	11	3.9	.8	1.0	4.4
28	8.2	12	.3	13	2.1	31	24	10	3.5	.8	1.0	3.5
29	8.2	14	.7	3.7		22	24	9.2	4.4	.9	.9	4.2
30	7.8	13	15	3.9		5.9	22	7.4	4.8	.9	.8	3.0
31	8.2		10	4.8		25		7.1		1.0	.8	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13	4.1	7.42	0.061	0.07
November	14	2.1	8.45	.069	.08
December	18	.3	7.62	.062	.07
January	31	3.7	11.3	.093	.11
February	12	1.4	5.57	.046	.05
March	90	1.9	28.5	.234	.27
April	328	22	67.4	.552	.62
May	31	7.1	15.5	.127	.15
June	7.1	1.8	3.34	.027	.03
July	5.9	.8	2.23	.018	.02
August	3.5	.8	1.45	.012	.01
September	7.4	.9	3.72	.030	.03
The year	328	.3	13.5	.111	1.51

St. Joseph River at Mottville, Mich.

Location.- Float gage in NE¼ sec. 6, T. 8 S., R. 12 W., at hydroelectric plant of Michigan Gas and Electric Co., at Mottville, 5 miles below mouth of Fawn River. Zero of gage 759.5 feet above mean sea level.

Records available.- December 1923 to September 1934.

Average discharge.- 10 years (1924-34), 1,386 second-feet.

Extremes.- Maximum discharge during year, 4,400 second-feet Apr. 9 (gage height, 2.00 feet); minimum, 158 second-feet July 23 (gage height,-1.40 feet); minimum daily discharge, 349 second-feet July 23.

1924-1934: Maximum discharge, 8,250 second-feet April 20, 1926 (gage height, 4.4 feet); minimum, 20 sscond-feet Sept. 7, 1930; minimum gage height,-1.90 feet July 26, 27, 1931; minimum daily discharge, 78 second-feet Aug. 25, 1929.

Remarks.- Records fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	920	1,450	1,150	760	1,210	865	1,270	1,840	975	564	456	464
2	1,270	1,580	1,390	975	1,390	1,030	1.150	1,840	975	442	485	500
3	1,210	1,390	1,090	1,390	975	1,030	1,580	1,520	865	500	464	434
4	1,270	1,270	1,270	1,210	920	865	2,650	1,580	712	548	401	471
5	1.210	865	1,390	1,090	1,150	1,030	3,500	1,580	865	500	381	493
6	975	1,150	1,210	1,150	1,210	1,090	3,800	1,330	812	500	394	540
7	1,210	1,090	1,330	865	1,030	1,090	4,250	1,330	1,030	564	434	665
8	975	975	1,390	1,270	1,150	1,150	4,250	1,520	920	564	471	622
9	1,210	1,150	865	1,330	1,090	1,030	4,400	1,330	812	548	471	548
10	1,330	1,030	427	1,150	975	1,030	4,100	1,270	665	622	580	493
11	1,150	760	1,150	1,210	760	865	3,950	1,330	760	665	493	580
12	1,150	760	865	812	1,030	920	3,800	975	920	622	387	564
13	1,210	1,090	1,210	1,210	865	1,090	3,650	1,150	1,030	622	401	760
14	812	975	975	920	975	1,090	3,350	1,210	760	580	464	622
15	812	1,030	865	1,580	920	975	3,210	1,270	865	524	471	712
16	1,150	1,030	1,030	1,270	865	1,030	3,070	1,330	760	540	580	540
17	1,090	920	712	1,330	975	1,030	2,790	1,210	665	532	580	478
18	865	920	1,030	1,210	712	975	2,650	1,390	812	478	548	622
19	975	665	1,150	1,330	865	1,450	2,790	1,330	1,090	622	407	622
20	1,090	1,150	1,090	1,150	812	1,030	2,650	1,150	920	442	471	665
21	865	1,210	975	1,030	975	1,210	2,510	1,150	665	485	420	548
22	920	1,330	1,150	975	920	1,270	2,230	1,150	622	374	427	622
23	1,330	1,090	1,030	1,150	1,030	1,210	2,100	1,330	665	349	493	556
24	1,640	1,150	975	1,270	712	1,150	2,650	1,150	712	548	449	493
25	1.710	1,210	865	1,390	760	1,090	2,100	1,210	712	493	401	524
26	1,520	865	1,090	975	865	1,090	1,710	920	920	420	394	548
27	1,580	1,270	975	1,030	920	1,330	1,970	812	622	508	420	540
28	1,580	1,450	1,030	975	1,090	1,270	1,970	975	580	478	580	580
29	1,270	1,270	1,030	1,150		1,450	2,230	1,030	622	420	449	665
30	1,330	920	865	1,210		1,580	1,840	920	622	442	427	580
31	1,580		760	1,150		1,640		1,030		456	622	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,710	812	1,200		
November	1,580	665	1,100		
December	1,390	427	1,043		
January	1,580	760	1,146		
February	1,390	712	970		
March	1,640	865	1,128		
April	4,400	1,150	2,806		
May	1,840	812	1,263		
June	1,090	580	798		
July	665	349	515		
August	622	381	465		
September	760	434	568		
The year	4,400	349	1,082		

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St. Joseph River at Niles, Mich.

Location.- Water-stage recorder in sec. 26, T. 7 S., R. 17 W., at Niles, 1 mile above Dowagiac Creek. Zero of gage is 634.91 feet above mean sea level.

Records available.- October 1930 to September 1934.

Extremes.- Maximum discharge during year, 8,430 second-feet Apr. 5 (gage height, 6.68 feet); minimum, 354 second-feet July 1 (gage height, 1.45 feet).
1930-34: Maximum discharge, 10,000 second-feet Apr. 18, 1933 (gage height, 7.53 feet); minimum, 244 second-feet Aug. 30, 1931.

Remarks.- Records good except those estimated because of missing gage-height record, Oct. 1-12, Jan. 18 to Feb. 5, and for periods of ice effect, Feb. 9, 10, Feb. 26 to Mar. 2, which are fair. Gage-height record furnished by city of Niles.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		2,350	1,920	2,060		1,700	3,100	2,420	1,430	466	1,050	657
2		2,500	2,160	2,060		1,900	4,380	2,440	1,270	928	773	850
3		2,720	2,070	1,850	2,000	2,350	5,870	2,200	1,410	1,030	1,310	911
4		2,220	2,130	2,200		2,320	6,400	2,130	1,410	885	839	1,050
5		1,700	2,280	2,060		2,200	8,050	2,280	1,450	1,280	800	999
6	2,000	1,980	2,200	1,840	2,130	2,630	7,300	1,860	1,510	1,280	1,060	915
7		2,200	1,990	2,130	1,970	1,990	7,120	2,130	1,390	1,180	999	926
8		2,130	2,480	1,920	1,920	2,180	6,760	2,170	1,370	791	1,010	790
9		2,130	2,170	2,500	1,900	2,130	6,580	1,940	1,220	1,250	810	813
10		2,420	1,230	1,990	1,850	1,860	6,580	1,710	914	1,030	916	1,030
11		1,820	1,570	2,060	1,800	1,660	6,040	1,850	1,140	1,280	830	988
12		1,860	1,920	2,060	1,870	1,990	5,700	1,670	1,400	1,180	911	1,010
13	2,200	2,130	1,800	1,990	2,130	2,060	5,530	1,520	1,370	1,170	1,110	1,130
14	1,990	2,500	2,000	1,790	1,920	1,530	4,680	1,770	1,390	1,180	1,050	997
15	1,850	2,280	1,680	1,980	1,850	1,920	4,680	2,170	1,150	875	1,060	909
16	2,200	2,280	1,720	2,650	1,830	1,920	4,850	1,760	1,330	1,150	1,120	1,070
17	2,280	2,060	1,920	2,280	1,420	1,850	4,070	1,710	836	1,290	1,070	1,020
18	2,060	1,920	1,780		1,600	2,130	4,520	1,740	1,220	1,170	1,060	715
19	1,770	1,850	1,990		1,660	2,130	4,520	1,720	1,450	1,070	858	942
20	1,850	2,060	2,060		1,770	2,440	4,520	1,540	1,350	901	1,170	859
21	2,280	2,580	1,770		1,670	2,060	3,800	1,690	1,330	628	1,020	940
22	3,260	2,650	1,990		2,140	2,370	3,880	1,920	1,300	922	988	969
23	3,560	2,420	2,060		1,780	2,300	3,050	1,740	1,340	1,150	944	834
24	3,400	2,500	1,640	2,200	1,780	2,170	3,640	2,020	596	1,080	933	1,130
25	3,180	1,850	1,730		1,370	1,670	3,880	1,630	1,090	1,030	684	873
26	3,320	2,200	1,990		1,400	1,990	2,440	1,800	1,410	988	773	892
27	2,880	1,990	1,650		1,400	2,580	2,880	1,150	1,240	944	1,010	1,020
28	2,430	2,350	1,770		1,500	1,650	2,510	1,430	1,200	776	911	977
29	2,470	2,390	2,200			2,060	2,800	1,370	1,180	830	870	953
30	2,500	2,920	2,130			2,080	3,020	1,510	920	1,150	900	1,110
31	2,420		1,800			2,500		1,410		1,130	900	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,560	1,770	2,319		
November	2,920	1,700	2,232		
December	2,480	1,230	1,929		
January	2,650	1,790	2,136		
February	2,140	1,370	1,809		
March	2,630	1,530	2,075		
April	8,050	2,440	4,772		
May	2,440	1,150	1,819		
June	1,510	596	1,254		
July	1,290	466	1,033		
August	1,310	684	959		
September	1,130	657	943		
The year.	8,050	466	1,937		

Elkhart River at Goshen, Ind.

Location.- Water-stage recorder in sec. 8, T. 36 N., R. 6 E., at River Avenue Bridge in Goshen, Elkhart County.

Drainage area.- 530 square miles.

Records available.- April 1931 to September 1934 in reports of U. S. Geological Survey; September 1924 to September 1927 in reports of the Indiana Department of Conservation.

Extremes.- Maximum discharge during year, 1,220 second-feet Apr. 2 (gage height, 4.41 feet); minimum, 52 second-feet June 13 (gage height, 1.40 feet); minimum daily discharge, 74 second-feet June 15 and Sept. 8.
1931-34: Maximum discharge, 3,060 second-feet Apr. 18, 1933 (gage height, 7.05 feet); minimum discharge, that of June 13, 1934; minimum gage height, 1.27 feet May 25, 30, 1932.

Remarks.- Records good except those for period of ice effect, Dec. 28-31, Jan. 31 to Mar. 1, which are poor. Some regulation at three hydroelectric plants above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	305	280	323	316	250	230	865	336	159	81	89	77
2	340	248	322	269	240	284	1,100	336	134	88	98	93
3	330	297	310	262	240	462	1,040	336	124	90	86	100
4	302	294	360	364	230	496	990	336	158	79	107	115
5	277	214	303	277	250	484	1,130	267	163	99	118	116
6	284	301	259	300	220	352	965	294	134	105	110	120
7	312	322	303	376	220	352	865	276	120	84	97	112
8	404	273	278	356	210	348	790	251	115	90	98	74
9	376	360	352	352	200	340	740	268	98	86	100	91
10	356	258	234	284	200	319	690	257	80	85	108	116
11	333	330	242	324	190	245	690	238	75	90	90	111
12	302	293	232	368	190	280	665	208	80	110	100	97
13	319	315	249	301	190	340	640	220	80	109	103	152
14	252	315	251	357	190	336	595	240	76	114	101	105
15	246	311	269	404	190	308	586	228	74	104	96	142
16	305	289	290	336	190	247	590	225	86	102	131	106
17	215	284	252	267	190	263	618	208	90	101	110	109
18	278	360	251	326	190	326	582	202	84	101	105	101
19	267	356	264	266	190	268	536	203	90	93	114	107
20	249	348	277	283	190	267	528	198	88	97	112	101
21	261	340	292	326	190	336	482	196	85	100	108	94
22	416	352	339	264	200	410	469	214	93	98	94	96
23	446	356	364	276	200	378	474	181	99	89	94	91
24	380	356	286	344	200	312	440	203	102	91	95	89
25	356	348	266	333	200	308	416	185	86	78	84	88
26	336	340	295	336	210	308	360	182	87	82	87	91
27	322	326	196	280	220	322	392	195	89	98	101	82
28	250	273	210	296	230	322	388	185	96	82	101	92
29	340	348	225	267		340	368	182	80	103	100	105
30	276	297	240	232		384	356	183	102	84	99	112
31	253		300	250		644		175		100	94	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	446	215	313	0.591	0.68
November	360	214	313	.591	.66
December	364	196	279	.527	.61
January	404	232	310	.585	.67
February	250	190	207	.391	.41
March	644	230	340	.642	.74
April	1,130	356	645	1.22	1.36
May	336	175	233	.440	.51
June	163	74	101	.191	.21
July	114	78	94.0	.177	.20
August	131	84	101	.191	.22
September	152	74	103	.194	.22
The year	1,130	74	253	.477	6.49

Kalamazoo River near Albion, Mich.

Location.- Chain gage on line between secs. 29 and 32, T. 2 S., R. 4 W., 3 miles west of Albion. Zero of gage is 919.44 feet above mean sea level.

Drainage area.- 246 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1934.

Extremes.- 1930-31, 1932-34: Maximum discharge recorded, 875 second-feet Apr. 4, 1934 (gage height, 4.16 feet); minimum, 32 second-feet June 24, 1934 (gage height, 1.24 feet).

Remarks.- Records fair except those for periods of ice effect, Jan. 30 to Mar. 1, and for estimated periods, Mar. 25, June 12-19, Aug. 13, 14, 16, 17, which are poor. Flow regulated by power plant at Albion.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					105	78	120	108	66	88	70	57
2					100	154	422	155	64	83	99	52
3					98	230	585	90	167	46	80	70
4					95	103	785	260	65	65	59	51
5					92	101	665	83	74	66	53	103
6					90	186	625	170	165	65	74	68
7					90	106	510	165	165	148	50	66
8					85	160	405	114	78	148	54	51
9					82	152	386	103	108	53	57	72
10					85	77	152	102	118	202	76	59
11					85	76	202	101	90	57	70	61
12					82	71	230	105	100	57	61	106
13					85	140	230	88	95	57	60	64
14					80	94	306	72	90	52	90	83
15					80	71	216	97	90	63	150	95
16					80	92	290	70	90	54	70	110
17					80	98	202	94	90	51	60	80
18					80	103	202	72	95	50	58	105
19					78	123	138	131	90	59	63	51
20					75	85	131	97	101	112	68	77
21					75	72	157	101	114	53	97	51
22					75	216	202	106	129	72	108	65
23					75	172	260	72	70	65	52	143
24				290	75	80	152	63	57	40	64	50
25				90	75	100	290	98	52	74	78	95
26				170	75	216	150	134	112	90	80	68
27				145	75	170	169	90	63	68	55	66
28				136	75	150	188	216	85	65	44	74
29				120		116	150	90	87	76	61	65
30				115		148	165	70	65	68	120	105
31				110		77		48		60	60	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 24-31	290	90	147	0.598	0.18
February	105	75	83.1	.338	.35
March	230	71	123	.500	.58
April	785	120	290	1.18	1.32
May	260	48	109	.443	.51
June	167	52	94.5	.384	.43
July	202	40	74.4	.302	.35
August	150	44	72.3	.294	.34
September	143	50	75.4	.307	.34
The year					

Kalamazoo River at Comstock, Mich.

Location.- Staff gage in NE¼ sec. 19, T. 2 S., R. 10 W., 95 feet below highway bridge at Comstock.

Drainage area.- 1,010 square miles.

Records available.- April to August 1931, October 1932 to September 1934.

Extremes.- 1931, 1932-34: Maximum discharge recorded, 3,290 second-feet Apr. 8, 1934 (gage height, 4.30 feet); minimum, 267 second-feet June 2, 1934; minimum gage height, 0.56 foot May 4, 1931.

Remarks.- Records fair except those for period of ice effect, Jan. 29 to Mar. 3, Mar. 10-12, which are poor. Flow regulated by power plants upstream.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					700	320	544	615	417	298	259	276
2					560	350	1,000	615	267	267	199	285
3					520	440	1,510	652	276	259	210	293
4					480	560	1,780	580	311	316	224	316
5					450	652	2,260	580	351	236	214	321
6					430	615	2,760	544	298	341	228	321
7					410	580	3,180	544	307	346	185	302
8					390	615	3,290	544	280	341	298	302
9					350	544	2,860	511	321	267	210	259
10					350	520	2,460	615	311	271	206	285
11					400	480	1,960	580	302	259	232	331
12					400	460	1,690	652	276	276	271	331
13					370	448	1,600	615	331	307	232	389
14					350	511	1,510	615	298	321	192	1,240
15					330	478	1,510	511	289	311	203	840
16				690	320	478	1,420	511	289	251	224	448
17				690	320	511	1,330	511	298	259	240	361
18				690	350	652	1,240	511	285	293	248	311
19				615	340	580	1,160	478	341	224	271	285
20				615	320	580	1,080	478	285	214	346	341
21				580	310	544	1,080	448	289	199	203	311
22				580	320	511	960	417	280	203	203	361
23				615	300	511	920	544	336	232	210	478
24				615	290	478	880	478	311	259	206	331
25				652	300	511	880	448	351	199	217	311
26				690	280	511	765	417	285	232	316	293
27				615	280	544	728	417	271	298	289	331
28				765	300	544	728	389	271	285	189	331
29				710		511	728	417	267	276	206	361
30				660		544	652	389	276	248	271	361
31				620		690		307		240	271	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 16-31	765	580	650	0.644	0.38
February	700	280	376	.372	.39
March	690	320	526	.521	.60
April	3,290	544	1,482	1.47	1.64
May	652	307	514	.509	.59
June	417	267	302	.299	.33
July	346	199	269	.266	.31
August	346	185	235	.233	.27
September	1,240	259	377	.373	.42
The year					

Kalamazoo River at Calkins Bridge, near Allegan, Mich.

Location.- Water-stage recorder in sec. 15, T. 2 N., R. 14 W., at Calkins Bridge, 6 miles northwest of Allegan and 1 mile above Swan Creek. Gage heights refer to mean sea level datum.

Drainage area.- 1,540 square miles.

Records available.- April 1929 to September 1934.

Extremes.- Maximum discharge during year, 3,180 second-feet Apr. 10 (gage height, 603.50 feet); minimum, 264 second-feet Aug. 18 (gage height, 596.11 feet); minimum daily discharge, 304 second-feet July 27.
1929-1934: Maximum discharge, 3,580 second-feet Jan. 8, 1930 (gage height, 603.82 feet); minimum, 164 second-feet Aug. 23, 1931 (gage height, 595.25 feet).

Remarks.- Records good except those for estimated periods, Nov. 16-19, Dec. 12-31, Mar. 1-16, which are fair. Flow regulated by power plant in Allegan.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,350	1,590	1,390				1,270	1,270	744	419	424	470
2	1,280	1,510	1,550				1,510	1,110	638	483	507	478
3	1,230	1,550	1,550				1,750	1,270	616	538	409	600
4	1,090	1,470	1,470				2,260	1,270	679	378	409	526
5	1,110	1,470	1,470				2,570	1,070	636	605	394	505
6	972	1,390	1,350				2,660	1,110	610	472	368	526
7	1,050	1,430	1,390				2,800	1,070	650	534	428	459
8	1,200	1,390	1,430				2,930	980	604	510	428	560
9	1,460	1,390	1,390			1,200	3,080	1,070	521	611	426	583
10	1,410	1,390	1,350				3,130	1,110	610	525	553	555
11	1,250	1,350	1,350				2,980	1,150	578	478	424	578
12	1,270	1,390					2,840	1,070	537	518	430	611
13	1,150	1,390					2,660	1,110	576	497	502	672
14	1,110	1,470					2,480	1,070	732	438	447	663
15	1,030	1,590					2,390	1,190	541	449	415	1,110
16	1,110	1,500					2,340	1,070	464	505	461	1,230
17	1,020	1,400				1,110	2,300	1,110	538	381	661	828
18	1,190	1,300				1,590	2,120	1,010	514	378	355	735
19	990	1,300				1,470	2,080	970	595	436	504	687
20	1,030	1,430				1,390	1,950	870	579	456	521	656
21	1,120	1,510	1,200			1,350	1,870	930	735	412	574	675
22	2,090	1,670				1,190	1,790	970	530	347	470	696
23	2,660	1,790				1,190	1,710	850	609	419	465	717
24	2,620	1,710				1,190	1,710	970	534	328	528	825
25	2,480	1,670				1,190	1,590	910	598	368	597	584
26	2,300	1,630				1,150	1,510	870	579	430	310	644
27	2,210	1,550				1,270	1,470	830	477	304	392	1,010
28	2,080	1,550				1,070	1,430	850	610	458	442	745
29	2,030	1,510				1,230	1,390	870	441	495	365	664
30	1,830	1,510				1,190	1,390	614	472	392	438	660
31	1,750					1,070		807		441	324	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,660	972	1,499	0.973	1.12
November	1,790	1,300	1,493	.969	1.08
December	1,550		1,280	.831	.96
January					
February					
March	1,590	1,070	1,221	.793	.91
April	3,130	1,270	2,132	1.38	1.54
May	1,270	614	1,014	.658	.76
June	744	441	585	.380	.42
July	611	304	452	.294	.34
August	661	310	451	.293	.34
September	1,230	459	675	.438	.49
The year					

Battle Creek at Battle Creek, Mich.

Location.- Staff gage in sec. 5, T. 2 S., R. 7 W., 350 feet above Verona Street Bridge, in Battle Creek.

Drainage area.- 241 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1934.

Extremes.- Maximum discharge recorded during year, 1,300 second-feet Apr. 6 (gage height, 2.48 feet); minimum, 22 second-feet Aug. 14 (gage height, 0.51 foot).
1930-31, 1932-34: Maximum discharge recorded, that of Apr. 6, 1934; minimum, probably that of Aug. 14, 1934.

Remarks.- Records good except those for estimated periods, which are fair. No record Oct. 1 to Jan. 15.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					119	75	168	153	63	35	30	*35
2					119	75	280	153	63	32	*30	*35
3					104	82	379	153	63	*37	25	30
4					104	116	695	145	60	42	30	25
5					104	145	1,200	128	63	48	30	30
6					104	136	*1,300	119	69	48	30	35
7					104	145	*1,100	119	69	66	*32	40
8					97	124	850	104	63	75	*32	*32
9					119	111	695	119	57	63	*34	*38
10					111	97	590	128	63	57	*50	*32
11					89	93	523	136	45	51	25	*35
12					82	93	491	128	51	48	30	*50
13					97	97	491	119	51	45	25	75
14					93	104	491	124	51	45	22	51
15					89	104	460	119	45	45	*26	51
16				167	89	111	410	111	51	40	*30	54
17				136	89	111	391	111	51	40	35	45
18				158	89	124	379	104	48	40	35	51
19				140	82	149	355	104	45	*35	30	51
20				136	75	162	326	89	45	30	30	42
21				128	75	153	291	82	45	30	28	*44
22				128	82	153	269	97	51	*30	30	*45
23				153	75	136	242	100	45	30	30	45
24				172	75	128	231	97	40	25	35	40
25				181	75	119	210	97	38	*28	35	40
26				186	75	119	221	93	*36	*30	35	*42
27				176	75	93	200	89	35	30	30	*43
28				191	72	104	191	75	40	38	28	45
29				100		119	172	72	*40	40	30	45
30				145		128	162	66	40	*37	30	45
31				128		128		66		*45	25	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 16-31	191	100	152	0.631	0.38
February	119	72	91.5	.380	.40
March	162	75	117	.485	.56
April	1,300	158	458	1.90	2.12
May	153	66	110	.456	.53
June	69	35	50.9	.211	.24
July	75	25	41.5	.172	.20
August	50	22	30.5	.127	.15
September	75	25	42.4	.176	.20
The year					

*Estimated.

Grand River at Grand Rapids, Mich.

Location.- Water-stage recorder in sec. 35, T. 7 N., R. 12 W., at municipal sewage pumping plant near west limits of Grand Rapids, Kent County. Zero of gage is 589.01 feet above mean sea level.

Drainage area.- 4,900 square miles.

Records available.- October 1930 to September 1934; March 1901 to September 1918 at Fulton Street Bridge, in Grand Rapids.

Extremes.- Maximum discharge during year, 9,450 second-feet Apr. 7 (gage height, 6.04 feet); minimum, 486 second-feet Aug. 7 (gage height, -4.64 feet).
1930-34: Maximum discharge, 11,500 second-feet Apr. 11, 1933 (gage height, 7.13 feet); minimum, probably that of Aug. 7, 1934.
A stage of 19.3 feet occurred at the Fulton Street gage on Mar. 27, 1904 (discharge not determined). Zero of Fulton Street gage was 0.55 foot lower than that of present gage.

Remarks.- Records good except those for period of ice effect, Feb. 22 to Mar. 1, those for estimated periods, May 9-14, Sept. 7-16, and those below 800 second-feet, which are fair. Flow slightly regulated by power plants upstream. The city of Grand Rapids diverts about 30 second-feet above gage; this flow is returned to river 1 mile below gage, but is not included in discharge. Gage-height record furnished by city of Grand Rapids.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,810	1,880	2,970	3,200	2,550	1,400	2,340	2,550	1,050	842	530	626
2	1,810	1,810	3,200	3,120	2,620	1,570	2,830	2,340	984	842	586	962
3	1,460	1,810	3,200	2,830	2,410	2,000	4,460	2,070	1,000	787	599	1,260
4	1,570	1,810	3,200	2,830	2,410	3,040	6,970	2,140	920	640	735	1,160
5	1,340	1,940	3,040	2,760	2,270	3,520	8,390	2,000	941	670	718	941
6	1,290	1,750	2,970	2,760	2,140	3,360	9,170	1,940	880	670	686	1,240
7	1,570	1,690	2,760	2,760	2,070	3,280	9,310	1,940	941	702	540	1,300
8	1,630	1,880	2,620	2,900	1,940	2,970	9,170	1,880	941	686	586	1,200
9	1,810	1,810	2,480	2,760	1,750	2,690	8,650	1,860	1,050	735	640	1,150
10	1,690	1,630	2,340	2,760	1,810	2,200	8,140	1,840	920	752	718	1,100
11	1,690	1,570	2,140	2,760	2,140	2,140	7,540	1,820	861	824	599	1,050
12	1,570	1,810	1,690	2,690	2,070	1,880	7,080	1,800	900	842	718	1,000
13	1,290	1,630	1,750	2,760	1,810	1,880	7,080	1,780	900	752	670	1,000
14	1,120	1,690	1,880	2,830	1,750	1,750	6,970	1,760	861	686	670	1,000
15	1,100	1,690	2,000	2,900	1,690	1,690	6,640	1,750	824	640	599	1,000
16	1,050	1,370	2,550	2,830	1,570	1,810	6,310	1,690	752	626	655	1,050
17	1,160	1,400	2,690	2,070	1,630	3,050	5,700	1,690	805	640	599	1,100
18	1,140	1,690	2,760	2,140	1,570	4,730	5,400	1,750	900	640	586	1,030
19	1,070	1,570	2,760	2,340	1,630	5,200	5,300	1,570	752	626	612	941
20	1,070	1,690	2,690	2,340	1,570	5,000	4,910	1,570	752	574	655	962
21	1,560	1,750	2,690	2,480	1,510	4,730	4,550	1,460	962	540	599	1,030
22	2,410	1,940	2,760	2,480	1,480	4,370	4,460	1,340	920	502	586	1,000
23	2,760	1,810	2,410	2,550	1,440	3,760	4,010	1,570	1,050	626	586	1,100
24	3,040	1,880	2,270	2,620	1,400	3,120	3,920	1,400	880	562	599	1,100
25	3,600	2,000	2,070	2,830	1,400	2,970	3,600	1,460	842	502	599	920
26	3,040	2,070	1,460	2,900	1,400	2,550	3,520	1,370	1,050	494	612	1,190
27	3,040	1,940	2,070	2,900	1,400	2,410	3,280	1,140	1,100	530	612	1,340
28	2,760	2,000	2,340	2,900	1,400	2,340	3,040	1,220	1,160	551	586	1,400
29	2,550	2,070	2,200	2,480		2,140	2,760	1,160	1,030	540	540	1,570
30	2,000	2,550	2,340	2,620		2,140	2,550	1,240	962	586	530	1,400
31	1,880		2,550	2,480		2,200		1,190		530	562	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,600	1,050	1,835	0.374	0.43
November	2,550	1,370	1,804	.368	.41
December	3,200	1,460	2,479	.506	.58
January	3,200	2,070	2,696	.550	.63
February	2,620	1,400	1,815	.370	.39
March	5,200	1,400	2,835	.579	.67
April	9,310	2,340	5,602	1.14	1.27
May	2,550	1,140	1,687	.344	.40
June	1,160	752	930	.190	.21
July	842	494	650	.133	.15
August	735	530	617	.126	.15
September	1,570	626	1,104	.225	.25
The year	9,310	494	2,002	.409	5.54

Cedar River at East Lansing, Mich.

Location.- Water-stage recorder in sec. 18, T. 4 N., R. 1 W., at East Lansing 4 miles above mouth. Zero of gage is 824.96 feet above mean sea level.

Records available.- March 1931 to September 1934. August 1902 to December 1903 at a site three-quarters of a mile downstream.

Extremes.- Maximum discharge during year, 1,340 second-feet Apr. 4 (gage height, 5.55 feet); minimum, 3.8 second-feet July 12. Lower discharges might have occurred during period of no record.

1902-3, 1931-34: Maximum mean daily discharge, 2,700 second-feet Apr. 15, 1903 (gage height, 10.07 feet, old datum); minimum discharge, 3 second-feet July 31, 1931.

Maximum stage known, about 14.5 feet during flood of 1921 (discharge not determined).

Remarks.- Records excellent except those for periods of ice effect, Jan. 30, Feb. 8-13, which are fair. No record for periods when discharge is not given. Gage-height record furnished by Michigan State College.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		50	195	128	66	36	306	116	34			
2		61	155	140	70	29	720	107	32			
3		79	136	121	58	40	890	104	36			
4		84	143	110	49	50	1,280	102	24			
5		84	149	116	53	56	1,170	96	38	4.7		
6		77	130	168	47	58	920	91	22	5.2		
7		70	116	175	44	54	698	82	27	18		
8		66	127	162	43	52	579	74	29	15		
9		66	108	152	42	49	477	72	31	10		
10		64	82	143	45	41	450	73	31	5.5		
11		64	79	118	48	34	527	64	15	4.3		
12		64	79	127	48	32	584	71	8.5	3.8		
13		72	77	118	47	42	513	62	16	3.9		
14		89	79	140	46	49	442	68	22	4.0		
15		66	84	143	41	36	408	68	22	4.1		
16		77	181	112	42	46	490	66	23	4.0		
17		66	202	77	36	60	527	58	21	3.9		
18		60	185	104	39	99	442	51	24	3.9		
19		60	158	104	48	118	342	58		3.8		
20		66	140	82	37	104	284	42		3.8	7.0	
21	50	79	146	79	44	94	254	46		3.8		
22	298	113	133	84	41	75	226	58		4.1		
23	251	118	121	131	32	63	229	58		4.2		
24	178	107	113	162	31	63	219	53		4.1		
25	115	99	85	149	41	61	205	49		4.4		
26	99	96	63	143	42	62	185	48		4.5		
27	81	91	58	124	42	52	165	37				
28	74	91	57	116	46	50	149	41			5.0	
29	67	94	56	71		52	136	39				
30	60	182	56	70		66	124	38				
31	58		66	68		93		36				

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 21-31	298	50	121	0.341	0.14
November	182	50	81.8	.230	.26
December	202	56	115	.324	.37
January	175	68	121	.341	.39
February	70	31	45.3	.128	.13
March	118	29	58.6	.165	.19
April	1,280	124	465	1.31	1.46
May	116	36	65.4	.184	.21
June 1-18	38	8.5	25.3	.071	.05
July 5-26	18	3.8	5.59	.016	.01
August					
September					
The year					

Thornapple River near Caledonia, Mich.

Location.- Staff gage in sec. 22, T. 5 N., R. 10 W., in tailrace of LaBarge power plant, 2½ miles northeast of Caledonia. Gage heights are referred to mean sea level datum.

Drainage area.- 773 square miles. Erroneously published as 733 square miles in Water-Supply Paper 744.

Records available.- October 1930 to September 1934.

Extremes.- Maximum mean daily discharge during year, 2,090 second-feet Apr. 4-6 (gage height, 682.6 feet); minimum daily discharge 182 second-feet Aug. 15 (gage height, 680.0 feet).
1930-34: Maximum daily discharge, 2,240 second-feet Mar. 30, 31, 1932 (gage height, 682.7 feet); minimum, 138 second-feet Aug. 11, 1931.

Remarks.- Records fair. Flow regulated by storage at LaBarge power plant. Gage-height record furnished by Consumers Power Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.
1	362	497	597	546	405	362	497	405	362	362	362	362
2	362	450	650	597	405	362	890	362	362	362	284	362
3	362	450	705	546	362	497	1,440	362	362	362	362	362
4	362	450	705	497	405	597	2,090	362	322	362	362	362
5	362	450	705	497	362	597	2,090	362	362	362	362	362
6	362	405	650	497	362	546	2,090	362	362	284	362	362
7	362	405	597	497	362	546	1,950	362	362	362	362	362
8	405	450	546	546	362	497	1,810	362	362	362	362	284
9	405	405	497	497	362	405	1,440	497	362	362	362	362
10	362	405	546	497	362	362	1,230	405	362	362	284	362
11	405	405	405	497	362	405	1,130	405	405	362	362	362
12	405	362	362	450	362	405	1,130	405	362	362	362	284
13	362	405	497	450	362	362	1,130	405	362	362	362	362
14	362	450	450	497	362	362	1,130	362	362	362	362	362
15	362	405	450	546	362	362	1,130	362	362	362	182	322
16	362	362	497	497	362	362	960	362	362	362	362	362
17	362	362	497	450	362	497	890	362	362	362	362	362
18	362	405	597	497	362	1,230	825	362	362	362	362	362
19	362	362	597	450	362	1,130	765	362	362	362	362	362
20	362	405	597	405	362	1,230	705	362	362	362	362	362
21	284	405	546	405	362	1,040	705	362	362	362	362	322
22	765	450	497	405	362	890	597	362	362	362	362	362
23	890	450	497	450	362	650	597	362	362	362	362	362
24	960	322	450	497	284	497	546	362	362	362	362	362
25	1,130	450	450	497	362	450	546	362	362	362	362	362
26	1,130	497	362	497	362	450	497	362	284	322	405	322
27	1,040	497	362	497	362	450	497	405	362	362	362	362
28	890	450	362	497	362	405	450	362	362	362	362	362
29	705	450	405	284		362	405	362	362	322	362	362
30	597	597	405	405		362	450	362	362	362	362	362
31	546		497	405		405		362		362	362	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,130	284	527	0.682	0.79
November	597	322	429	.555	.62
December	705	362	515	.666	.77
January	597	284	477	.617	.71
February	405	284	364	.471	.49
March	1,230	362	551	.713	.82
April	2,090	405	1,020	1.32	1.47
May	497	362	375	.485	.56
June	405	284	360	.466	.52
July	362	284	357	.462	.53
August	405	182	353	.457	.53
September	362	284	353	.457	.51
The year	2,090	182	474	.613	8.32

Muskegon River at Evart, Mich.

Location.- Chain gage in sec. 34, T. 18 N., R. 8 W., on Pere Marquette Railroad bridge at east edge of Evart. Chain gage at same datum was used prior to Apr. 13, 1934, at highway bridge 100 feet upstream.

Drainage area.- 1,450 square miles.

Records available.- November 1930 to June 1931, January to September 1934.

Extremes.- 1930-31, 1934: Maximum discharge recorded, 3,010 second-feet Apr. 6, 1934 (gage height, 10.78 feet); minimum, 275 second-feet July 29, 1934 (gage height, 6.70 feet).

Remarks.- Records good except those for period of ice effect, Jan. 29 to Mar. 6, Mar. 9-14, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					670	600	865	1,120	628	389	309	328
2					660	650	1,330	1,120	568	368	347	368
3					650	720	1,750	1,120	539	347	368	460
4					640	900	2,530	1,120	539	347	347	485
5					620	1,200	3,010	1,120	512	347	347	460
6					600	1,400	2,930	1,050	485	347	328	435
7					580	1,610	2,770	1,050	485	368	328	435
8					560	1,330	2,850	985	460	389	347	435
9					530	1,200	2,850	1,050	460	368	347	435
10					570	1,050	2,850	1,050	460	368	347	435
11					620	930	2,850	985	460	347	328	435
12					680	840	2,690	985	460	347	328	435
13					730	750	2,460	1,050	460	347	309	435
14					770	660	2,380	1,050	435	347	309	460
15					800	865	2,300	985	435	328	309	485
16					830	768	2,140	985	389	309	309	539
17					800	800	1,980	985	412	309	309	512
18				768	720	1,060	1,900	985	435	309	309	485
19				800	800	1,120	1,750	920	412	309	309	485
20				832	720	1,120	1,680	920	412	309	309	460
21				704	700	1,120	1,610	855	389	292	309	485
22				800	680	1,120	1,540	920	389	292	309	568
23				557	600	1,260	1,470	920	389	292	309	597
24				704	560	1,190	1,540	920	368	292	328	597
25				586	560	1,060	1,400	855	368	292	328	597
26				704	560	1,470	1,330	822	412	292	309	568
27				557	560	995	1,260	790	435	292	309	597
28				1,260	560	995	1,260	758	435	292	328	568
29				1,000		800	1,260	725	412	275	328	597
30				720		832	1,190	692	389	309	328	568
31				680		800		660		328	328	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 18-31	1,260	557	762	0.526	0.27
February	830	530	655	.452	.47
March	1,610	600	1,013	.699	.81
April	3,010	865	1,991	1.37	1.53
May	1,120	660	953	.657	.76
June	628	368	448	.309	.34
July	389	275	327	.226	.26
August	368	309	324	.223	.26
September	597	328	492	.339	.38
The year					

Muskegon River at Newaygo, Mich.

Location.- Staff gage in sec. 24, T. 12 N., R. 13 W., in tailrace of power plant operated by Consumers Power Co. at Newaygo.

Drainage area.- 2,350 square miles.

Records available.- October 1930 to September 1934. June 1901 to December 1906 at a site above Newaygo.

Extremes.- Maximum daily discharge during year, 3,840 second-feet Dec. 5-7 (gage height, 49.0 feet); minimum, 390 second-feet July 13 (gage height, 46.2 feet). 1901-6, 1930-34: Maximum daily discharge, 8,000 second-feet May 3, 1933 (gage height, 50.7 feet); minimum, that of July 13, 1934.

Remarks.- Records fair. Flow regulated at Croton Dam, 18 miles upstream, and by power plant at Newaygo. Gage-height record furnished by Consumers Power Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	1,640	1,120	1,410	2,390	2,390	1,770	1,910	960	885	440	960
2	1,040	1,640	1,120	1,640	1,770	2,060	2,220	2,220	1,040	960	680	555
3	960	1,770	1,410	1,910	1,770	1,910	2,570	2,220	960	960	885	555
4	960	1,640	2,390	1,910	1,770	1,770	2,390	1,910	960	960	815	1,120
5	885	1,220	3,840	1,910	1,910	2,220	2,390	1,910	960	815	555	885
6	960	1,770	3,840	1,910	2,060	2,570	2,220	1,120	960	680	745	495
7	1,120	1,770	3,840	1,640	2,060	2,570	2,220	1,520	960	680	885	615
8	1,040	1,770	3,610	1,910	2,060	2,570	2,060	1,640	960	815	815	555
9	1,310	1,770	1,910	2,060	2,060	2,220	2,390	1,770	960	745	1,040	555
10	1,520	1,770	1,910	2,060	2,220	2,060	2,570	1,770	960	615	1,040	555
11	1,770	1,520	2,060	2,060	2,220	1,910	2,570	1,410	1,040	555	960	680
12	1,310	1,120	2,220	2,060	2,220	2,060	2,760	1,410	1,040	555	960	815
13	1,410	1,310	2,220	1,910	2,220	2,390	3,170	1,120	1,040	390	885	885
14	1,520	1,310	2,220	1,910	2,760	2,390	3,170	1,410	1,040	495	815	440
15	1,410	1,640	2,060	2,220	2,960	2,220	2,390	1,640	960	555	960	680
16	1,520	1,770	1,910	2,060	2,220	2,220	2,760	1,640	960	555	1,040	555
17	1,770	1,640	1,220	1,770	2,220	2,060	3,170	1,410	885	745	1,120	885
18	1,640	1,520	1,640	1,770	1,640	1,910	3,170	1,520	1,040	680	1,120	1,040
19	1,640	1,120	1,770	1,640	2,220	1,640	3,170	1,040	815	745	960	815
20	1,520	1,040	1,770	1,520	2,220	3,390	3,170	960	680	555	960	960
21	1,640	1,120	1,910	1,220	2,220	3,390	3,170	1,410	745	495	1,040	1,040
22	1,220	1,520	1,770	1,520	2,220	2,570	2,390	1,220	555	495	960	960
23	1,640	1,640	1,520	2,220	2,220	2,390	2,960	960	680	680	815	815
24	1,770	1,520	1,770	2,390	1,910	2,060	3,170	960	885	885	960	960
25	1,640	1,120	1,520	2,760	1,910	1,770	3,170	885	745	815	885	960
26	1,770	1,040	1,640	2,570	2,060	2,220	3,170	960	885	815	815	1,120
27	1,770	1,520	1,640	2,390	2,390	2,390	2,760	960	680	680	885	1,120
28	1,770	1,770	1,770	2,060	2,390	2,390	2,220	960	680	885	885	1,120
29	1,220	1,520	1,640	2,390		2,390	2,220	1,040	745	615	885	1,220
30	1,640	1,120	1,410	2,570		2,220	2,220	960	615	745	885	1,120
31	1,640		1,310	2,390		1,910		960		815	885	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,770	885	1,421	0.605	0.70
November	1,770	1,040	1,488	.633	.71
December	3,840	1,120	1,999	.851	.98
January	2,760	1,220	1,992	.848	.98
February	2,960	1,640	2,153	.916	.95
March	3,390	1,640	2,265	.964	1.11
April	3,170	1,770	2,658	1.13	1.26
May	2,220	885	1,381	.588	.68
June	1,040	555	880	.374	.42
July	960	390	705	.300	.35
August	1,120	440	890	.379	.44
September	1,220	440	835	.355	.40
The year	3,840	390	1,552	.660	8.98

Manistee River near Sherman, Mich.

Location.- Chain and staff gages on line between sec. 36, T. 24 N., R. 12 W., and sec. 31, T. 24 N., R. 11 W., 150 feet above mouth of Wheeler Creek and three-quarters of a mile north of Sherman.

Drainage area.- 900 square miles.

Records available.- July 1903 to May 1916, November 1930 to June 1931, January to September 1934.

Extremes.- Maximum discharge recorded during year, 2,550 second-feet Apr. 12 (gage height, 12.61 feet); minimum, about 700 second-feet Feb. 10.
1903-16, 1930-31, 1934: Maximum discharge, 3,500 second-feet Mar. 25, 1913 (gage height, 7.0 feet, former datum); minimum, 580 second-feet Jan. 17, 1916 (gage height, 1.00 foot, former datum).

Remarks.- Records good except those for estimated periods, Jan. 29 to Feb. 15, Feb. 21-27, Mar. 9-12, May 23-27, June 17, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					1,200	920	970	1,200	945	920	848	805
2					1,100	1,000	1,130	1,200	945	920	848	805
3					1,100	970	2,050	1,200	945	871	848	945
4					1,000	1,240	2,290	1,200	920	871	871	970
5					1,000	1,480	2,170	1,160	895	895	848	1,000
6					980	1,360	2,290	1,100	895	895	826	970
7					900	1,160	2,290	1,130	945	920	826	920
8					830	1,100	2,230	1,060	920	895	826	895
9					860	1,000	2,230	1,060	1,060	895	826	920
10					700	900	2,350	1,060	1,060	895	895	895
11					800	1,000	2,550	1,030	1,000	895	871	895
12					900	1,300	2,550	1,060	1,000	871	848	920
13					880	1,630	2,410	1,030	970	871	848	945
14					860	1,000	2,110	1,060	970	871	848	920
15					900	1,100	1,830	1,030	945	871	826	946
16					1,000	1,030	1,680	1,030	945	848	848	1,000
17					970	1,060	1,630	1,000	895	848	805	1,000
18					1,060	1,000	1,480	1,000	920	848	826	1,000
19				895	945	1,030	1,530	1,000	945	848	848	970
20				895	920	1,030	1,580	970	920	848	826	970
21				945	900	1,060	1,580	1,000	945	848	826	970
22				970	860	1,030	1,530	1,030	920	826	805	1,200
23				1,160	830	970	1,440	1,050	920	826	826	1,130
24				1,130	800	970	1,360	1,020	895	826	805	1,060
25				1,130	780	920	1,320	990	895	826	805	1,060
26				1,130	760	970	1,360	970	1,200	826	805	1,030
27				1,100	750	945	1,280	960	945	826	805	1,100
28				1,130	805	945	1,280	945	970	826	826	1,130
29				1,800		945	1,200	945	945	826	805	1,100
30				1,200		945	1,200	945	920	826	826	1,060
31				1,000		945		945		848	805	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 19-31	1,800	895	1,114	1.24	0.60
February	1,200	700	906	1.01	1.05
March	1,630	900	1,063	1.18	1.36
April	2,550	970	1,763	1.96	2.19
May	1,200	945	1,045	1.16	1.34
June	1,200	895	953	1.06	1.18
July	920	826	862	.958	1.10
August	895	805	832	.924	1.07
September	1,200	805	984	1.09	1.22
The year					

Shiawassee River at Owosso, Mich.

Location.- Water-stage recorder in sec. 13. T. 7 N., R. 2 E., at north city limits of Owosso. Zero of gage is 707.65 feet above mean sea level. Water-stage recorder 90 feet upstream from Shiawassee Street bridge, with zero 713.28 feet above mean sea level, was used prior to Oct. 15, 1933.

Drainage area.- 538 square miles.

Records available.- March 1931 to September 1934.

Extremes.- Maximum discharge recorded during year, 1,440 second-feet Apr. 4 (gage height, 5.16 feet); minimum discharge, 0.2 second-foot July 27 (gage height, 1.12 feet); minimum daily discharge, 2.0 second-feet July 28.
1931-34: Maximum discharge, 1,630 second-feet May 12, 1932 (gage height, 6.51 feet on old gage); minimum, that of July 27, 1934.
Maximum stage known, 726 feet above mean sea level at old gage during an ice jam in 1918.

Remarks.- Records good except those for estimated periods, Oct. 11-21, Jan. 31 to Mar. 14, which are poor. No records for periods omitted. Flow regulated by power plant at Shiawasseetown. Gage-height record furnished by city of Owosso.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	120	315		180	100	446	255	52	20	16	
2	122	140	274		180	110	648	214	46	23	33	
3	102	146			170	130	802	219	43	18	32	
4	83	158			170	150	1,380	222	46	22	32	
5	93	177			160	140	1,080	205	48	19	15	
6	78	166			150	130	1,080	175	27	37	21	12
7	96	140			140	130	1,060	193	45	18	14	
8	91	125			140	130	960	166	21	17	13	
9	92	122			130	130	835	143	36	30	26	
10	92	125			130	130	810	150	34	22	19	
11	90	115			150	130	910	135	35	63	12	
12	80	140			140	130	910	138	38	66	16	
13	80	140			140	150	835	144	36	38	7.0	
14	80	140			140	168	785	125	41	16	7.4	
15	70	130			130	166	715	135	56	32	15	
16	80	130			130	163	810	118	4.6	46		
17	90	130			130	190	760	101	8.6	18		
18	90	130			130	328	692	113	36	30		64
19	90	130			130	211	648	105	37	18	.	
20	80	130			120	216	580	100	34	24	5.0	
21	80	140			110	172	504	96	44	19		
22	114	158			100	194	436	101	35	13		
23	90	168			100	155	400	76	26	10		
24	161	191			100	163	380	89	23	14		
25	128	160			100	177	366	78	23	11		
26	129	161			100	132	352	68	33	32		62
27	120	158			100	117	328	66	46	15	11	52
28	115	166			100	123	299	60	17	2.0		58
29	116	151				153	289	59	32	3.7		64
30	179	305				122	277	58	16	27		47
31	78			190		169		47		19		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	179	70	101	0.188	0.22
November	305	116	150	.279	.31
December					
January					
February	180	100	132	.245	.26
March	328	100	155	.288	.33
April	1,380	277	679	1.26	1.41
May	255	47	128	.238	.27
June	56	4.6	34.0	.063	.07
July	66	2.0	24.0	.045	.05
August					
September					
The year					

Flint River at Genesee, Mich.

Location.- Wire gage in sec. 10, T. 8 N., R. 7 E., at highway bridge at Genesee. Zero of gage is 695.84 feet above mean sea level.

Drainage area.- 593 square miles.

Records available.- March 1931 to September 1934.

Extremes.- Maximum discharge recorded during year, 2,480 second-feet Apr. 7 (gage height, 20.72 feet); minimum, 21 second-feet July 29 (gage height, 12.74 feet).
1931-34: Maximum discharge recorded, 2,530 second-feet Apr. 4, 1933 (gage height, 20.64 feet); minimum, 19 second-feet Aug. 22-24, 26, 1931 (gage height, 12.62 feet).

Remarks.- Records good except those for periods of ice effect, Dec. 14-17, Dec. 25 to Jan. 8, Jan. 29 to Mar. 27, which are poor. Diversions below station for municipal use at Flint. Gage-height record furnished by city of Flint.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	151	517	440	260	130	590	242	81	38	47	48
2	119	143	517	430	250	150	890	242	79	36	61	67
3	104	151	565	430	230	190	1,160	222	75	49	86	68
4	104	160	740	440	220	270	1,770	212	72	45	61	67
5	104	160	541	460	210	260	1,890	203	69	42	58	61
6	96	151	517	500	200	260	2,380	185	69	48	56	56
7	96	143	489	540	200	250	2,430	185	75	57	53	54
8	104	151	397	580	190	250	2,030	185	143	57	51	72
9	104	151	350	615	180	250	1,530	185	119	54	262	64
10	104	151	305	565	180	250	1,250	176	104	52	242	64
11	89	143	305	541	180	250	1,100	160	112	51	176	62
12	89	151	305	493	170	240	1,040	151	86	48	127	68
13	82	168	305	421	170	240	950	151	81	45	104	71
14	74	176	310	373	170	240	890	151	74	48	78	62
15	65	176	350	373	160	240	860	151	69	51	57	67
16	69	242	440	350	160	250	830	135	64	48	61	74
17	74	252	520	373	160	300	830	135	56	42	72	85
18	72	242	665	421	150	270	770	127	61	39	62	82
19	67	212	615	421	150	260	715	127	64	36	48	76
20	68	203	590	350	150	400	640	119	57	34	36	69
21	89	212	541	327	140	580	565	119	62	34	40	65
22	112	262	493	350	140	570	493	119	62	34	45	61
23	135	252	445	350	130	550	493	119	60	31	45	67
24	168	283	421	327	130	520	469	112	54	29	43	74
25	185	272	400	327	120	490	445	112	52	28	42	83
26	203	222	380	327	120	400	373	104	57	25	39	86
27	212	203	370	327	120	330	327	104	67	28	39	96
28	185	203	360	327	120	305	305	96	67	23	36	104
29	176	283	350	300		272	272	96	56	21	34	104
30	168	665	380	280		222	262	89	40	43	33	96
31	151		450	270		222		85		38	31	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	212	65	116	0.196	0.23
November	665	143	211	.356	.40
December	740	305	449	.757	.87
January	615	270	407	.686	.79
February	260	120	170	.287	.30
March	580	130	304	.513	.59
April	2,430	262	952	1.61	1.80
May	242	85	148	.250	.29
June	143	40	73.0	.123	.14
July	57	21	40.5	.068	.08
August	262	31	71.8	.121	.14
September	104	48	72.4	.122	.14
The year	2,430	21	251	.423	5.77

Flint River near Flint, Mich.

Location.- Water-stage recorder in SW¼ sec. 4, T. 7 N., R. 6 E., at sewage treatment plant 2 miles below Flint. Zero of gage is 678.80 feet above mean sea level.

Drainage area.- 927 square miles.

Records available.- August 1932 to September 1934. September 1903 to March 1904 at site 5 miles upstream, at Flint.

Extremes.- Maximum discharge during year, 4,200 second-feet Apr. 4 (gage height, 8.13 feet); minimum, 9.0 second-feet Aug. 7; minimum daily discharge, 14 second-feet Aug. 7; minimum gage height, 2.43 feet June 4.
1932-34: Maximum discharge, 5,350 second-feet Apr. 1, 1933 (gage height, 9.05 feet); minimum, that of Aug. 7, 1934.

Remarks.- Records good. Some regulation at storage dams upstream. The city of Flint diverts water for municipal and industrial use above gage, but sewage from the city is included in flow at the gage. Gage-height record furnished by the city of Flint.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	411	187	875	720	600	120	1,180	514	35	102	35	104
2	334	190	865	810	472	128	1,700	444	32	106	263	52
3	184	208	971	810	337	140	2,260	370	30	120	211	141
4	290	248	1,210	610	175	132	3,720	308	35	102	78	78
5	227	229	1,030	810	188	196	3,050	267	44	124	39	78
6	147	151	838	865	238	298	3,270	325	41	128	27	98
7	204	196	735	638	255	294	3,380	249	37	120	14	72
8	164	251	570	810	222	289	2,830	225	72	95	17	78
9	221	246	571	810	113	272	2,250	263	229	106	340	57
10	208	206	388	810	184	218	1,720	320	192	106	398	69
11	135	109	352	678	184	180	1,800	316	125	136	167	170
12	84	113	200	596	192	180	1,720	250	91	109	204	292
13	120	140	338	605	167	180	1,500	143	132	106	175	88
14	163	196	307	610	180	246	1,470	216	88	91	140	84
15	37	124	462	600	175	143	1,310	252	48	75	136	158
16	72	78	833	610	180	163	1,680	140	46	84	66	246
17	167	213	838	570	175	432	1,370	175	37	84	32	52
18	109	192	892	384	155	805	1,280	171	78	84	35	150
19	106	156	735	329	156	660	1,210	136	57	81	57	48
20	88	157	838	397	167	710	1,120	167	60	75	63	175
21	110	143	810	402	147	892	920	136	69	33	50	148
22	69	120	760	329	143	865	691	132	75	22	41	28
23	199	165	685	500	146	307	735	175	78	24	35	41
24	318	411	660	519	167	562	625	133	78	33	37	208
25	528	392	411	710	132	448	642	78	81	39	39	156
26	300	332	272	610	121	429	660	132	132	35	35	142
27	380	325	450	591	128	338	620	128	102	37	41	364
28	316	281	400	519	124	268	591	140	98	24	39	208
29	307	346	500	672		336	532	106	109	22	35	147
30	298	1,240	540	334		406	458	78	109	60	28	60
31	225		660	608		473		69		30	22	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	528	37	210	0.227	0.26
November	1,240	78	245	.264	.29
December	1,210	200	645	.696	.80
January	865	329	621	.670	.77
February	600	113	201	.217	.23
March	892	120	358	.386	.44
April	3,720	458	1,543	1.66	1.85
May	514	69	212	.229	.26
June	229	30	81.3	.088	.10
July	136	22	77.2	.083	.10
August	398	14	93.5	.101	.12
September	364	28	126	.136	.15
The year	3,720	14	368	.397	5.37

Farmers Creek near Lapeer, Mich.

Location.- Staff gage at footbridge at Michigan Home & Training School, 2 miles west of Lapeer. Zero of gage is 806.48 feet above mean sea level.

Drainage area.- 57 square miles.

Records available.- March 1933 to September 1934.

Extremes.- 1933-34: Maximum discharge recorded, 226 second-feet Apr. 5, 1934 (gage height, 17.19 feet); minimum, less than 0.8 second-foot in 1934.

Remarks.- Records fair except those for periods of ice effect, Feb. 9-11, Mar. 11-14, 23-26, and those for estimated days, Dec. 1 and May 25, which are poor. Discharge not computed May 26 to Sept. 4 on account of variable backwater from temporary dam below gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	15	64	24	14	8.4	28	25				
2	18	16	102	29	15	8.4	68	25				
3	16	16	102	28	12	5.6	166	23				
4	15	17	102	27	11	7.6	216	22				
5	12	18	84	30	10	12	226	20				0.8
6	11	18	84	33	9.6	11	206	18				1.2
7	11	17	76	37	9.6	15	166	18				.9
8	10	16	60	43	8.8	9.6	138	16				1.8
9	10	15	48	41	8.5	10	116	15				1.8
10	9.6	16	40	37	8.2	11	98	14				.9
11	10	17	38	36	7.9	11	98	12				1.2
12	9.6	17	32	35	7.6	12	98	9.6				1.2
13	9.6	16	30	36	8.4	12	102	10				1.6
14	5.9	17	27	36	8.0	12	93	14				3.3
15	5.9	18	28	34	7.6	12	88	13				5.6
16	5.9	22	30	31	6.6	14	84	12				7.0
17	5.9	14	39	24	7.6	16	84	12				5.9
18	5.9	9.6	44	20	7.0	88	86	11				5.9
19	4.5	12	45	18	4.5	52	84	10				3.6
20	3.0	6.2	48	16	5.9	45	72	10				3.0
21	2.1	3.3	45	17	4.5	41	64	10				3.6
22	3.6	5.2	42	16	4.5	37	60	9.6				3.6
23	15	6.6	37	24	4.5	32	52	11				3.3
24	21	7.3	36	27	5.2	28	52	11				5.2
25	22	1.4	33	31	4.5	25	45	11				3.3
26	24	35	29	28	4.8	23	44					3.6
27	25	44	28	30	5.6	22	41					3.9
28	24	32	24	31	5.9	16	36					3.6
29	24	25	22	28		10	25					3.9
30	21	35	24	22		16	24					4.5
31	18		22	16		16						

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	25	2.1	12.8	0.225	0.26
November	44	1.4	16.9	.296	.33
December	102	22	47.3	.830	.96
January	43	16	28.5	.500	.58
February	15	4.5	7.76	.136	.14
March	88	5.6	20.6	.361	.42
April	226	24	92.1	1.62	1.81
May 1-25	25	9.6	14.5	.254	.24
June					
July					
August					
September 5-30	7	.8	3.23	.567	.55
The year					

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Tittabawassee River at Freeland, Mich.

Location.- Chain gage on line between secs. 16 and 21, T. 13 N., R. 3 E., at highway bridge at Freeland, Saginaw County.

Drainage area.- 2,530 square miles.

Records available.- August 1903 to December 1909, January 1912 to September 1934.

Average discharge.- 22 years (1912-34), 1,812 second-feet.

Extremes.- Maximum discharge recorded during year, 6,370 second-feet Apr. 5 (gage height, 7.60 feet); minimum, 155 second-feet Aug. 1; minimum gage height, 0.62 foot on June 20.

1930-34: Maximum discharge, 24,500 second-feet May 3, 1933 (gage height, 15.02 feet); minimum, that of Aug. 1, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 15, 16, Dec. 12-17, Dec. 25 to Jan. 4, Jan. 29 to Feb. 17, Feb. 19-21, 23-28, Mar. 8-11, and those for period June 15 to Sept. 30, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	665	1,050	3,010	1,340	1,500	770	1,130	1,050	435	532	195	244
2	700	910	2,830	1,450	1,400	770	1,450	1,210	630	435	327	532
3	630	1,530	1,850	1,550	1,300	1,850	2,920	980	565	417	468	339
4	630	1,610	2,090	1,700	1,220	4,270	5,170	1,210	466	357	363	363
5	596	1,050	3,460	1,850	1,140	3,730	5,970	875	805	435	411	399
6	630	910	3,280	2,170	1,060	3,100	4,900	875	700	735	417	417
7	805	1,610	2,570	1,530	1,000	2,830	4,270	805	345	805	500	630
8	1,370	1,530	1,930	1,450	950	1,750	3,820	1,210	315	532	357	875
9	1,930	1,450	1,210	1,210	900	1,250	3,460	1,370	369	381	910	630
10	1,770	1,210	1,050	1,690	860	1,000	3,370	980	381	321	630	700
11	1,610	910	910	1,450	840	770	3,550	980	381	532	411	770
12	700	1,050	840	1,530	820	665	3,280	910	532	357	375	875
13	665	805	810	1,210	800	840	3,280	1,050	369	565	369	910
14	770	1,050	790	1,050	790	735	2,830	1,370	435	393	417	1,130
15	598	1,000	840	1,450	780	700	2,090	1,130	399	435	304	1,210
16	700	950	880	1,610	780	770	1,610	980	293	339	435	1,210
17	565	910	930	1,690	770	1,530	1,850	910	310	293	435	665
18	700	840	980	1,610	770	4,270	1,770	805	321	288	357	980
19	630	840	1,770	1,050	770	5,770	1,690	665	363	345	435	770
20	598	805	1,770	910	770	4,810	1,690	665	276	466	423	665
21	665	1,290	1,770	805	770	4,090	1,610	665	735	435	393	770
22	1,930	1,290	1,450	665	770	3,550	1,450	910	468	565	423	357
23	2,090	1,690	1,210	1,850	770	3,010	1,370	665	351	293	327	327
24	2,250	1,370	1,370	3,280	770	2,570	1,690	565	363	205	369	288
25	2,170	1,370	1,050	3,370	770	1,930	1,690	565	351	244	357	630
26	2,250	1,130	1,150	2,650	770	1,610	1,610	532	565	244	296	565
27	2,330	1,530	1,280	1,850	770	1,290	1,370	532	399	232	357	840
28	1,690	1,530	1,260	2,090	770	1,210	1,610	500	405	210	339	1,210
29	1,210	1,370	1,240	1,900		1,050	1,050	468	423	216	288	1,130
30	1,050	1,610	1,250	1,750		1,210	735	468	435	298	271	532
31	1,290		1,280	1,600		980		500		185	298	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,330	598	1,167	0.461	0.53
November	1,690	805	1,207	.477	.53
December	3,460	790	1,552	.613	.71
January	3,370	665	1,655	.654	.75
February	1,500	770	906	.358	.37
March	5,770	665	2,086	.825	.95
April	5,970	735	2,476	.979	1.09
May	1,370	468	852	.337	.39
June	805	276	440	.174	.19
July	805	185	390	.154	.18
August	910	195	395	.156	.18
September	1,210	244	699	.276	.31
The year	5,970	185	1,154	.456	6.18

Salt River near North Bradley, Mich.

Location.- Staff gage at Pere Marquette Railroad bridge 1½ miles southeast of North Bradley.

Drainage area.- 138 square miles.

Records available.- June to September 1934.

Extremes.- Maximum discharge recorded during year, 41 second-feet Aug. 3 (gage height, 1.29 feet); minimum, 1.9 second-feet July 24 (gage height, 0.51 foot).

Remarks.- Records good.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										3.4	4.0	4.8
2										3.0	6.4	6.1
3										3.0	31	11
4									7.7	3.0	13	14
5									6.8	2.7	6.4	9.6
6									7.2	5.8	6.1	9.1
7									6.6	6.8	4.8	7.7
8									6.5	7.7	4.8	11
9									6.5	5.4	5.4	12
10									6.5	4.8	6.4	13
11									6.1	4.5	4.2	11
12									8.1	4.0	4.2	30
13									6.8	4.0	3.7	30
14									6.5	3.4	3.2	17
15									5.8	3.4	3.4	12
16									5.8	3.0	5.4	13
17									5.1	2.7	6.4	33
18									5.8	2.7	4.5	19
19									5.1	3.0	4.5	14
20									4.8	3.2	4.0	11
21									4.8	2.5	3.7	9.6
22									4.5	3.0	3.4	8.6
23									4.0	2.3	3.2	9.6
24									3.7	2.3	3.7	9.6
25									3.4	2.1	4.0	9.1
26									5.8	2.3	4.0	9.6
27									6.1	2.5	3.4	16
28									7.2	2.1	4.0	16
29									5.1	2.1	4.5	13
30									4.0	2.7	6.1	11
31										2.7	5.4	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January					
February					
March					
April					
May					
June 4-30	8.1	3.4	5.60	0.042	0.04
July	7.7	2.1	3.42	.025	.03
August	31	3.2	5.72	.041	.05
September	33	4.8	13.3	.096	.11
The year					

Chippewa River near Mount Pleasant, Mich.

Location.- Chain gage on line between secs. 7 and 8, T. 14 N., R. 3 W., 4 miles northeast of Mount Pleasant.

Drainage area.- 416 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1934.

Extremes.- Maximum discharge recorded during year, 1,550 second-feet Jan. 23; maximum gage height (ice jam), 8.59 feet Mar. 18; minimum discharge, 58 second-feet July 30 (gage height, 3.07 feet).
1930-34: Maximum discharge recorded, 3,150 second-feet May 3, 1933 (gage height, 9.92 feet); minimum, 54 second-feet Oct. 2, 1932 (gage height, 2.90 feet).

Remarks.- Records fair except those for periods of ice effect, Dec. 12-15, 24, 25, Dec. 27 to Jan. 7, Jan. 29 to Mar. 23, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	265	374	370	310	250	250	265	118	118	85	120
2	181	265	374	360	300	290	265	250	153	100	88	109
3	158	295	326	370	290	340	700	236	131	85	129	194
4	158	295	490	380	280	500	940	236	100	103	100	181
5	163	265	456	390	280	490	860	208	141	98	80	171
6	155	280	374	410	270	470	780	208	153	111	71	181
7	160	250	358	430	270	440	630	222	120	101	73	145
8	181	236	310	456	260	420	525	194	143	98	107	129
9	222	236	160	525	260	400	490	194	129	129	103	144
10	194	236	176	560	250	390	490	222	160	101	94	158
11	181	236	181	525	250	390	525	194	118	92	109	136
12	171	222	180	490	250	380	490	194	158	107	71	194
13	165	222	170	525	250	380	423	236	171	103	92	250
14	171	250	170	525	240	380	406	280	165	116	80	194
15	155	250	190	525	240	370	390	280	171	116	77	181
16	153	250	265	560	240	370	374	265	138	105	109	236
17	158	208	280	423	240	380	358	265	120	138	79	250
18	158	222	310	250	240	500	310	250	127	88	79	194
19	158	222	342	560	240	1,400	326	250	129	84	84	160
20	153	222	265	490	240	1,300	326	236	136	101	120	163
21	168	236	310	456	240	1,200	326	236	124	73	84	141
22	595	236	295	525	240	1,200	310	236	136	65	122	138
23	342	250	280	1,550	240	1,100	280	194	101	79	82	155
24	295	236	270	1,500	240	1,500	310	181	143	85	92	194
25	295	250	250	456	240	390	310	181	105	85	80	173
26	295	280	222	406	240	310	280	178	113	79	92	168
27	310	295	220	390	240	265	236	171	136	76	131	194
28	310	265	210	374	240	250	236	153	118	71	111	222
29	295	236	210	360		265	250	145	120	70	107	173
30	265	295	250	340		222	250	143	127	62	113	171
31	265		390	330		236		136		100	118	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	595	153	220	0.529	0.61
November	295	208	250	.601	.67
December	490	160	279	.671	.77
January	1,550	250	510	1.23	1.42
February	310	240	254	.611	.64
March	1,500	222	541	1.30	1.50
April	940	236	422	1.01	1.13
May	280	136	214	.514	.59
June	171	100	133	.320	.36
July	138	62	94.8	.228	.26
August	131	71	95.5	.230	.27
September	250	109	174	.418	.47
The year	1,550	62	266	.639	8.69

Pine River at Alma, Mich.

Location.- Staff gage in sec. 34, T. 12 N., R. 3 W., 70 feet below highway bridge in Alma.

Drainage area.- 288 square miles.

Records available.- October 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 951 second-feet Mar. 17 (gage height, 5.80 feet); minimum, 17 second-feet July 22; minimum gage height, 0.26 foot Sept. 11.

1930-34: Maximum discharge, 1,060 second-feet May 2, 1933 (gage height, 6.18 feet); minimum, that of July 22, 1934.

Remarks.- Records fair except those for periods of ice effect Nov. 15, 16, Dec. 25 to Jan. 4, Jan. 28 to Feb. 11, Feb. 22 to Mar. 1, Mar. 9-12, which are poor. Gage-height record furnished by city of Alma.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	91	203	170	140	60	161	147	68	45	23	43
2	84	140	289	190	130	67	182	140	64	43	32	43
3	81	217	289	210	120	140	259	140	58	40	100	48
4	81	189	274	230	120	147	397	147	57	43	100	48
5	81	175	259	259	110	168	381	154	56	43	89	63
6	73	161	259	203	110	217	429	147	55	40	73	94
7	73	147	245	203	110	259	381	140	55	38	66	91
8	100	133	245	203	100	231	365	140	54	45	56	100
9	107	133	231	217	100	210	319	140	54	46	51	381
10	120	147	217	203	100	160	319	140	52	49	58	64
11	94	154	203	203	100	120	334	140	52	51	61	22
12	89	140	175	217	94	90	349	133	56	51	61	29
13	69	126	168	189	90	76	319	120	49	49	61	48
14	84	114	154	189	88	140	304	120	49	44	54	85
15	78	100	147	203	82	133	289	140	45	39	52	217
16	73	90	154	231	82	120	274	140	45	39	52	114
17	100	78	189	217	84	497	259	133	45	34	50	72
18	73	100	217	154	84	514	245	133	44	37	52	107
19	71	107	259	147	78	480	231	120	49	37	49	114
20	71	114	182	133	81	586	217	114	46	34	44	81
21	91	133	182	120	71	864	231	91	43	37	49	42
22	147	147	189	120	70	605	231	94	40	17	52	34
23	203	175	189	217	70	446	217	93	40	21	43	39
24	259	203	203	231	60	274	245	100	42	23	38	49
25	319	217	180	274	60	274	203	93	44	32	44	66
26	289	175	170	349	60	245	189	88	56	28	44	66
27	259	161	160	381	60	182	189	89	44	21	50	89
28	231	154	150	250	60	175	168	94	56	19	24	175
29	217	147	150	200		147	161	90	55	19	39	140
30	217	189	150	160		154	161	80	50	19	58	126
31	133		150	140		154		68		21	51	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	319	71	131	0.455	0.52
November	217	78	145	.503	.56
December	289	147	201	.698	.80
January	381	120	207	.719	.83
February	140	60	89.8	.312	.32
March	864	60	256	.889	1.02
April	429	161	267	.927	1.03
May	154	68	120	.417	.48
June	68	40	50.8	.176	.20
July	51	17	35.6	.124	.14
August	100	23	54.1	.188	.22
September	381	22	89.7	.311	.35
The year	864	17	138	.479	6.47

Pine River near Midland, Mich.

Location.- Staff gage on line between secs. 25 and 26, T. 14 N., R. 1 E., at highway bridge 3 miles southwest of Midland.

Drainage area.- 400 square miles.

Records available.- May to September 1934.

Extremes.- Maximum discharge recorded during year, 315 second-feet Sept. 16 (gage height, 9.20 feet); minimum, 9.0 second-feet June 29 (gage height, 7.63 feet).

Remarks.- Records fair.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									89	47	18	41
2									40	36	27	56
3									27	27	25	36
4									36	54	21	33
5									44	26	86	31
6									48	47	162	24
7									41	52	47	70
8									32	40	118	162
9									46	22	61	230
10									28	37	48	112
11									44	34	50	58
12									40	37	40	52
13									54	40	40	42
14									110	36	31	33
15									40	77	38	147
16									34	20	104	206
17									40	44	36	114
18									26	33	25	97
19									41	33	24	42
20									21	26	31	116
21									42	53	52	64
22									38	32	37	82
23									32	20	34	54
24									34	32	40	63
25									17	33	29	53
26									46	31	38	63
27									97	36	58	68
28									47	34	41	218
29									41	25	40	100
30									41	20	38	218
31								29		18	41	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October						
November						
December						
January						
February						
March						
April						
May						
June	110	17	43.9	0.110	0.12	
July	77	18	35.5	.089	.10	
August	162	18	47.7	.119	.14	
September	230	24	89.5	.224	.25	

Black River near Port Huron, Mich.

Location.- Chain gage in sec. 2, T. 6 N., R. 16 E., at highway bridge 6 miles west of Port Huron.

Records available.- April to June 1931; October 1932 to September 1934.

Extremes.- Maximum discharge recorded during year, 4,780 second-feet Apr. 4 (gage height, 15.65 feet); minimum, 8.8 second-feet July 29 (gage height, 4.65 feet).
1931, 1932-34: Maximum discharge recorded, 6,740 second-feet Apr. 2, 1933 (gage height, 18.94 feet); minimum, 4 second-feet June 22, 1931 (gage height, 4.48 feet).

Remarks.- Records fair. No records Oct. 1 to Jan. 16.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					54	24	319	130	20	13	11	22
2					45	27	3,620	122	19	13	11	30
3					38	29	3,250	114	16	13	42	28
4					34	130	4,780	107	19	13	27	20
5					31	350	4,180	126	20	21	16	15
6					28	600	3,250	92	39	103	15	15
7					26	350	3,100	85	35	38	12	32
8					25	200	1,360	72	20	28	11	26
9					24	150	1,040	71	39	22	132	22
10					23	110	754	66	39	18	120	20
11					22	86	877	69	31	26	90	18
12					21	70	1,490	58	29	26	71	20
13					21	62	1,040	45	27	24	52	17
14					20	50	754	48	25	20	42	17
15					20	41	593	61	23	20	39	29
16					20	45	1,090	41	22	17	39	87
17				98	20	48	1,540	24	16	13	47	87
18				90	20	50	961	32	20	13	34	62
19				84	20	590	673	30	25	13	32	39
20				80	20	650	458	30	16	216	26	25
21				77	20	720	386	26	14	87	15	20
22				74	20	795	319	32	14	31	15	20
23				86	20	458	303	28	14	27	14	14
24				100	20	290	272	23	13	19	15	19
25				120	20	150	258	25	13	17	14	16
26				160	20	120	230	31	15	13	12	16
27				140	20	90	203	27	18	13	12	20
28				100	20	74	190	31	15	12	11	23
29				88		60	166	27	15	8.8	14	33
30				76		70	148	27	13	11	13	22
31				64		90		25		12	13	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October						
November						
December						
January 17-31	160	64	95.8			
February	54	20	24.7			
March	795	24	212			
April	4,780	148	1,253			
May	130	23	55.6			
June	39	13	21.5			
July	216	8.8	29.7			
August	132	11	32.8			
September	87	14	27.8			

Clinton River at Mount Clemens, Mich.

Location.- Chain gage in T. 2 N., R. 13 E. (unsurveyed), half a mile west of Mt. Clemens, on Moravian Drive highway bridge.

Records available.- May to September 1934.

Extremes.- Maximum discharge recorded during year, 302 second-feet July 20 (gage height, 5.08 feet); minimum, 24 second-feet July 31; minimum gage height, 2.94 feet on June 5.

Remarks.- Records good.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									73	46	31	31
2									78	40	48	39
3									67	40	121	42
4									66	39	113	37
5									53	43	78	36
6									50	53	46	41
7									56	88	36	59
8									57	71	34	49
9									53	46	73	48
10								188	47	55	220	47
11								198	46	55	113	48
12								188	47	52	73	63
13								177	47	52	46	84
14								167	51	60	39	66
15								177	49	50	39	66
16								177	45	41	50	138
17								167	57	40	39	198
18								157	51	47	30	91
19								148	58	47	32	82
20								121	55	198	28	67
21								105	42	62	27	57
22								121	42	43	30	64
23								105	51	39	28	67
24								113	41	35	25	68
25								98	36	29	30	54
26								86	51	31	31	57
27								86	64	37	27	57
28								83	53	37	26	87
29								91	46	40	30	91
30								74	55	34	29	86
31								73		27	31	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October						
November						
December						
January						
February						
March						
April						
May 10-31	198	73	132			
June	78	36	52.9			
July	198	27	50.9			
August	220	25	51.7			
September	198	31	67.3			

River Rouge at Detroit, Mich.

Location.- Chain gage on line between secs. 33 and 34, T. 1 S., R. 10 E., at Detroit. Zero of gage is 579.90 feet above mean sea level.

Drainage area.- 194 square miles.

Records available.- November 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 1,650 second-feet Apr. 2 (gage height, 13.60 feet); minimum, 2.7 second-feet Aug. 11 (gage height, 3.50 feet). 1930-34: Maximum discharge, 3,300 second-feet May 1, 1933 (gage height, 18.10 feet); minimum, that of Aug. 11, 1934.

Remarks.- Records good except those for estimated periods, which are poor. Gage-height record furnished by city of Dearborn.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*18	21	35	*50	*44	*48	*400	*41	11	*6.2	4.1	*6.0
2	13	*22	*35	*70	44	*65	1,650	36	9.1	6.5	8.8	*8.5
3	15	*23	*40	88	*44	*90	1,100	*37	*9.6	6.0	9.4	*7.0
4	14	24	*42	*80	*44	*125	800	*38	10	*5.4	10	*6.5
5	14	23	43	*75	*44	122	354	43	8.5	4.9	*12	10
6	13	22	*38	*70	44	*111	298	*35	6.2	5.7	*11	4.9
7	12	23	32	*70	*42	100	*200	*30	6.2	11	11	*9.0
8	*18	24	30	*80	*41	*94	*150	26	7.2	*10	6.5	*8.5
9	*17	25	*28	88	*40	88	122	24	7.5	8.5	3.4	*8.0
10	17	25	*27	*85	*40	*80	113	24	*7.4	7.2	4.9	7.5
11	16	27	25	*80	*42	*80	*150	25	7.2	6.7	2.7	7.5
12	*14	27	*25	80	*45	*85	160	23	*7.8	5.7	*4.0	6.5
13	13	29	*24	*85	*48	88	122	*26	8.5	9.1	5.4	10
14	11	35	*24	*90	51	*85	122	29	9.7	*10	4.1	*10
15	*12	42	44	88	*53	88	190	29	6.2	*8.0	7.5	10
16	14	39	*50	*80	*56	84	190	21	4.9	*6.0	*7.4	*12
17	14	36	*52	*75	58	*105	243	*20	*5.0	5.2	7.2	*13
18	16	33	51	*70	*56	*130	140	*19	9.4	*5.2	7.2	15
19	*15	33	*47	*65	*54	131	108	18	7.5	5.2	*6.6	8.8
20	14	34	*42	*60	*52	113	*92	*18	7.5	6.2	*6.0	9.4
21	17	38	*38	*55	*50	122	76	17	7.0	7.8	*5.3	*11
22	*40	41	*35	*65	*48	190	*82	*20	6.5	*6.0	4.7	13
23	38	58	*32	68	*47	150	88	22	6.5	4.3	5.2	*11
24	27	62	*30	104	*46	*100	*82	16	*6.5	7.8	4.0	9.4
25	40	65	*35	80	*45	*70	76	19	6.5	4.0	*4.1	*8.4
26	22	68	*40	*70	*45	*75	*69	*18	7.0	5.4	*4.2	7.5
27	23	72	45	*65	*44	80	62	*16	19	3.4	4.3	*8.0
28	*22	44	*42	*60	*43	50	50	15	8.8	6.0	2.8	*10
29	*21	38	*40	58		50	*48	*14	7.5	*6.0	*4.2	12
30	20	36	*38	*51		24	46	*12	6.0	6.0	5.7	*10
31	*20		*37	44		108		11		4.9	4.7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	40	11	18.9	0.097	0.11	
November	72	21	36.3	.187	.21	
December	52	24	37.0	.191	.22	
January	104	44	72.5	.374	.43	
February	58	40	46.8	.241	.25	
March	190	24	94.6	.488	.56	
April	1,650	46	246	1.27	1.42	
May	43	11	23.9	.123	.14	
June	19	4.9	7.92	.041	.05	
July	11	3.4	6.46	.033	.04	
August	12	2.7	6.08	.031	.04	
September	15	4.9	9.28	.048	.05	
The year	1,650	2.7	50.3	.259	3.52	

*Estimated.

Huron River at Barton, Mich.

Location.- In sec. 20, T. 2 S., R. 6 E., at dam and power plant of Eastern Michigan Edison Co. at Barton, Washtenaw County, near Ann Arbor.

Drainage area.- 723 square miles.

Records available.- January 1914 to September 1934.

Average discharge.- 20 years, 394 second-feet.

Extremes.- Maximum daily discharge during year, 2,590 second-feet Apr. 4; minimum, 6 second-feet several times during July, August, and September.
1914-34: Maximum daily discharge, 5,840 second-feet Mar. 14, 1918; minimum, 4 second-feet Sept. 11, 1931.

Remarks.- Flow computed from records of operation of power plant, flow through underssluice during floods, and the depth of flow over dam. Daily-discharge records furnished by Ayres, Lewis, Norris & May, consulting engineers, Ann Arbor, Mich.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	183	283	225	195	63	522	382	114	117	37	17
2	136	169	143	230	186	130	1,600	347	89	6	16	40
3	133	158	221	208	183	136	1,600	369	128	35	6	6
4	140	158	286	234	171	191	2,590	326	66	45	31	44
5	137	156	223	238	179	162	2,080	309	98	29	30	6
6	128	162	284	286	168	167	1,660	286	126	85	6	61
7	134	178	219	228	161	178	1,500	289	114	6	6	41
8	128	150	232	286	163	178	1,330	285	83	19	29	45
9	154	171	284	251	166	192	1,080	207	72	6	6	6
10	114	168	207	285	105	160	1,140	289	99	16	28	41
11	129	166	182	227	147	160	1,120	197	76	29	6	40
12	117	162	213	284	143	160	1,100	207	72	30	28	56
13	121	216	202	286	143	174	1,010	276	50	56	29	64
14	114	141	198	228	130	161	951	216	62	40	6	51
15	116	163	238	255	144	156	909	151	73	39	27	63
16	126	166	247	231	133	172	890	189	63	29	6	85
17	112	147	225	204	149	190	946	190	65	38	31	74
18	108	161	242	257	129	202	815	179	72	42	18	75
19	112	152	224	214	120	194	750	183	60	21	34	55
20	106	166	283	228	121	208	674	170	60	30	29	64
21	121	220	208	197	135	239	643	158	65	40	6	65
22	140	183	231	216	144	270	639	163	29	40	31	84
23	139	200	237	231	115	202	629	154	95	17	6	65
24	152	205	231	233	124	203	601	154	38	30	30	66
25	148	235	201	245	130	201	584	153	48	31	30	66
26	158	213	143	226	122	218	528	148	27	39	6	88
27	154	184	197	238	118	235	464	132	93	29	34	94
28	152	203	183	231	146	240	530	108	19	6	28	65
29	202	211	175	160		193	386	130	40	6	28	78
30	121	204	226	208		226	443	105	63	16	6	70
31	141		189	200		304		103		6	39	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	202	106	133	0.184	0.21	
November	235	141	178	.246	.27	
December	286	143	221	.306	.35	
January	286	160	235	.325	.37	
February	195	105	145	.201	.21	
March	304	63	189	.261	.30	
April	2,590	386	990	1.37	1.53	
May	382	103	211	.292	.34	
June	128	19	72.0	.100	.11	
July	117	6	31.5	.044	.05	
August	39	6	21.1	.029	.03	
September	94	6	55.8	.077	.09	
The year	2,590	6	206	.285	3.86	

Raisin River near Adrian, Mich.

Location.- Chain gage on line between secs. 29 and 32, T. 6 S., R. 4 E., half a mile below South Branch of Raisin River and 3 miles northeast of Adrian.

Records available.- October 1930 to August 1931, October 1932 to September 1934.

Extremes.- Maximum discharge recorded during year, 2,010 second-feet Apr. 5 (gage height, 14.35 feet); minimum, 18 second-feet Aug. 22 (gage height, 4.23 feet).
1930-31, 1932-34: Maximum discharge recorded, 2,010 second-feet Apr. 2, 1933, and Apr. 5, 1934; maximum gage height, 14.50 feet Apr. 2, 1933; minimum discharge recorded, that of Aug. 22, 1934.

Remarks.- Records fair except those for period of ice effect, Feb. 6 to Mar. 5, Mar. 9-11, 27, which are poor.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					154	60	411	189	43	41	31	36
2					143	110	1,240	177	55	36	34	36
3					143	165	1,610	189	55	36	35	33
4					154	155	1,830	165	43	39	34	24
5					112	140	1,950	154	68	40	32	31
6					130	177	1,540	127	94	45	27	34
7					120	165	1,090	108	122	61	32	29
8					110	154	881	143	78	52	32	31
9					100	130	690	132	78	42	34	28
10					110	105	630	138	61	45	38	27
11					120	90	630	127	43	43	71	30
12					90	74	610	132	55	41	24	71
13					100	132	534	127	86	43	21	55
14					100	127	534	98	40	38	20	55
15					70	122	480	132	40	40	26	45
16				127	110	127	690	122	50	43	49	41
17				86	60	122	837	71	64	39	31	47
18				122	130	138	610	71	48	38	41	68
19				132	80	108	498	117	71	41	21	35
20				127	120	138	411	74	90	39	20	37
21				108	110	143	411	58	40	39	37	40
22				112	80	138	378	117	47	37	19	34
23				154	100	138	346	103	52	32	40	32
24				127	90	143	330	98	52	32	24	35
25				127	70	138	300	61	41	36	33	50
26				132	60	117	256	90	52	45	21	37
27				132	90	122	270	71	45	42	19	50
28				154	110	127	256	52	52	42	28	52
29				165		138	256	71	55	34	22	112
30				154		177	165	86	52	34	35	45
31				154		242		82		71	23	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November					
December					
January 16-31	165	86	132		
February	154	60	106		
March	242	60	134		
April	1,950	165	689		
May	189	52	112		
June	122	40	59.1		
July	71	32	41.5		
August	71	19	30.8		
September	112	24	42.7		
The year					

Maumee River at Antwerp, Ohio

Location.- Water-stage recorder just below highway bridge 1 mile north of Antwerp, Paulding County, and about 7 miles downstream from State boundary. Zero of gage is 695.49 feet above mean sea level.

Drainage area.- 2,049 square miles.

Records available.- September 1921 to September 1934.

Average discharge.- 13 years, 1,620 second-feet.

Extremes.- Maximum discharge during year, 7,780 second-feet Apr. 1 (gage height, 11.02 feet); minimum, 42 second-feet July 25 (gage height, 0.39 foot).
1921-34: Maximum discharge, 22,000 second-feet Jan. 16, 1930 (gage height, 19.4 feet); minimum, 24 second-feet Oct. 17, 1930, and June 21-22, 1933 (gage height, 0.32 foot).

Remarks.- Records good except those estimated because of ice effect, Dec. 10-15, 26-31, Jan. 1-8, 29-31, Feb. 1-13, Mar. 1, and period of missing gage-height record, Feb. 14-28, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,120	191	196	400	410	130	7,520	560	186	378	49	57
2	4,230	222	183	420	370	349	6,700	520	167	497	62	116
3	3,560	193	193	450	340	1,250	6,020	501	177	486	67	78
4	3,030	166	198	500	310	3,430	5,330	633	148	418	51	111
5	2,140	168	191	560	280	4,600	5,780	298	151	276	51	61
6	1,300	161	196	600	260	4,140	5,000	382	160	214	190	58
7	830	151	254	700	230	3,720	4,410	418	139	162	190	131
8	560	163	284	800	210	3,330	4,900	406	167	206	122	100
9	448	170	310	980	180	2,530	5,330	384	172	135	135	168
10	421	183	280	1,170	140	1,600	4,380	345	194	111	74	339
11	342	170	250	1,110	130	1,170	3,560	303	156	119	171	193
12	303	161	235	980	130	823	2,920	311	152	113	327	128
13	276	156	220	929	130	712	2,200	296	154	117	202	167
14	253	161	215	954	130	515	1,800	330	139	126	147	278
15	238	178	215	854	130	487	1,660	336	148	149	142	272
16	233	191	216	806	130	456	2,950	295	157	112	305	410
17	209	206	217	758	130	452	5,220	290	141	103	782	397
18	211	233	219	624	130	808	4,620	286	135	86	602	486
19	198	193	386	560	130	1,570	3,400	293	120	78	422	447
20	186	204	220	540	130	1,540	3,030	247	139	96	210	296
21	186	209	595	463	130	1,540	2,460	304	108	85	185	218
22	224	225	624	425	130	1,660	1,900	268	122	75	202	180
23	316	256	735	495	130	1,540	1,420	266	172	88	168	153
24	297	244	806	667	130	1,300	1,170	240	263	54	132	133
25	264	241	782	830	130	1,110	980	255	184	55	124	116
26	285	206	660	735	130	879	679	263	166	69	101	106
27	282	193	520	667	130	1,280	806	199	202	50	62	108
28	303	201	450	602	130	2,690	712	172	335	46	109	112
29	264	214	390	550		2,960	560	246	224	49	71	126
30	261	204	380	480		4,580	560	214	182	93	97	209
31	228		370	440		7,480		198		63	62	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,230	186	839	0.409	0.47
November	244	151	193	.094	.10
December	806	183	355	.173	.20
January	1,170	400	679	.331	.38
February	410	130	181	.088	.09
March	7,480	130	1,962	.958	1.10
April	7,520	560	3,273	1.60	1.79
May	633	172	325	.159	.18
June	335	108	169	.082	.09
July	497	46	152	.074	.09
August	762	49	181	.088	.10
September	486	57	192	.094	.10
The year	7,520	46	710	.347	4.69

Maumee River near Defiance, Ohio

Location.- Water-stage recorder in NW¼ sec. 22, T. 4 N., R. 5 E., at Independence Dam, 5 miles east of Defiance, Defiance County. Zero of gage is 659.12 feet above mean sea level.

Drainage area.- 5,530 square miles.

Records available.- November 1924 to September 1934.

Extremes.- Maximum discharge during year, 23,700 second-feet Mar. 31 (gage height, 5.93 feet); minimum, 18 second-feet Aug. 2 (gage height, 1.24 feet).
1924-34: Maximum discharge, 87,000 second-feet Jan. 16, 1930 (gage height, 12.9 feet); minimum, that of Aug. 2, 1934.

Remarks.- Records good except those below 400 second-feet, those above 20,000 second-feet, those estimated Feb. 14 to Mar. 1 because of ice effect, and those estimated July 2-20, which are fair. Flow at extremely low water affected by regulation of Auglaize River at Toledo Edison Co.'s dam 3 miles south of Defiance. Leakage into abandoned Miami & Erie anal above station; diversion not included in tables of discharge. (See discharge measurements, Miami & Erie Canal near Defiance.)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,260	392	410	1,320	847	250	20,500	880	255	408	45	83
2	7,130	392	357	1,000	839	799	15,500	714	222	320	49	141
3	5,180	374	410	1,340	839	3,490	12,600	654	190	740	83	59
4	4,030	339	476	1,780	654	4,740	12,000	673	255	560	222	70
5	3,230	357	596	1,660	694	8,840	13,400	756	206	680	157	64
6	2,250	357	462	1,700	634	9,420	14,100	519	157	350	76	70
7	1,540	427	392	1,540	596	7,700	13,100	615	117	270	76	59
8	926	339	374	2,390	519	5,540	10,900	694	255	205	174	64
9	818	357	538	2,650	445	3,660	10,000	776	271	300	128	90
10	673	357	596	3,300	374	2,600	9,420	634	239	180	117	90
11	538	322	634	3,230	190	1,740	7,870	634	239	180	157	255
12	538	357	538	2,480	190	1,410	5,020	557	190	160	141	304
13	410	374	462	2,360	174	1,260	4,030	576	222	170	288	157
14	392	357	480	1,790	170	1,240	3,450	538	239	170	222	128
15	357	239	462	2,290	170	1,090	2,990	557	141	160	374	304
16	339	174	499	1,750	250	1,040	8,970	557	117	190	499	596
17	322	190	357	1,420	450	1,340	18,600	445	206	140	447	596
18	304	271	513	1,480	300	1,820	15,500	499	206	130	1,360	576
19	322	427	1,200	1,540	320	3,540	10,300	445	206	120	1,110	596
20	190	374	1,780	1,470	260	4,810	7,470	427	346	110	776	538
21	190	427	1,160	922	290	4,540	5,440	427	445	54	538	410
22	374	357	1,400	1,050	280	4,540	3,830	339	576	64	222	255
23	322	392	1,620	1,420	220	4,110	2,820	304	350	64	141	206
24	445	392	1,480	1,450	180	3,680	2,380	392	222	59	222	157
25	480	427	1,200	1,700	170	2,090	1,900	271	239	64	117	141
26	499	499	1,390	1,740	290	2,040	1,610	255	374	49	90	141
27	480	392	844	1,600	220	3,740	1,460	288	735	83	90	322
28	462	410	698	874	200	8,050	1,410	339	836	59	64	157
29	445	410	690	867		13,000	972	222	1,540	45	54	206
30	410	339	707	610		17,300	1,060	206	1,180	37	64	222
31	445		867	750		22,800		288		34	59	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,260	190	1,365		
November	499	174	361		
December	1,780	357	761		
January	3,300	750	1,660		
February	847	170	384		
March	22,800	250	4,911		
April	20,500	972	7,960		
May	880	206	499		
June	1,540	117	359		
July	820	34	215		
August	1,360	45	263		
September	596	59	235		
The year	22,800	34	1,584		

Maumee River at Waterville, Ohio

Location.- Water-stage recorder at highway bridge at Waterville, Lucas County, 3 miles below mouth of Tontogany Creek.

Drainage area.- 6,314 square miles.

Records available.- November 1898 to December 1901, August 1921 to September 1934.

Average discharge.- 13 years (1921-34), 4,470 second-feet.

Extremes.- Maximum discharge during year, 25,300 second-feet Mar. 31 (gage height, 7.82 feet); minimum, 39 second-feet Aug. 2 (gage height, 1.32 feet).
1921-34: Maximum discharge recorded, 75,000 second-feet Jan. 16, 1930 (gage height, 13.60 feet); minimum, that of Aug. 2, 1934.

Remarks.- Records good except those for extremely low stages, those estimated because of ice effect, Jan. 28 to Feb. 9, Mar. 8, 14, 15, and those estimated because of missing gage-height record Nov. 10-13, Dec. 28-30, Feb. 10 to Mar. 2, and Mar. 9-13, which are fair. Flow at extremely low water affected by regulation of Auglaize River at hydroelectric plant of Toledo Edison Co. 3 miles south of Defiance.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,580	416	218	1,000	800	220	23,800	1,100	405	1,280	53	117
2	8,100	383	314	1,610	890	900	18,700	921	332	462	47	386
3	6,510	452	394	1,260	880	3,340	15,200	775	247	617	89	342
4	4,880	270	412	1,470	870	4,660	15,900	745	292	700	117	211
5	4,070	232	466	1,900	700	6,650	18,800	760	312	599	177	161
6	3,100	453	557	1,680	740	11,000	17,500	745	394	748	177	124
7	2,090	461	450	1,760	640	9,800	15,800	500	182	437	169	83
8	1,460	477	312	1,800	580	7,200	13,100	599	93	312	131	98
9	854	411	355	2,680	520	5,000	11,400	715	333	193	211	131
10	806	370	452	3,340	420	3,500	10,700	1,040	362	236	211	145
11	670	350	745	3,500	320	2,300	9,690	578	254	274	211	138
12	543	330	470	2,800	190	1,600	7,500	412	308	220	238	344
13	503	390	516	2,650	180	1,400	5,400	684	225	202	220	352
14	440	308	529	2,450	180	1,300	4,560	524	110	177	292	256
15	428	359	464	2,040	180	1,200	4,070	557	211	161	283	238
16	383	574	440	2,490	190	1,120	9,300	599	165	138	464	634
17	452	295	342	1,550	400	1,200	20,200	641	120	88	599	599
18	338	302	362	1,870	500	2,020	20,600	455	312	153	774	670
19	302	292	393	1,620	330	3,060	13,500	642	366	161	1,590	641
20	323	372	1,730	1,620	360	5,220	9,350	516	242	138	923	627
21	272	362	1,660	1,530	260	5,400	6,900	503	352	93	760	613
22	362	428	1,020	838	290	5,050	5,400	503	383	62	571	477
23	342	332	1,360	1,550	300	5,050	3,920	394	782	57	273	322
24	445	424	1,950	1,020	230	4,560	3,260	416	480	59	211	265
25	391	396	1,350	1,700	200	3,000	2,560	543	283	79	256	247
26	405	531	1,160	1,730	180	2,180	2,090	428	280	71	193	220
27	628	367	1,220	1,770	300	3,910	1,890	383	501	68	153	414
28	375	325	1,200	1,200	240	6,910	1,570	452	745	83	75	238
29	551	392	1,100	900		13,000	1,550	452	1,160	71	93	292
30	373	478	1,000	800		17,300	1,010	312	1,550	62	79	352
31	383		899	650		24,500		302		75	75	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,580	272	1,624		
November	574	232	384		
December	1,950	218	770		
January	3,500	650	1,767		
February	890	180	424		
March	24,500	220	5,276		
April	23,800	1,010	9,841		
May	1,100	302	587		
June	1,550	93	393		
July	1,280	57	261		
August	1,590	47	313		
September	670	83	325		
The year	24,500	47	1,832		

St. Marys River near Fort Wayne, Ind.

Location.- Chain gage in sec. 35, T. 30 N., R. 12 E., at highway bridge 12 miles above mouth of river and 4 miles south of Fort Wayne, Allen County.

Drainage area.- 810 square miles.

Records available.- November 1930 to September 1934 in reports of U. S. Geological Survey; October 1925 to September 1927 in reports of the Indiana Department of Conservation.

Extremes.- Maximum discharge recorded during year, 3,670 second-feet Mar. 31 (gage height, 10.41 feet); minimum, 6.4 second-feet Aug. 4, 6 (gage height, 0.38 foot). 1930-34: Maximum discharge recorded, 6,620 second-feet May 14, 1933 (gage height, 14.08 feet); minimum, that of Aug. 4, 6, 1934.

Remarks.- Records good except those for period of ice effect, Nov. 15-19, Dec. 12-14, Dec. 27 to Jan. 5, which are poor. No records Jan. 21 to Mar. 4.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,150	66	52	140			3,210	117	30	395	11	11
2	3,090	56	42	200			2,550	110	30	353	11	12
3	2,730	46	41	220			1,670	97	28	237	7.0	13
4	1,350	40	42	250			1,570	97	28	146	6.4	10
5	1,010	37	52	250		2,310	1,010	91	27	110	7.0	9
6	439	36	138	255		2,190	705	91	22	64	6.4	9
7	274	38	169	293		1,230	555	85	56	42	7.0	11
8	202	48	153	313		880	461	80	54	33	7.0	12
9	161	60	146	580		705	374	78	46	33	12	12
10	138	50	110	630		461	333	71	38	37	12	12
11	131	48	104	580		395	333	66	38	40	104	12
12	97	46	90	530		293	255	62	48	46	37	13
13	85	46	85	461		194	219	66	69	42	56	16
14	75	54	80	395		177	202	71	52	33	44	17
15	66	50	80	395		202	185	85	42	25	85	73
16	66	50	69	395		237	1,520	71	31	21	507	274
17	69	50	56	353		255	1,770	66	25	21	274	185
18	64	55	64	293		880	1,080	56	24	19	131	97
19	62	60	64	255		760	1,080	56	31	19	78	69
20	64	73	161	228		605	940	52	33	17	131	42
21	66	85	374			760	655	52	110	17	104	30
22	78	97	507			705	461	48	146	14	71	19
23	78	91	530			605	313	42	97	11	40	19
24	75	91	555			461	194	42	73	8	27	17
25	110	75	461			333	185	42	42	11	18	13
26	161	73	374			1,180	161	35	28	11	18	13
27	153	80	200			2,020	138	31	33	31	14	31
28	124	73	170			2,430	124	30	40	18	13	13
29	91	60	150			2,070	124	30	313	13	12	50
30	80	46	140			3,530	124	35	439	12	10	124
31	71		130			3,670		31		11	11	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	3,150	62	465	0.574	0.66	
November	97	36	59.3	.073	.08	
December	555	41	174	.215	.25	
January 1-20	630	140	351	.433	.32	
February						
March 5-31	3,670	177	1,094	1.35	1.35	
April	3,210	124	750	.926	1.03	
May	117	30	64.1	.079	.09	
June	439	22	69.1	.085	.09	
July	395	8.0	61.0	.075	.09	
August	507	6.4	60.4	.075	.09	
September	274	9.0	41.2	.051	.06	

Tiffin River near Brunersburg, Ohio

Location.- Water-stage recorder near highway bridge between secs. 32 and 33, T. 5 N., R. 4 E., three-eighths of a mile below mouth of Mud Creek and 3 miles northwest of Brunersburg, Defiance County.

Drainage area.- 766 square miles.

Records available.- August 1928 to September 1934.

Extremes.- Maximum discharge during year, 5,600 second-feet Apr. 6 (gage height, 17.27 feet); minimum, 2.6 second-feet July 30-31 (gage height, 0.41 foot).
1928-34: Maximum discharge, 9,990 second-feet Jan. 14, 1930 (gage height, 23.3 feet); minimum, that of July 30-31, 1934.

Remarks.- Records fair. Discharge estimated because of ice, Dec. 10-13, Dec. 26 to Jan. 17-19, Feb. 1 to Mar. 1.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	165	32	43	43	57	40	2,320	165	38	23	3.7	6.1
2	127	32	44	45	54	80	2,540	148	36	19	4.0	9.3
3	79	35	49	50	52	594	2,280	135	33	19	82	8.0
4	56	35	52	54	50	819	2,720	124	32	16	316	8.0
5	44	37	53	62	49	715	3,950	116	30	14	94	10
6	34	38	56	84	48	618	5,270	108	28	13	35	14
7	31	39	56	150	47	468	5,200	103	34	14	22	18
8	29	38	53	206	46	352	3,840	95	49	13	18	22
9	30	37	50	206	45	264	2,760	89	37	13	14	18
10	30	37	46	154	44	192	2,040	81	30	14	11	18
11	30	38	44	164	43	148	1,550	79	26	14	35	17
12	30	40	43	148	43	118	1,140	82	28	14	72	26
13	30	41	42	125	42	106	935	82	28	14	28	40
14	28	39	41	126	42	109	797	78	24	13	17	27
15	26	44	47	117	42	107	675	72	23	13	15	20
16	26	49	50	100	41	110	1,780	74	22	10	26	53
17	26	45	51	90	41	101	2,320	72	21	10	42	84
18	27	38	60	84	40	178	1,770	70	22	8.6	29	42
19	28	38	59	80	40	199	1,430	67	22	8.3	19	34
20	28	43	75	80	40	206	1,060	60	25	6.9	14	28
21	28	46	94	94	40	264	675	53	22	6.6	12	22
22	30	51	83	84	40	370	468	52	26	6.3	10	18
23	42	52	72	105	40	414	396	54	33	5.8	8.6	17
24	48	53	82	87	40	311	370	55	28	5.3	7.3	14
25	49	51	70	97	40	178	344	53	24	4.5	6.9	14
26	46	48	62	100	40	155	303	54	25	4.3	6.3	14
27	40	45	55	87	40	295	264	56	86	4.5	6.1	22
28	35	44	50	81	40	396	234	53	84	5.0	6.1	17
29	32	43	44	86		516	206	48	47	3.8	6.1	27
30	32	43	41	74		1,100	185	44	29	2.7	6.1	35
31	32		41	64		2,120		40		2.7	6.1	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	165	26	42.5	0.055	0.06
November	53	32	41.7	.054	.06
December	94	41	55.1	.072	.08
January	206	43	101	.132	.15
February	57	40	43.8	.057	.06
March	2,120	40	376	.491	.57
April	5,270	185	1,661	2.17	2.42
May	165	40	79.4	.104	.12
June	86	21	33.0	.043	.05
July	23	2.7	10.4	.014	.02
August	316	3.7	31.6	.041	.05
September	84	6.1	23.4	.031	.03
The year	5,270	2.7	207	.270	3.67

Auglaize River near Fort Jennings, Ohio

Location.- Water-stage recorder in SE¼ sec. 15, T. 1 S., R. 5 E., at highway bridge 3⅛ miles northeast of Fort Jennings, Putnam County, and 6 miles above mouth of Ottawa River. Zero of gage is 713.92 feet above mean sea level.

Drainage area.- 333 square miles.

Records available.- August 1921 to September 1934.

Average discharge.- 13 years, 302 second-feet.

Extremes.- Maximum discharge during year, 2,280 second-feet Mar. 5 (gage height, 10.38 feet); minimum, 11 second-feet July 31 (gage height, 0.87 foot).
1921-34: Maximum discharge, 7,860 second-feet Jan. 15, 1930 (gage height, 16.6 feet); minimum, 5.0 second-feet Aug. 28, 1932 (gage height, 0.75 foot).

Remarks.- Records good except those for periods of ice effect, Nov. 18-19, Dec. 26-31, Jan. 21 to Mar. 1, Mar. 21, and those for periods of missing gage-height record, Mar. 10-14, 19, 20, 22-26, which are fair. Diversion into this basin from Lake St. Marys by Miami & Erie Canal above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	627	54	41	180	60	21	820	53	16	166	14	16
2	358	39	37	312	55	90	351	48	15	129	16	20
3	229	42	41	246	50	985	370	46	15	100	17	17
4	157	48	52	164	48	2,200	336	44	20	73	17	14
5	120	50	54	145	45	1,650	347	42	21	62	15	16
6	98	54	85	176	43	747	301	45	180	39	15	16
7	89	51	90	218	40	450	261	41	101	29	13	18
8	92	46	83	290	38	257	235	38	68	34	15	19
9	80	42	74	520	36	176	198	35	50	53	12	19
10	78	47	74	496	33	120	176	34	63	39	12	18
11	77	51	62	324	32	100	159	28	82	22	58	17
12	76	47	56	220	30	88	148	27	80	27	78	17
13	70	31	55	218	29	100	143	26	56	33	41	16
14	67	27	54	279	28	120	136	26	62	41	59	17
15	65	26	59	259	27	143	116	30	52	38	84	26
16	56	24	62	206	27	174	904	28	40	30	85	39
17	51	23	51	164	26	171	1,480	28	29	28	106	24
18	45	22	448	173	25	302	723	28	28	25	255	21
19	37	22	700	159	25	291	393	25	52	26	181	20
20	24	22	398	116	24	290	250	23	291	25	111	19
21	35	23	450	100	23	404	174	20	208	20	85	16
22	48	26	370	90	23	390	151	19	124	26	64	15
23	64	28	257	110	22	290	130	18	97	20	45	18
24	115	28	187	148	22	180	121	18	81	20	32	18
25	93	34	153	153	22	110	103	18	70	18	40	15
26	81	46	100	133	21	130	101	18	72	20	27	15
27	80	53	70	110	21	982	84	17	171	18	22	15
28	73	50	50	90	21	1,820	72	17	699	16	22	17
29	60	48	60	80		1,460	64	16	293	15	20	23
30	45	48	70	75		2,020	58	16	145	15	19	36
31	48		90	70		1,480		16		12	16	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	627	24	104	0.312	0.36
November	54	22	38.4	.115	.13
December	700	37	143	.429	.49
January	520	70	194	.583	.67
February	60	21	32.0	.096	.10
March	2,200	21	572	1.72	1.98
April	1,480	58	303	.910	1.02
May	53	16	28.7	.086	.10
June	699	15	109	.327	.36
July	166	12	39.3	.118	.14
August	255	12	51.5	.155	.18
September	39	14	19.2	.058	.06
The year	2,200	12	137	.411	5.59

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Auglaize River near Defiance, Ohio

Location.- Head-water and tail-water staff gages prior to Dec. 6 and water-stage recorder in tail-water thereafter in NE¼ sec. 9, T. 3 N., R. 4 E., at dam and power plant of Toledo Edison Co., 3 miles south of Defiance, Defiance County, and just below mouth of Beetree Creek. Zero of tail-water gage is 660.00 feet above mean sea level.

Drainage area.- 2,329 square miles.

Records available.- April 1915 to September 1934. May to August 1903 at highway bridge 1¼ miles downstream.

Average discharge.- 19 years (1915-34), 1,660 second-feet.

Extremes.- Maximum mean daily discharge during year, 12,400 second-feet Mar. 31; minimum, 14 second-feet May 23.
1915-34: Maximum mean daily discharge, 38,700 second-feet Jan. 15, 1930; minimum, 8 second-feet Oct. 17, 1923.

Remarks.- Records good except those for low water prior to Dec. 6 and those for Feb. 1-28, which are poor. Discharge Oct. 1 to Dec. 6, Jan. 29 to Mar. 1, Mar. 9-13, 23-31, Apr. 17, 18, from power-plant records supplemented by average leakage for discharges below 500 second-feet. Other discharges from tail-water rating. Some water is diverted from Lake St. Marys by Miami & Erie Canal into Jennings Creek, tributary to Auglaize River above station. Records of daily discharge as determined from power-plant record furnished by Toledo Edison Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,630	125	115	530	368	30	6,580	193	18	39	25	76
2	2,230	125	170	400	286	740	5,340	22	18	394	78	37
3	936	82	30	797	446	1,400	3,500	20	20	250	28	25
4	697	143	351	1,180	30	3,350	2,740	56	90	27	22	29
5	519	30	309	776	280	6,240	3,070	27	88	277	23	25
6	394	141	141	705	241	5,740	3,350	26	36	110	25	22
7	378	204	29	447	213	3,960	2,880	138	34	36	30	23
8	30	128	116	1,330	199	2,480	2,140	108	142	35	28	26
9	318	128	152	1,420	129	1,100	1,900	222	230	88	25	25
10	240	125	112	1,980	129	644	1,840	114	29	36	76	25
11	87	142	225	1,730	30	237	1,420	110	114	62	39	36
12	210	30	177	1,220	129	375	234	179	42	31	31	28
13	141	139	108	1,210	129	508	350	28	132	61	68	23
14	238	127	121	632	129	369	782	109	112	39	31	23
15	30	30	120	1,040	128	352	603	103	28	25	283	194
16	141	30	21	772	143	445	3,150	98	110	26	490	240
17	141	30	19	478	282	924	10,500	22	31	26	346	145
18	140	170	220	691	30	866	7,680	96	110	27	794	151
19	128	30	1,240	752	135	2,390	4,290	82	112	27	365	27
20	30	126	958	748	114	3,140	2,550	19	421	24	380	120
21	198	129	476	31	30	2,400	1,810	87	385	24	276	25
22	68	30	663	506	132	2,420	1,200	30	535	24	29	22
23	140	130	1,020	635	129	2,040	802	14	134	26	114	21
24	128	30	460	742	30	1,800	690	80	30	25	33	20
25	140	172	294	774	30	569	464	16	29	24	34	21
26	263	30	451	654	129	971	460	16	182	56	32	24
27	177	131	195	712	30	2,380	402	16	245	32	31	192
28	181	129	195	23	51	6,440	433	84	832	28	32	64
29	30	126	228	355		7,830	18	17	1,110	27	31	130
30	141	30	333	245		10,700	320	16	970	25	30	26
31	137		320	374		12,400		17		25	29	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,630	30	396		
November	204	30	101		
December	1,240	19	302		
January	1,980	23	771		
February	446	30	148		
March	12,400	30	2,750		
April	10,500	18	2,450		
May	222	14	69.8		
June	1,110	18	212		
July	394	24	63.1		
August	794	22	124		
September	240	20	61.5		
The year	12,400	14	624		

Ottawa River at Allentown, Ohio

Location.- Water-stage recorder above concrete control in NW¼ sec. 29, T. 3 S., R. 6 E., at highway bridge at Allentown, Allen County. Zero of gage is 789.67 feet above mean sea level.

Drainage area.- 168 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 120 second-feet.

Extremes.- Maximum discharge during year, 1,240 second-feet Mar. 3 (gage height, 5.70 feet); maximum gage height, during year, 6.50 feet Mar. 2 (ice jam); minimum discharge; minimum discharge, 4.2 feet Sept. 14.
1923-34: Maximum discharge, 2,910 second-feet Mar. 20, 1927 (gage height, 9.0 feet); minimum, 1.4 second-feet June 28, 29, 1933.

Remarks.- Records excellent except those partly estimated Oct. 13-23, which are good, those estimated because of ice effect, Feb. 11 to Mar. 1, and other estimated periods, Oct. 1-12, Dec. 15-21, Mar. 3-8, and Sept. 25-30, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	325	14.6	11.6	128	34	12	259	23	15.6	10.8	6.4	8.4
2	200	14.2	12.2	167	30	180	178	23	12.0	8.6	8.2	7.8
3	68	45	15.5	105	28	620	116	21	11.4	9.4	9.3	7.7
4	54	30	24	57	28	400	120	21	14.3	9.0	8.6	10.3
5	51	20	22	62	26	130	190	18.0	12.6	9.9	8.0	9.6
6	41	22	16.6	123	25	62	150	14.6	12.8	9.8	7.3	10.2
7	32	15.1	14.6	130	26	50	136	13.2	12.5	14.3	8.4	14.8
8	27	15.4	15.4	155	21	44	116	13.6	12.0	10.3	8.0	13.6
9	24	16.1	11.0	251	20	39	89	13.2	65	8.2	7.0	7.4
10	22	14.8	12.6	203	18.6	35	59	13.4	50	12.6	22	7.6
11	23	15.6	12.7	128	18	33	56	9.7	17.8	8.8	128	8.6
12	18	16.5	12.4	102	17	27	49	13.3	12.6	9.8	20	7.7
13	21	13.5	11.7	116	17	28	46	12.6	11.0	13.4	9.6	7.1
14	20	14.6	11.3	164	16	31	53	15.6	10.5	10.7	8.6	7.3
15	20	14.4	11	121	16	31	47	14.0	10.7	10.2	9.5	9.2
16	20	13.0	12	117	15	39	626	13.4	10.5	8.7	95	14.8
17	17	13.2	18	91	15	41	494	13.0	11.8	9.0	28	8.1
18	17	15.4	48	76	15	113	186	13.2	85	9.5	13.3	8.9
19	16	13.8	130	65	14	134	115	13.3	60	8.7	10.6	8.4
20	16	12.7	110	46	14	125	79	12.5	18.2	8.9	9.1	7.2
21	16	14.0	96	41	14	158	61	12.2	12.7	8.6	9.8	7.5
22	84	19.0	99	40	13	163	52	12.1	14.6	8.8	8.7	8.1
23	48	16.0	79	76	13	107	44	11.2	20	8.0	8.8	9.2
24	24	15.2	56	84	13	57	41	15.6	11.8	8.6	8.6	7.9
25	21	13.9	41	64	13	57	36	13.2	10.5	8.9	8.6	10
26	18.6	13.2	38	55	12	54	32	10.8	12.4	8.8	7.6	9
27	18.6	12.0	17.2	48	12	648	30	9.7	110	26	6.5	9
28	17.2	12.6	23	56	12	635	28	9.0	28	10.4	7.6	9
29	16.1	12.0	26	40		754	24	10.6	15.5	8.6	7.3	9
30	14.6	13.2	26	47		946	22	10.4	12.6	7.3	6.6	9
31	15.0		50	43		474		8.8		9.2	7.4	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	325	14.6	42.7	0.254	0.29
November	45	12.0	16.4	.098	.11
December	130	11.0	35.0	.208	.24
January	251	40	96.8	.576	.66
February	34	12	18.4	.110	.11
March	946	12	201	1.20	1.38
April	626	22	117	.696	.78
May	23	8.8	13.8	.082	.09
June	110	10.5	24.5	.146	.16
July	26	7.3	10.1	.060	.07
August	128	6.5	16.6	.099	.11
September	14.8	7.1	9.08	.054	.06
The year	946	6.5	50.5	.301	4.06

Ottawa River at Kalida, Ohio

Location.- Chain gage in SW¼ sec. 5, T. 1 S., R. 6 E., at highway bridge in Kalida, Putnam County. Zero of gage is 707.41 feet above mean sea level.

Drainage area.- 315 square miles.

Records available.- September 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 2,230 second-feet Mar. 30 (gage height, 12.00 feet); minimum, 4.7 second-feet Aug. 2 (gage height, 1.30 feet).
1930-34: Maximum discharge recorded, 4,110 second-feet Jan. 1, 1933 (gage height, 13.90 feet); minimum, 4.3 second-feet Sept. 18, 1932 (gage height, 1.22 feet).

Remarks.- Records good except those estimated because of ice effect, Nov. 15-21, Dec. 9-16, 27-31, Jan. 29 to Mar. 2, and Mar. 10, 11, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	444	22	21	183	68	20	660	40	12	17	5.6	6.5
2	283	24	19	359	50	60	426	40	13	14	4.7	12
3	183	22	24	283	47	1,350	308	40	15	11	7.3	11
4	129	26	26	134	46	1,480	246	40	13	8.2	7.0	9.4
5	109	52	40	95	44	986	308	40	13	7.6	7.3	7.0
6	90	32	46	124	41	558	308	34	15	7.3	9.1	8.2
7	78	35	33	140	39	298	261	26	13	12	7.0	7.6
8	70	28	26	258	36	210	232	20	12	14	7.0	17
9	66	24	21	444	33	90	176	20	13	14	7.0	18
10	56	24	21	444	31	64	128	20	17	11	7.3	14
11	40	24	21	253	30	50	122	18	49	12	49	8.2
12	34	25	21	183	29	43	112	19	15	13	324	7.6
13	32	22	20	196	28	66	92	18	14	14	56	12
14	32	21	19	268	27	60	88	19	13	14	21	10
15	30	21	19	253	26	70	88	19	12	14	14	10
16	28	20	21	162	25	74	1,190	21	11	11	49	12
17	38	20	33	162	25	78	1,510	18	10	9.7	134	16
18	27	20	82	151	24	283	578	17	14	8.2	76	16
19	25	21	210	114	24	313	308	17	64	7.3	28	13
20	28	21	170	95	23	196	204	17	102	7.6	15	12
21	21	22	157	66	23	328	151	16	36	7.0	13	11
22	49	23	224	60	22	298	122	14	15	7.3	11	9.4
23	119	26	124	90	22	196	102	13	19	7.0	11	8.5
24	66	26	104	124	21	129	88	16	22	7.0	10	7.6
25	37	26	82	119	21	95	68	19	17	7.0	10	12
26	32	25	70	95	20	100	64	22	13	6.5	11	11
27	33	22	50	78	20	1,140	60	15	68	9.7	9.7	10
28	30	21	35	90	20	1,510	49	14	145	11	8.5	10
29	30	20	42	86		1,290	46	12	56	19	7.6	49
30	26	23	48	77		2,140	43	12	33	10	7.0	151
31	24		62	69		1,290		12		6.8	6.8	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	444	21	73.6	0.234	0.27
November	52	20	24.5	.078	.09
December	224	19	61.0	.194	.22
January	444	60	169	.536	.62
February	68	20	30.9	.098	.10
March	2,140	20	480	1.52	1.75
April	1,510	43	271	.860	.96
May	40	12	21.5	.068	.08
June	145	10	28.8	.091	.10
July	19	6.5	10.5	.033	.04
August	324	4.7	30.4	.096	.11
September	151	6.5	16.9	.054	.06
The year	2,140	4.7	102	.324	4.40

Blanchard River near Findlay, Ohio

Location.- Water-stage recorder on east line of sec. 10, T. 1 N., R. 10 E., at highway bridge 2 miles northwest of Findlay, Hancock County. Zero of gage is 754.55 feet above mean sea level.

Drainage area.- 343 square miles.

Records available. November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 238 second-feet.

Extremes.- Maximum discharge during year, 1,700 second-feet Mar. 29 (gage height, 5.55 feet); minimum, 0.4 second-foot Aug. 26, 27, and Sept. 3.
1923-34: Maximum discharge, 6,320 second-feet Dec. 1, 1927 (gage height, 14.5 feet); minimum, that of Aug. 26, 27, and Sept. 3, 1934.
Flood of March 1913 reached a stage corresponding to 18.5 feet on gage.

Remarks.- Records good except those estimated because of ice, Dec. 28-31, Jan. 28 to Mar. 1, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	167	14	15	164	39	15	450	45	9.2	14	1.0	0.6
2	106	14	15	318	37	42	335	44	6.8	11	1.0	.9
3	73	23	20	189	33	714	256	42	4.5	11	1.4	.4
4	55	18	20	119	31	1,090	467	41	5.8	6.3	.7	.7
5	44	15	20	102	28	1,060	666	40	5.6	6.3	.6	.9
6	35	15	21	170	26	449	458	41	8.6	6.8	.8	1.0
7	32	16	20	184	24	252	365	37	41	7.3	.9	2.8
8	27	18	20	186	23	139	299	32	24	6.8	.9	1.2
9	25	17	20	298	22	77	236	31	19	4.5	1.2	.8
10	23	18	19	274	20	75	181	30	14	3.0	3.6	.8
11	21	20	18	180	19	53	175	29	10	3.3	2.8	.9
12	20	19	17	142	19	49	156	29	7.8	3.0	.7	.8
13	19	16	16	122	19	59	145	28	7.3	3.7	.7	.9
14	15	17	16	153	18	59	153	30	7.3	3.3	.9	1.2
15	15	15	17	150	18	59	153	29	7.3	3.0	.8	1.4
16	15	15	20	125	17	80	885	28	7.3	3.0	9.4	1.0
17	18	14	34	82	17	88	656	27	11	3.7	1.0	.7
18	12	14	79	117	17	192	350	24	199	2.5	.9	.8
19	13	14	231	102	17	226	236	24	119	2.8	1.0	.8
20	16	14	154	67	16	204	167	23	42	2.5	1.0	.7
21	12	18	115	56	16	223	132	23	24	2.3	.9	.6
22	27	20	132	64	16	269	108	20	25	2.0	.7	6.7
23	19	22	100	64	16	184	100	18	24	1.6	.8	.7
24	28	21	75	75	15	132	88	21	25	1.6	.7	.7
25	34	20	61	70	15	97	79	15	23	3.0	.6	.8
26	31	18	52	62	15	80	72	16	18	2.0	.5	.8
27	24	20	32	59	15	820	69	16	41	8.0	.4	5.2
28	23	17	29	54	15	1,210	58	15	31	1.2	.6	.9
29	19	18	28	50		1,520	52	13	20	1.0	.6	12
30	17	17	28	46		1,330	49	14	22	.9	.6	1.0
31	16		34	43		718		11		1.0	.6	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	167	12	32.3	0.094	0.11
November	23	14	17.2	.050	.06
December	231	15	47.7	.139	.16
January	318	43	125	.364	.42
February	39	15	20.8	.061	.06
March	1,520	15	373	1.09	1.26
April	885	49	253	.738	.82
May	45	11	27.0	.079	.09
June	199	4.5	27.0	.079	.09
July	14	.9	4.27	.012	.01
August	9.4	.4	1.24	.0036	.004
September	12	.4	1.62	.0047	.005
The year	1,520	.4	78.1	.228	3.09

Blanchard River near Dupont, Ohio

Location.- Water-stage recorder on east line of sec. 13, T. 1 N., R. 5 E., at highway bridge 4 miles east of Dupont, Putnam County. Zero of gage is 691.42 feet above mean sea level.

Drainage area.- 749 square miles.

Records available.- July 1928 to September 1934.

Extremes.- Maximum discharge during year, 3,810 second-feet Mar. 31 (gage height, 14.36 feet); minimum, 0.9 second-foot Aug. 31 and Sept. 1 (gage height, 0.44 foot). 1928-34: Maximum discharge, 16,800 second-feet Jan. 15, 1930 (gage height, 26.7 feet); minimum, that of Aug. 31 and Sept. 1, 1934.

Remarks.- Records good except those estimated because of ice effect, Nov. 17-19, Dec. 7-16, 28-31, Jan. 4, Jan. 30 to Mar. 1, and Mar. 12, 13, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	771	30	30	79	68	27	2,240	85	16	65	2.0	1.5
2	334	28	30	143	62	89	1,240	77	16	42	4.0	7.3
3	194	26	30	382	56	800	779	74	17	36	4.6	11
4	134	26	32	310	52	2,010	714	69	18	34	4.0	7.3
5	96	26	32	237	47	2,560	924	65	16	24	3.2	4.0
6	71	27	30	194	44	2,400	1,140	62	14	18	2.5	3.2
7	56	32	29	230	41	1,410	870	58	14	17	2.5	3.2
8	48	28	28	353	38	585	664	54	13	13	2.5	3.4
9	44	30	28	407	36	311	522	52	13	10	2.5	3.7
10	41	28	27	534	33	224	407	46	18	10	2.0	3.4
11	36	28	26	478	32	167	336	42	28	9.4	1.9	3.4
12	34	28	25	336	31	140	287	41	22	9.4	1.7	3.7
13	29	28	25	250	31	120	257	36	18	8.5	1.7	3.2
14	26	28	25	237	30	114	244	36	14	7.6	1.4	2.7
15	23	28	24	264	29	116	244	36	11	6.7	2.7	5.8
16	22	26	24	250	28	120	1,530	36	10	4.6	7.3	16
17	22	26	24	218	28	132	2,910	36	9.4	4.3	8.5	7.6
18	19	26	28	189	27	284	2,170	34	10	4.0	7.3	7.0
19	18	26	60	189	27	545	1,050	32	30	3.2	5.5	7.0
20	18	26	139	172	27	591	583	30	237	2.7	6.4	6.7
21	19	26	224	156	26	591	380	27	172	2.5	9.1	7.6
22	18	26	212	112	26	568	287	24	94	2.7	7.3	7.6
23	18	26	189	145	26	467	237	23	56	2.7	5.2	7.0
24	28	28	167	129	25	344	206	23	43	2.5	4.6	5.5
25	43	30	140	122	25	250	184	22	43	2.0	3.7	4.9
26	38	31	111	120	25	194	156	24	42	2.0	2.7	5.2
27	34	31	80	108	25	1,010	140	25	41	2.0	1.9	9.7
28	36	30	64	102	25	1,930	130	21	42	1.7	1.9	9.7
29	38	30	52	86		2,300	113	18	70	1.4	1.9	11
30	34	30	48	80		3,270	97	18	72	1.4	1.4	10
31	31		54	72		3,580		16		1.3	1.1	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	771	18	76.5	0.102	0.12
November	32	26	28.0	.037	.04
December	224	24	65.7	.088	.10
January	534	72	216	.288	.33
February	68	25	34.6	.046	.05
March	3,580	27	879	1.17	1.35
April	2,910	97	701	.936	1.04
May	85	16	40.1	.054	.06
June	237	9.4	40.6	.054	.06
July	65	1.3	11.3	.015	.02
August	9.1	1.1	3.71	.005	.006
September	16	1.5	6.31	.0084	.009
The year	3,580	1.1	176	.235	3.18

South Branch of Portage River near Pemberville, Ohio

Location.- Chain gage in sec. 21, T. 5 N., R. 12 E., at highway bridge 2½ miles southwest of Pemberville, Wood County.

Drainage area.- 334 square miles.

Records available.- August 1930 to September 1934.

Extremes.- Maximum discharge recorded during year, 3,400 second-feet Apr. 17 (gage height, 9.10 feet); minimum, 0.4 second-foot on several days during August and September.
1930-34: Maximum discharge recorded, 7,350 second-feet Mar. 14, 1933 (gage height, 13.00 feet); minimum, 0.3 second-foot Aug. 24-26, Sept. 1, 2, 1933.

Remarks.- Records fair except those estimated because of ice effect Dec. 11-14, 26-31, Jan. 1-8, Jan. 12 to Mar. 2, Mar. 9-12, and those estimated May 19-21, June 23 to July 6, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	1.9	2.7	10	5.0	1.0	582	30	2.7	40	1.7	0.4
2	20	1.6	3.5	60	3.5	10	406	28	2.3	100	1.4	1.6
3	9.6	1.8	3.7	100	2.8	334	262	28	1.7	70	4.0	5.4
4	6.8	2.9	3.7	55	2.4	720	1,300	26	1.4	50	4.8	3.3
5	5.0	2.5	3.5	45	2.1	555	1,910	24	1.4	20	3.5	1.9
6	3.7	2.5	4.5	50	1.9	530	820	22	1.4	13	2.7	1.6
7	3.7	2.9	3.5	60	1.8	334	530	20	1.7	8.1	1.7	2.3
8	3.3	1.9	4.2	55	1.6	140	358	16	2.1	7.8	1.0	2.7
9	3.5	2.2	4.0	180	1.5	90	262	14	2.1	5.7	.9	2.3
10	2.9	2.4	3.5	190	1.4	60	190	11	2.1	4.6	1.9	2.1
11	2.0	2.5	3.2	115	1.4	45	178	9.0	1.7	3.3	2.3	1.6
12	1.9	2.5	3.1	70	1.3	35	190	9.0	1.7	3.1	2.3	1.6
13	1.9	2.5	3.0	53	1.3	29	166	9.0	1.4	2.7	3.5	2.1
14	1.9	2.5	2.9	43	1.2	32	155	9.0	1.4	2.5	2.3	2.5
15	1.6	3.1	2.9	35	1.2	53	190	8.4	1.4	1.9	2.3	6.9
16	1.6	4.5	3.7	30	1.1	52	1,640	8.4	1.4	1.7	3.5	7.5
17	1.4	4.2	12	25	1.1	37	2,520	7.8	1.4	1.7	2.3	7.2
18	1.4	3.3	10	22	1.1	102	820	7.3	2.7	1.7	1.9	3.1
19	1.4	2.2	7.8	20	1.1	334	480	7.4	29	1.4	1.7	1.7
20	1.4	2.0	8.6	18	1.1	262	298	6.9	72	1.4	1.6	1.1
21	1.6	2.9	11	17	1.1	250	202	6.5	30	1.4	1.1	.9
22	1.9	3.7	16	16	1.0	262	155	6.0	25	1.4	.6	1.1
23	2.4	4.0	24	15	1.0	78	129	6.0	100	1.2	.4	6.9
24	7.1	5.5	19	15	1.0	155	98	6.0	80	1.0	.4	5.4
25	3.7	4.2	10	12	1.0	75	75	6.0	50	.8	.5	4.0
26	3.1	3.7	7.4	11	1.0	50	68	6.0	28	.7	.5	3.1
27	2.2	3.5	5.8	9.0	1.0	480	60	6.0	250	3.5	.5	2.7
28	1.9	2.4	5.0	8.0	1.0	720	50	5.1	180	6.0	.4	2.5
29	1.9	2.2	4.5	7.3		690	42	4.3	110	6.9	.5	5.4
30	1.9	2.4	5.0	6.6		1,740	34	3.5	55	2.9	.5	5.4
31	1.9		5.6	6.2		995		3.1		2.1	.4	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	41	1.4	4.70	0.014	0.02
November	5.5	1.6	2.88	.0086	.01
December	24	2.7	6.69	.020	.02
January	190	6.2	43.8	.131	.15
February	5.0	1.0	1.57	.0047	.005
March	1,740	1.0	298	.892	1.03
April	2,520	34	472	1.41	1.57
May	30	3.1	11.6	.035	.04
June	250	1.4	34.7	.104	.12
July	100	.7	11.9	.036	.04
August	4.8	.4	1.71	.0051	.006
September	7.5	.4	3.21	.0096	.01
The year	2,520	.4	74.5	.223	3.02

Portage River at Woodville, Ohio

Location.- Water-stage recorder installed Oct. 9, 1933, in sec. 28, T. 6 N., R. 13 E., at highway bridge in Woodville, Sandusky County. Staff gage 50 feet downstream used prior to that date. Zero of both gages is 615.14 feet above mean sea level.

Drainage area.- 433 square miles.

Records available.- July 1928 to September 1934.

Extremes.- Maximum discharge during year, 4,000 second-feet Apr. 17 (gage height, 8.71 feet); minimum, 0.8 second-foot July 25, 28 (gage height, 1.60 feet).
1928-34: Maximum discharge, about 10,500 second-feet Jan. 15, 1930 (gage height, 12.96 feet); minimum, 0.3 second-foot Aug. 26, 1931; minimum gage height, that of July 25, 26, 1934.

Remarks.- Records fair except those estimated because of ice effect, Jan. 13-20, 26-31, Feb. 1-24, and those estimated Feb. 25 to Apr. 5, May 13-31, July 13-23, which are poor.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	2.2	3.8	12	6.4	1.3	700	40	6.5	62	2.9	1.9
2	22	2.2	3.8	17	4.5	9.0	450	36	5.5	79	2.6	7.0
3	15	2.6	5.5	77	3.6	55	300	36	4.5	128	3.4	11
4	12	2.3	6.0	98	3.1	300	1,500	38	4.0	71	3.0	11
5	8.8	2.3	5.5	61	2.7	900	2,200	40	3.6	39	4.5	8.0
6	8.0	3.2	6.0	56	2.4	500	1,400	41	3.2	22	5.2	6.6
7	7.3	4.0	7.0	73	2.2	400	791	41	2.6	16	3.8	7.6
8	6.3	4.2	6.6	84	2.0	250	506	39	2.4	12	2.9	9.2
9	6.3	3.8	5.8	110	1.9	150	347	39	2.6	11	2.3	5.8
10	5.5	3.4	5.8	226	1.8	110	248	39	2.8	8.8	2.4	3.8
11	5.0	3.4	5.5	133	1.7	90	234	36	2.3	7.3	2.6	3.2
12	5.0	3.6	5.0	75	1.6	75	248	35	2.2	6.0	2.0	2.8
13	4.8	4.0	4.5	62	1.6	65	219	33	2.0	5.6	7.7	2.4
14	4.5	4.2	3.8	54	1.5	60	219	30	1.8	4.5	4.8	2.4
15	4.2	4.0	4.2	47	1.5	65	256	28	2.0	4.2	4.0	3.4
16	4.8	3.8	4.2	41	1.4	70	2,130	25	2.0	3.5	4.5	4.8
17	5.0	3.6	9.5	37	1.4	70	3,190	23	1.8	3.0	4.2	10
18	4.2	3.6	17	33	1.4	110	1,220	22	2.3	3.0	5.0	9.6
19	4.0	3.8	14	30	1.4	320	649	20	3.1	3.0	7.3	6.6
20	3.2	4.0	14	27	1.4	250	385	18	40	2.5	5.8	6.6
21	3.2	4.2	13	25	1.3	230	248	17	39	2.5	4.0	6.0
22	4.2	5.8	15	27	1.3	240	192	15	24	2.5	2.9	7.0
23	4.0	6.6	19	27	1.3	190	166	14	56	1.8	2.2	8.8
24	4.5	6.6	21	22	1.3	160	140	13	147	1.0	1.8	14
25	7.0	7.0	18	20	1.3	120	115	12	72	.8	1.6	10
26	7.0	7.0	14	15	1.3	100	89	11	46	.9	1.4	7.0
27	5.5	5.5	10	13	1.3	600	77	10	160	1.8	1.1	10
28	4.0	4.8	8.0	10	1.3	800	70	10	390	2.2	1.6	10
29	3.4	4.5	7.3	9.0		850	56	9.5	168	7.3	1.6	11
30	2.6	4.8	7.6	8.0		2,100	45	9.0	84	7.3	1.8	11
31	2.4		9.2	7.3		1,200		8.7		4.5	1.6	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	39	2.4	7.18	0.017	0.02
November	7.0	2.2	4.17	.0096	.01
December	21	3.8	9.02	.021	.02
January	226	7.3	49.6	.115	.13
February	6.4	1.3	2.00	.0046	.005
March	2,100	1.3	336	.776	.89
April	3,190	45	613	1.42	1.58
May	41	8.7	25.4	.059	.07
June	390	1.8	42.8	.099	.11
July	128	.8	16.9	.039	.04
August	7.7	1.1	3.31	.0076	.009
September	14	1.9	7.28	.017	.02
The year	3,190	.8	93.0	.215	2.90

Sandusky River near Bucyrus, Ohio

Location.- Chain gage in NE¼ sec. 10, T. 3 S., R. 16 E., at highway bridge 1½ miles west of Bucyrus, Crawford County.

Drainage area.- 89.8 square miles.

Records available.- August 1925 to September 1934.

Extremes.- Maximum discharge recorded during year, 935 second-feet Mar. 3 (gage height, 5.05 feet); minimum, 0.7 second-foot July 30 (gage height, 0.60 foot). 1925-34: Maximum discharge recorded, 6,900 second-feet Dec. 14, 1927 (gage height, 9.15 feet); minimum, 0.6 second-foot Aug. 13-14, 1933.

Remarks.- Records good except those estimated because of ice effect, Nov. 17-18, Dec. 9-14, 28-31, Jan. 18-20, Jan. 29, Mar. 2, Mar. 9-12, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	1.7	3.8	84	7.0	1.5	76	8.7	2.3	1.4	1.1	1.1
2	1.5	1.5	3.1	78	6.0	10	61	9.1	1.6	5.0	1.4	1.0
3	1.8	3.6	5.0	29	4.5	935	45	8.7	1.3	1.5	2.1	.9
4	1.7	1.9	5.5	21	4.0	480	78	8.4	1.2	1.1	1.2	1.0
5	1.6	3.2	11	27	3.5	250	205	7.1	1.2	1.0	.9	1.1
6	1.9	1.6	11	59	3.0	194	238	8.0	1.4	1.1	.9	1.0
7	1.7	1.5	8.4	40	2.5	97	238	4.2	1.5	4.8	1.0	1.7
8	5.2	2.2	5.7	63	2.2	45	104	8.4	1.4	9.8	1.0	1.2
9	1.8	2.9	3.0	59	1.9	30	65	6.8	2.5	3.8	.9	1.0
10	1.7	2.2	1.6	42	1.8	22	50	5.0	1.2	2.3	1.4	1.1
11	1.9	5.5	1.5	22	1.7	19	43	4.2	1.2	1.9	4.6	1.0
12	1.5	2.4	1.4	25	1.6	17	53	3.4	1.2	1.7	1.1	1.1
13	1.4	2.5	1.4	26	1.6	15	54	3.8	1.2	1.5	1.1	1.1
14	1.4	3.4	1.4	32	1.6	58	59	4.4	1.1	1.3	1.1	1.0
15	1.4	3.2	2.5	32	1.6	47	72	3.4	1.1	1.2	1.7	1.0
16	1.3	2.1	8.4	37	1.6	35	72	3.8	1.2	1.2	14	1.0
17	1.5	2.3	20	20	1.5	41	84	3.8	1.1	1.2	1.4	1.0
18	1.4	3.2	55	16	1.5	61	53	3.4	1.4	1.0	1.2	1.0
19	1.2	4.0	32	14	1.5	56	40	3.1	1.1	1.4	1.2	1.1
20	1.0	7.7	22	12	1.5	49	31	2.8	1.1	1.2	1.1	1.2
21	1.2	11	27	12	1.5	71	24	2.6	1.2	1.1	1.1	1.0
22	18	7.7	28	13	1.5	90	23	2.3	13	1.1	1.1	1.1
23	7.7	9.1	19	16	1.5	45	22	2.1	2.1	.9	.9	1.4
24	6.0	9.8	15	24	1.5	27	21	3.1	1.2	.9	.9	.9
25	3.2	6.5	12	19	1.5	18	18	2.3	1.0	.9	.9	1.0
26	1.9	7.4	9.0	15	1.5	23	16	2.3	1.2	1.1	1.0	1.5
27	1.4	4.6	7.0	14	1.5	361	15	2.1	2.5	5.0	.9	1.5
28	1.3	3.8	5.4	15	1.5	184	12	2.0	3.8	1.1	1.2	1.1
29	1.3	4.2	4.8	12		164	11	2.1	2.3	1.0	1.2	12
30	1.4	3.8	4.8	11		145	9.4	1.7	2.3	.8	1.0	1.4
31	1.9		6.0	9.0		90		4.6		1.0	1.0	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18	1.0	2.60	0.029	0.03
November	11	1.5	4.22	.047	.05
December	55	1.4	11.0	.122	.14
January	84	9.0	29.0	.323	.37
February	7.0	1.5	2.29	.026	.03
March	935	1.5	119	1.33	1.53
April	238	9.4	63.1	.703	.78
May	9.1	1.7	4.44	.049	.06
June	13	1.0	1.93	.021	.02
July	9.8	.8	1.95	.022	.03
August	14	.9	1.70	.019	.02
September	12	.9	1.48	.016	.02
The year	935	.8	20.4	.227	3.08

Sandusky River near Upper Sandusky, Ohio

Location.- Water-stage recorder in sec. 21, T. 2 S., R. 14 E., at highway bridge 2 miles northeast of Upper Sandusky, Wyandot County, and three-quarters of a mile above mouth of Rock Run.

Drainage area.- 299 square miles.

Records available.- October 1921 to September 1934.

Average discharge.- 13 years, 270 second-feet.

Extremes.- Maximum discharge during year, 2,020 second-feet Mar. 3, 4 (gage height, 5.51 feet); minimum, 1.0 second-foot Sept. 6, 7 (gage height, 0.67 foot). 1921-34: Maximum discharge, 6,750 second-feet Dec. 16, 1927 (gage height, 10.5 feet); minimum, that of Sept. 6, 7, 1934.

Remarks.- Records good except those below 10 second-feet, those estimated because of ice effect, Dec. 9-14, 27-30, Jan. 16, 19, Jan. 29 to Mar. 1, and those estimated because of missing gage-height record, Mar. 6-19, 23-29, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	12	20	142	34	11	322	33	7.5	6.3	2.3	2.5
2	30	12	20	344	31	99	233	32	6.5	14	2.3	2.3
3	24	14	20	248	29	1,720	179	31	6.5	6.5	2.1	2.1
4	20	14	20	102	27	1,920	230	30	6.0	4.2	2.1	2.1
5	16	13	20	105	21	1,490	559	28	5.2	3.4	2.1	1.7
6	14	14	25	161	24	600	536	26	5.2	3.1	2.1	1.1
7	12	17	34	189	23	400	651	26	4.8	7.9	1.9	1.0
8	11	17	34	173	21	250	484	24	3.6	8.0	2.6	1.1
9	12	17	28	218	20	150	267	22	5.2	21	2.9	1.1
10	14	17	25	179	19	100	173	22	8.0	19	2.7	1.1
11	14	16	21	111	18	85	137	22	9.0	45	2.7	1.2
12	14	15	19	89	18	77	114	21	9.5	16	16	1.2
13	14	16	17	82	17	70	116	19	6.5	20	13	1.4
14	12	16	17	83	16	80	116	19	4.5	17	7.0	1.7
15	11	16	20	90	16	170	121	19	3.6	9.2	4.5	1.9
16	9.9	16	28	97	15	140	154	19	3.1	6.0	12	1.9
17	9.9	14	81	79	14	120	208	17	2.9	4.2	22	1.9
18	9.9	14	150	70	14	140	182	16	2.7	3.6	21	1.4
19	9.9	15	142	62	14	180	126	15	2.9	3.1	16	1.2
20	11	16	108	56	13	151	94	14	2.9	3.1	10	1.1
21	12	18	94	59	13	168	76	13	2.9	3.1	6.5	2.1
22	52	27	87	54	12	256	65	11	3.6	3.1	4.8	3.9
23	119	30	87	50	12	200	62	10	6.5	2.9	3.6	3.9
24	58	30	70	51	12	100	60	10	20	2.9	3.4	2.9
25	42	30	58	55	12	92	55	10	16	2.7	3.1	2.1
26	27	29	51	53	12	76	50	10	7.5	2.7	3.1	2.1
27	20	27	47	49	11	560	46	10	9.0	2.5	3.1	2.9
28	17	25	45	47	11	1,170	42	10	7.0	2.5	2.9	5.2
29	15	24	43	45		710	38	8.5	7.5	2.5	2.9	14
30	14	22	41	40		514	36	8.0	7.0	2.3	2.7	19
31	13		44	36		456		7.5		2.3	2.5	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	119	9.9	22.5	0.075	0.09
November	30	12	18.8	.063	.07
December	150	17	48.9	.164	.19
January	344	36	104	.348	.40
February	34	11	17.8	.060	.06
March	1,920	11	395	1.32	1.52
April	661	36	184	.615	.69
May	33	7.5	18.2	.061	.07
June	20	2.7	6.44	.022	.02
July	45	2.3	8.07	.027	.03
August	22	1.9	5.96	.020	.02
September	19	1.0	2.97	.0099	.01
The year	1,920	1.0	70.0	.234	3.17

Sandusky River near Mexico, Ohio

Location.- Water-stage recorder in sec. 13, T. 1 N., R. 14 E., at highway bridge 4½ miles north of Mexico, Wyandot County, and 3 miles above mouth of Honey Creek.

Drainage area.- 776 square miles.

Records available.- March 1923 to September 1934.

Average discharge.- 11 years, 612 second-feet.

Extremes.- Maximum discharge during year, 4,840 second-feet Mar. 5 (gage height, 11.38 feet); minimum, 7.2 second-feet July 26 (gage height, 1.56 feet).
1923-34: Maximum discharge, 13,900 second-feet Mar. 22, 1927 (gage height, 19.9 feet); minimum, 4 second-feet Aug. 25, 1928.

Remarks.- Records excellent except those estimated because of ice effect, Dec. 28, 29, Jan. 18-20, Jan. 29 to Mar. 2, Mar. 9-13, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	48	57	219	88	29	975	84	24	21	9.0	10
2	122	43	53	607	81	35	737	80	24	17	9.0	10
3	88	48	55	572	76	1,350	554	76	20	17	9.0	9.7
4	69	49	57	387	70	3,900	734	71	19	17	8.5	9.0
5	56	49	60	269	66	4,360	1,530	68	16	16	8.5	9.0
6	50	49	62	336	62	3,100	1,340	66	17	15	8.1	9.0
7	43	46	62	422	58	1,440	1,160	64	17	14	8.5	9.0
8	42	46	64	407	56	698	1,090	58	18	13	16	9.7
9	38	48	70	470	52	360	775	56	21	16	36	9.7
10	35	50	66	503	50	240	486	52	21	18	19	9.0
11	36	53	62	378	47	170	378	51	24	41	13	9.0
12	36	55	59	281	45	160	323	50	27	76	14	9.0
13	36	50	55	236	43	150	291	50	28	43	14	10
14	35	45	53	233	42	196	293	51	26	28	26	9.0
15	32	52	53	247	40	305	310	51	22	28	38	9.0
16	30	46	62	247	39	392	440	51	17	24	38	9.0
17	30	48	115	203	37	305	661	51	16	17	62	9.0
18	30	49	237	180	36	323	520	50	16	15	51	9.0
19	32	53	323	170	35	392	378	44	16	13	38	9.0
20	31	57	310	150	34	392	286	41	16	11	27	8.5
21	30	62	247	142	33	378	231	38	15	10	25	9.0
22	38	64	231	149	33	520	196	37	13	9.7	20	70
23	88	67	214	149	32	520	176	34	15	9.0	16	65
24	176	73	192	143	31	364	170	32	24	8.5	16	32
25	124	73	156	138	30	253	156	36	26	8.1	15	20
26	111	69	134	138	30	211	138	34	26	7.2	12	16
27	86	67	94	134	30	792	129	28	38	9.0	11	15
28	69	63	83	124	29	1,980	114	26	36	12	11	12
29	59	62	78	110		2,280	102	26	30	16	11	106
30	53	60	72	100		1,830	95	26	26	13	10	168
31	50		75	94		1,380		26		10	10	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	190	30	62.7	0.081	0.09
November	73	43	54.8	.071	.08
December	323	53	113	.146	.17
January	607	94	256	.330	.38
February	88	29	46.6	.060	.06
March	4,360	29	929	1.20	1.38
April	1,530	95	492	.634	.71
May	84	26	48.6	.063	.07
June	38	13	21.8	.028	.03
July	76	7.2	18.5	.024	.03
August	62	8.1	19.7	.025	.03
September	168	8.5	23.3	.030	.03
The year	4,360	7.2	175	.226	3.06

Sandusky River near Fremont, Ohio

Location.- Water-stage recorder in sec. 17, T. 4 N., R. 15 E., at highway bridge 3½ miles southwest of Fremont, Sandusky County, and 2½ miles below mouth of Wolf Creek.

Drainage area.- 1,248 square miles.

Records available.- November 1923 to September 1934; November 1898 to March 1901 at station 4 miles below present site.

Average discharge.- Maximum discharge during year, 9,540 second-feet Mar. 5 (gage height, 5.13 feet); minimum, 9.8 second-feet Sept. 11, 12 (gage height, 0.88 foot).

1923-34: Maximum discharge, 21,000 second-feet Mar. 14, 1933 (gage height, 9.73 feet); minimum, that of Sept. 11, 12, 1934.

Remarks.- Records good except those estimated because of ice effect, Nov. 16-18, Dec. 11-16, Dec. 27 to Jan. 21, Jan. 29 to Mar. 2, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	373	50	70	189	130	37	1,340	162	53	66	12	16
2	235	53	70	1,000	120	40	1,030	157	53	44	21	22
3	173	50	74	1,140	110	1,780	791	147	50	37	30	17
4	131	47	70	750	100	8,200	1,910	152	44	26	28	13
5	82	50	74	457	95	9,440	3,470	162	47	22	21	13
6	56	47	74	474	90	4,720	2,020	136	50	26	21	22
7	63	53	63	542	84	1,500	1,200	152	50	24	12	26
8	66	53	82	570	80	1,020	1,490	173	44	24	14	26
9	56	53	86	628	75	590	1,180	136	34	22	12	26
10	56	56	90	743	70	426	802	122	28	21	28	19
11	53	47	82	618	67	380	658	136	26	22	162	12
12	47	50	76	449	64	340	628	126	19	26	136	12
13	47	50	73	366	60	300	552	126	19	82	56	16
14	50	59	70	317	58	272	542	122	28	74	44	108
15	53	63	68	345	56	345	580	122	42	50	44	112
16	47	58	68	359	53	525	1,060	122	42	39	34	56
17	42	54	122	345	51	457	1,620	122	32	47	66	30
18	39	56	228	310	49	457	1,000	112	28	39	82	30
19	47	59	395	260	47	561	732	112	30	28	70	21
20	34	56	434	240	46	552	542	112	30	26	53	13
21	34	78	380	220	45	542	442	86	34	22	50	14
22	47	70	317	195	43	608	373	82	30	19	39	24
23	37	74	304	189	42	658	317	70	47	17	30	22
24	84	86	286	195	41	542	304	70	50	12	32	74
25	195	94	241	189	40	418	266	82	37	19	28	56
26	147	99	206	189	39	317	247	59	30	19	26	32
27	136	94	180	189	38	663	230	70	237	26	22	30
28	90	90	170	173	38	2,760	195	53	274	28	21	32
29	53	94	150	160		3,840	184	59	126	24	24	32
30	56	86	140	150		3,090	178	56	82	17	21	278
31	53		130	140		1,790		53		11	22	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	373	34	86.5	0.069	0.08
November	99	47	64.3	.052	.06
December	434	63	157	.126	.15
January	1,140	140	390	.313	.36
February	130	38	65.4	.052	.05
March	8,440	37	1,489	1.19	1.37
April	3,470	178	863	.692	.77
May	173	53	111	.089	.10
June	274	19	56.5	.045	.05
July	82	11	30.9	.025	.03
August	162	12	40.7	.033	.04
September	278	12	40.1	.032	.04
The year	8,440	11	285	.228	3.10

East Branch of Huron River near Norwalk, Ohio

Location.- Chain gage at highway bridge 1¾ miles northwest of Norwalk, Huron County, and 1½ miles below mouth of Cole Creek.

Drainage area.- 84.9 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 11 years, 68.9 second-feet.

Extremes.- Maximum discharge recorded during year, 3,070 second-feet Apr. 4 (gage height, 7.40 feet); minimum, 0.1 second-foot July 26.
1923-34: Maximum discharge recorded, 4,610 second-feet Mar. 14, 1933; minimum, that of July 26, 1933.

Remarks.- Records fair. Discharge estimated because of ice effect Dec. 11-14, 26-31, Jan. 1-5, 16-20, 23, 24. Jan. 29 to Mar. 1, Mar. 9-12.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	3.7	14	20	9	4	77	12	2.8	0.8	0.4	1.9
2	3.5	4.0	14	18	8	117	56	11	2.6	.7	.4	3.0
3	3.5	7.6	15	17	8	780	44	10	2.4	.5	111	1.9
4	3.0	9.8	17	17	7	470	2,390	8.6	2.0	.5	17	1.6
5	3.5	8.1	17	22	7	174	600	8.6	2.4	.4	7.6	1.6
6	4.0	8.1	16	24	7	104	409	8.6	5.3	.4	4.3	1.6
7	3.2	8.6	14	21	6	71	214	7.6	2.8	.6	3.2	2.0
8	3.5	9.2	14	22	6	41	105	6.1	1.9	1.0	2.4	3.2
9	4.3	9.8	14	30	6	33	74	5.7	2.0	.9	1.8	2.6
10	4.3	10	14	27	6	29	53	5.7	2.0	.8	2.6	2.0
11	3.5	11	14	24	5	26	61	5.7	1.6	2.0	5.0	1.9
12	3.2	12	13	21	5	24	70	5.7	1.2	.9	3.7	1.6
13	3.2	12	13	18	5	22	70	5.3	1.2	.9	104	1.6
14	3.2	16	13	20	5	38	86	6.1	1.0	.8	61	2.2
15	2.8	20	20	18	5	35	134	6.6	1.0	.7	19	2.2
16	2.6	18	30	17	5	36	200	6.1	1.0	.5	14	3.7
17	2.6	17	19	15	5	39	161	5.7	1.0	.5	20	10
18	2.6	16	21	14	4	50	65	5.0	1.2	.5	12	8.1
19	3.0	17	16	13	4	36	47	5.0	1.9	.4	6.1	4.3
20	2.8	17	14	12	4	36	30	4.3	1.5	.6	4.3	2.8
21	2.8	17	15	12	4	44	25	3.5	1.1	.4	3.2	2.6
22	7.0	17	14	12	4	43	24	3.2	1.1	.3	2.6	2.4
23	5.7	17	12	12	4	27	24	4.0	2.6	.2	2.6	2.6
24	4.3	16	12	12	4	23	25	4.0	1.9	.2	2.6	2.6
25	4.0	15	12	13	4	18	22	4.6	1.4	.2	2.6	2.4
26	4.0	15	12	13	4	17	19	4.0	.9	.2	2.4	1.9
27	4.0	15	12	12	4	429	18	3.7	3.5	3.2	2.4	1.8
28	3.7	14	11	15	4	200	16	3.5	1.6	2.0	2.4	1.9
29	3.7	14	11	12		200	14	3.2	1.2	1.0	2.2	52
30	3.7	15	11	11		163	13	3.2	1.1	.7	1.9	59
31	3.5		20	10		100		2.8		.5	1.9	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7.0	2.6	3.62	0.043	0.05
November	20	3.7	13.0	.153	.17
December	30	11	15.0	.177	.20
January	30	10	16.9	.199	.23
February	9	4	5.3	.062	.06
March	780	4	111	1.31	1.51
April	2,390	13	172	2.03	2.26
May	12	2.8	5.75	.068	.08
June	5.3	.9	1.84	.022	.02
July	3.2	.2	.75	.0088	.01
August	111	.4	13.8	.163	.19
September	59	1.6	6.3	.074	.08
The year	2,390	.2	30.4	.358	4.86

East Branch of Black River at Elyria, Ohio

Location.- Chain gage at Fuller Street Bridge, 1¼ miles southeast of center of Elyria, Lorain County, and 3 miles above junction with West Branch.

Drainage area.- 211 square miles.

Records available.- July 1922 to September 1934.

Average discharge.- 12 years, 180 second-feet.

Extremes.- Maximum discharge recorded during year, 2,900 second-feet Apr. 5 (gage height, 4.65 feet); minimum, 0.1 second-foot Oct. 21 (gage height, 0.63 foot). 1922-34: Maximum discharge recorded, 9,030 second-feet Mar. 14, 1933 (gage height, 10.10 feet); no flow Aug. 9-16, 18-22, 1930, Aug. 28-31, Sept. 1-3, 5-19, 1933.

Remarks.- Records poor. Discharge estimated because of ice effect Nov. 16-19, Dec. 12-15, 27-30, Jan. 17-21, Jan. 29 to Mar. 1.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.2	5.0	32	7	4	119	14	4.4	14	0.2	2.5
2	.2	.2	5.0	57	7	71	92	14	3.9	16	.2	2.5
3	.2	.5	6.2	33	7	469	57	14	2.9	12	311	2.5
4	.2	.5	6.2	19	7	1,160	730	13	2.9	10	298	13
5	.2	.7	5.0	13	7	890	2,460	13	2.5	8.9	102	20
6	.2	.7	3.9	16	7	275	980	12	2.1	6.2	61	16
7	.2	1.1	3.9	16	6	168	386	10	1.7	65	20	11
8	.2	1.4	3.9	18	6	116	258	13	1.4	50	18	7.5
9	.2	1.7	4.4	20	6	105	181	14	1.1	32	12	5.0
10	.2	2.1	3.9	15	6	83	102	14	.9	18	7.5	3.9
11	.2	2.5	3.9	14	6	55	73	17	.9	11	7.5	3.9
12	.2	2.5	4.0	8.9	6	33	102	18	.9	17	6.2	2.9
13	.2	2.5	4.0	10	6	24	188	18	.9	25	4.4	2.9
14	.2	2.5	4.0	13	6	40	336	19	.9	18	3.9	3.9
15	.2	2.1	6.0	11	6	53	275	22	.9	14	3.9	4.4
16	.2	3.0	12	8.9	5	61	237	19	.7	9.7	2.1	7.5
17	.2	3.5	8.9	7.6	5	59	210	18	.9	5.0	3.9	6.2
18	.2	4.0	7.5	6.8	5	73	145	16	2.5	2.9	34	3.9
19	.2	4.5	8.9	5.6	5	73	92	14	33	2.5	24	2.9
20	.2	5.0	8.9	5.6	5	55	57	14	67	2.1	18	2.1
21	.1	4.4	10	5.6	5	67	42	15	37	2.1	12	1.4
22	.5	6.2	8.9	5.6	5	69	37	14	18	1.1	10	1.4
23	.7	5.6	7.5	6.2	5	61	34	12	16	.7	7.5	.9
24	.3	5.0	7.5	6.8	4	43	34	10	13	.5	5.6	.9
25	.3	5.0	7.5	5.6	4	28	29	8.9	9.7	.2	6.8	.7
26	.2	6.2	7.5	5.0	4	20	29	7.5	14	.2	6.8	.7
27	.2	5.0	7.8	3.9	4	130	27	7.5	29	1.4	6.2	.9
28	.2	5.0	8.0	7.5	4	171	24	6.8	20	.9	5.0	.9
29	.2	5.0	8.5	7.0		188	21	6.2	17	.9	3.9	3.9
30	.2	5.0	9.0	7.0		206	18	5.6	14	.7	3.4	19
31	.2		9.7	7.0		136		5.0		.3	2.9	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	0.7	0.1	0.24	0.0011	0.001
November	6.2	.2	3.12	.015	.02
December	12	3.9	6.69	.032	.04
January	5.7	3.9	12.8	.061	.07
February	7	4	5.57	.026	.03
March	1,160	4	161	.763	.88
April	2,460	18	246	1.17	1.31
May	22	5.0	13.0	.062	.07
June	67	.7	10.7	.051	.06
July	65	.2	11.2	.053	.06
August	311	.2	32.5	.154	.18
September	20	.7	5.17	.025	.03
The year	2,460	.1	42.4	.201	2.75

Rocky River near Berea, Ohio

Location.- Staff gage at highway bridge just below junction of East and West Branches and 3 miles northwest of Berea, Cuyahoga County. Zero of gage is 650.52 feet above mean sea level.

Drainage area.- 269 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 11 years, 265 second-feet.

Extremes.- Maximum discharge during year, about 6,060 second-feet Apr. 4 (gage height, 8.70 feet); minimum, 0.5 second-foot Oct. 3-6, 13.

1923-34: Maximum discharge, about 13,700 second-feet Dec. 14, 1927 (gage height, 10.6 feet); maximum stage, 18.6 feet June 29, 1924 (backwater caused by tornado); minimum discharge, 0.2 second-foot Sept. 2, 1932, Aug. 18, 19, 22, 27, 28, 30, 31, 1933.

Maximum known stage, 20.9 feet March, 1913.

Remarks.- Records good except those estimated because of ice effect, Nov. 15-21, Dec. 10-14, 25-31, Jan. 15-24, Jan. 29 to Mar. 1, Mar. 11, 12, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	1.5	11	227	35	60	242	38	6.3	9.6	2.2	1.2
2	.7	1.2	14	134	32	258	176	36	5.8	4.5	2.2	3.0
3	.5	5.0	9.8	81	30	1,060	122	34	5.3	3.2	258	1.2
4	.5	3.4	10	57	28	2,440	4,030	31	5.3	2.2	130	7.3
5	.6	2.3	12	40	27	1,540	2,290	28	4.5	1.3	45	9.0
6	.5	4.3	9.3	52	25	760	908	28	4.5	242	26	6.3
7	1.0	2.8	9.8	59	23	330	517	27	4.5	98	16	10
8	1.2	5.3	6.9	58	22	227	258	25	4.5	62	16	7.8
9	.8	6.5	10	53	20	104	164	24	4.9	35	9.6	4.1
10	.7	6.9	10	45	19	71	134	23	3.8	24	7.8	2.7
11	.8	13	9	36	18	62	176	18	2.4	24	9.0	2.7
12	.7	7.8	9	32	17	59	312	16	2.0	45	6.3	4.5
13	.5	7.8	10	32	16	57	491	16	1.8	601	4.1	20
14	1.0	9.8	15	28	15	120	662	17	3.5	124	3.0	26
15	1.0	9	23	24	14	152	465	18	1.8	47	2.7	6.3
16	.8	9	25	22	13	148	330	17	1.3	27	4.5	5.8
17	1.0	9	27	20	13	200	351	15	1.1	20	3.5	17
18	.8	10	35	18	12	227	200	14	6.3	14	4.9	13
19	.7	10	30	16	12	294	137	12	53	10	6.3	10
20	.8	12	32	16	11	130	100	12	36	22	5.3	7.3
21	.8	15	30	16	11	188	88	11	22	13	4.5	4.9
22	8.3	20	26	17	10	188	81	11	14	9.6	3.0	3.5
23	2.8	28	22	18	10	104	91	11	11	6.3	2.7	3.2
24	1.2	20	18	20	9	57	84	13	7.8	6.3	2.7	3.2
25	.8	17	17	24	9	45	81	9.6	5.3	5.3	2.0	2.4
26	1.0	18	16	25	9	47	70	7.8	17	3.8	1.7	2.0
27	1.5	16	15	20	8	330	62	6.8	57	12	1.5	2.2
28	1.5	15	15	28	8	312	57	6.3	23	3.5	1.7	1.8
29	1.9	13	15	45		227	52	6.3	18	2.2	1.5	71
30	1.9	11	16	41		242	44	6.3	14	2.2	1.2	54
31	1.9		17	37		227		6.3		2.2	1.0	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8.3	0.5	1.25	0.0046	0.005
November	28	1.2	10.3	.038	.04
December	35	6.9	16.9	.063	.07
January	227	16	43.3	.161	.19
February	35	8	17.0	.063	.07
March	2,440	45	331	1.23	1.42
April	4,030	44	426	1.58	1.76
May	38	6.3	17.6	.065	.07
June	57	1.1	11.6	.043	.05
July	242	1.3	47.8	.178	.21
August	258	1.0	18.9	.070	.08
September	71	1.2	10.4	.039	.04
The year	4,030	.5	79.5	.296	4.00

Cuyahoga River near Hiram, Ohio

Location.- Water-stage recorder 600 feet above highway bridge on road between Hiram and Mantua Corners and 2¾ miles west of Hiram, Portage County.

Drainage area.- 152 square miles.

Records available.- August 1927 to September 1934.

Extremes.- Maximum discharge during year, 1,620 second-feet Mar. 7 (gage height, 6.87 feet); minimum, 5.7 second-feet May 31.
1927-34: Maximum discharge, 2,260 second-feet Jan. 20, 1929 (gage height, 8.2 feet); minimum, 5.1 second-feet Sept. 2, 1933.

Remarks.- Records fair. Discharge estimated Oct. 22 to Nov. 3 because of missing gage-height record and Nov. 14-17, Dec. 11-12, 27-29, Jan. 15-21, Jan. 29 to Mar. 1, Mar. 7-15, 22-25 because of ice effect.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	23	164	160	220	12	191	73	20	12	9.6	12
2	12	22	151	256	200	15	191	65	48	12	9.7	12
3	12	22	143	489	160	94	191	56	72	11	12	12
4	11	21	139	548	100	422	251	49	65	12	13	12
5	11	21	127	461	62	888	338	44	38	12	13	12
6	12	25	123	366	50	1,420	424	43	29	12	13	12
7	12	27	115	300	36	1,540	462	42	33	13	13	12
8	13	33	107	258	29	1,170	399	38	33	13	13	34
9	13	38	92	228	24	820	326	34	26	13	22	40
10	14	43	74	205	19	525	251	33	14	13	53	52
11	15	45	64	183	16	350	220	31	15	13	71	54
12	20	51	54	158	14	260	206	29	15	13	81	52
13	30	64	48	133	14	220	208	28	15	14	92	57
14	35	68	38	113	14	212	230	31	14	37	74	105
15	36	72	40	90	14	228	251	35	13	49	62	136
16	36	77	62	74	13	238	280	36	13	47	48	188
17	43	82	103	58	13	249	280	34	14	33	38	231
18	47	85	162	48	13	256	276	32	15	22	34	250
19	47	89	209	41	13	258	258	29	15	15	27	248
20	57	99	237	34	13	258	222	26	17	14	28	228
21	64	115	244	29	13	251	182	25	14	13	22	193
22	70	143	232	25	13	230	149	24	13	13	20	157
23	78	185	230	32	13	210	130	22	13	12	16	114
24	80	230	221	67	12	205	121	25	11	11	15	83
25	80	302	205	67	12	200	117	24	10	10	14	59
26	65	320	181	85	12	183	113	21	10	10	14	42
27	50	284	160	90	12	178	109	23	12	11	13	33
28	35	237	130	94	12	187	103	23	12	11	13	28
29	30	203	110	120		194	94	23	16	11	13	36
30	27	179	98	220		196	83	19	13	10	13	59
31	24		87	250		194		24		10	12	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	80	11	35.2	0.232	0.27
November	320	21	107	.704	.79
December	244	38	134	.882	1.02
January	548	25	170	1.12	1.29
February	220	12	40.6	.267	.28
March	1,540	12	376	2.47	2.85
April	462	83	222	1.46	1.63
May	73	19	33.6	.221	.25
June	72	10	21.6	.142	.16
July	49	10	16.2	.107	.12
August	92	9.6	28.8	.189	.22
September	250	12	85.4	.562	.63
The year	1,540	9.6	106	.697	9.51

Cuyahoga River near Kent, Ohio

Location.- Water-stage recorder in T. 3 N., R. 9 W., at highway bridge a quarter of a mile below Lake Rockwell Dam, 300 feet below Pennsylvania Railroad bridge, and 2 miles northeast of Kent, Portage County. Zero of gage is 1,027.56 feet above mean sea level.

Drainage area.- 205 square miles.

Records available.- October 1933 to September 1934.

Extremes.- Maximum discharge during year, 1,080 second-feet Mar. 7 (gage height, 7.30 feet); minimum discharge, 1.2 second-feet Aug. 22; minimum gage height, 1.15 feet Oct. 15.

Remarks.- Records good. Flow regulated at Lake Rockwell Dam for power and municipal water supply. Water is diverted at dam for municipal supply at Akron. Part of monthly tables corrected for storage and diversion. Record of storage and diversion furnished by City of Akron, Bureau of Water Supply.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	7.0	194	62	188	4.0	193	104	6.0	6.2	1.4	2.1
2	4.7	7.0	220	132	183	4.5	188	54	7.6	6.7	1.6	1.8
3	4.5	6.7	198	193	188	30	193	27	10	6.4	2.2	1.8
4	4.2	6.7	198	212	183	71	380	8.6	9.0	5.0	1.8	1.8
5	4.0	7.0	193	453	106	341	490	9.0	7.6	3.6	1.6	1.9
6	4.5	8.2	198	409	55	737	466	8.6	6.4	4.0	1.5	1.9
7	4.5	8.6	143	351	56	960	503	7.0	7.0	3.9	1.9	1.6
8	4.0	9.0	46	294	56	1,040	466	7.0	6.6	4.0	1.6	2.2
9	4.2	9.0	45	261	56	906	379	7.0	6.0	3.9	1.8	1.9
10	4.8	9.0	45	232	56	762	301	8.6	4.8	3.9	1.8	1.7
11	4.8	9.4	47	210	50	489	267	9.0	5.2	4.2	1.7	2.0
12	4.0	9.4	50	188	46	360	249	8.6	5.4	3.9	1.5	2.0
13	4.2	10	49	183	50	287	237	7.8	5.6	3.6	1.5	2.0
14	4.2	11	49	188	46	267	243	8.2	5.9	3.7	1.6	2.0
15	3.6	9.4	134	183	47	220	255	8.6	7.0	3.2	1.6	2.2
16	4.0	9.8	198	188	27	220	267	9.0	6.4	2.6	1.9	3.4
17	4.8	9.8	122	188	4.2	232	273	8.6	5.9	2.3	1.8	2.4
18	4.5	11	53	193	4.0	243	267	8.2	11	2.6	1.6	2.9
19	4.5	12	146	193	4.0	237	261	8.0	13	2.8	1.6	2.6
20	4.5	12	198	147	4.2	237	237	7.6	12	2.8	1.6	2.9
21	4.5	13	204	52	4.2	237	210	7.2	12	2.5	1.7	3.4
22	5.3	13	198	53	4.2	237	188	7.0	11	2.5	1.6	3.2
23	5.3	12	198	60	4.2	226	178	7.0	6.7	2.2	2.1	2.9
24	5.9	12	198	56	4.2	210	178	7.0	5.6	2.8	2.4	3.2
25	6.2	49	198	56	4.0	210	143	6.8	8.2	3.1	2.1	3.9
26	6.4	228	198	56	4.0	204	59	6.6	9.8	3.1	1.9	5.0
27	6.4	280	198	57	4.0	198	56	6.4	7.8	3.1	1.8	82
28	5.9	249	198	56	4.2	188	54	6.2	6.4	2.0	2.0	63
29	7.9	210	198	121		188	52	6.0	8.2	1.5	2.0	134
30	7.7	193	110	215		188	111	5.8	7.0	1.5	1.9	210
31	9.5		59	198		193		6.2		1.7	2.0	

Month	Observed			Corrected for storage and diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches
October	9.5	3.6	5.11	36.3	0.177	0.20
November	280	6.7	48.0	123	.600	.67
December	220	45	145	156	.761	.88
January	453	52	175	205	1.00	1.15
February	188	4.0	51.5	74.4	.363	.38
March	1,040	4.0	320	384	1.87	2.16
April	503	52	245	296	1.35	1.51
May	104	5.8	12.8	46.5	.227	.26
June	13	4.8	7.70	36.7	.179	.20
July	6.7	1.5	3.40	27.1	.132	.15
August	2.4	1.4	1.78	49.8	.243	.28
September	210	1.6	18.5	108	.527	.59
The year	1,040	1.4	86.5	127	.620	8.43

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Cuyahoga River at Old Portage, Ohio

Location.- Water-stage recorder at highway bridge at Old Portage, Summit County, 4 miles northwest of Akron and 1½ miles below mouth of Little Cuyahoga River.

Drainage area.- 405 square miles.

Records available.- September 1921 to September 1934.

Average discharge.- 13 years, 444 second-feet.

Extremes.- Maximum discharge during year, 2,030 second-feet Apr. 4 (gage height, 6.39 feet); minimum, 29 second-feet Sept. 24 (gage height, 0.43 foot).
1921-34: Maximum discharge, 3,820 second-feet Apr. 5, 1929 (gage height, 10.1 feet); minimum, 26 second-feet Aug. 8, 1932.

Remarks.- Records good. Diurnal fluctuation caused by operation of power plants above gage. Water diverted around gage for municipal supply of city of Akron.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	39	218	195	269	66	322	237	44	39	72	56
2	37	70	260	200	274	68	335	149	43	138	188	33
3	58	60	260	264	240	257	334	139	36	98	143	48
4	39	45	312	293	226	665	1,460	78	38	38	45	33
5	38	38	259	516	222	770	1,430	130	98	131	37	51
6	75	42	248	610	112	1,180	1,150	47	87	94	66	56
7	39	43	252	528	107	1,490	1,120	65	46	83	68	100
8	37	76	162	475	103	1,700	1,010	76	43	41	69	70
9	37	82	95	427	164	1,460	809	66	80	64	62	41
10	62	43	81	344	102	1,150	619	109	69	111	44	64
11	72	41	102	305	88	780	603	50	106	137	68	66
12	39	41	98	279	115	600	545	45	67	60	35	85
13	38	118	118	238	99	455	495	36	66	48	72	46
14	65	52	77	223	105	456	495	130	66	37	92	53
15	37	41	123	244	94	405	510	63	46	58	108	137
16	36	40	220	273	93	360	537	73	45	46	72	250
17	50	40	257	244	54	364	500	63	39	49	66	96
18	70	64	152	253	41	385	465	92	250	65	68	65
19	65	40	126	246	59	386	429	47	211	61	41	64
20	40	83	244	238	56	330	396	38	168	50	53	80
21	40	86	260	160	67	385	370	79	114	44	49	41
22	58	119	242	102	38	390	324	70	163	33	57	37
23	88	85	254	112	40	377	294	70	91	49	58	31
24	81	77	256	117	39	302	298	85	41	63	95	31
25	79	82	274	130	40	305	300	45	59	65	65	62
26	38	42	295	95	131	318	193	43	125	46	36	52
27	38	335	217	98	100	366	139	37	92	76	61	113
28	77	344	236	124	70	348	101	81	75	40	74	50
29	35	265	226	143		334	141	64	63	34	55	224
30	35	220	195	217		354	156	42	90	52	52	280
31	36		145	242		331		39		84	56	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	88	35	50.8		
November	344	38	91.8		
December	312	77	202		
January	610	95	256		
February	274	38	112		
March	1,700	66	553		
April	1,460	101	529		
May	237	36	77.0		
June	250	36	85.4		
July	138	33	65.6		
August	188	35	68.6		
September	280	31	80.5		
The year	1,700	31	181		

Cuyahoga River at Independence, Ohio

Location.- Water-stage recorder in T. 6 N., R. 12 W., at highway bridge 1 mile northeast of Independence, Cuyahoga County. Zero of gages 1903-6, 1927, and thereafter, 584.14 feet above mean sea level; 1921-23, 586.56 feet above mean sea level.

Drainage area.- 709 square miles.

Records available.- September 1903 to July 1906, September 1921 to May 1923, September 1927 to September 1934.

Extremes.- Maximum combined discharge of river and canal during year, 6,760 second-feet Apr. 14 (gage height of river, 14.86 feet); minimum combined daily discharge, 75 second-feet Sept. 3, 5.
1921-23, 1927-34: Maximum combined discharge, 9,780 second-feet Jan. 19, 1929 (gage height of river, 18.9 feet); minimum combined discharge, 48 second-feet Aug. 29, 1933.

Remarks.- Records good except those below 50 second-feet, those estimated because of ice Dec. 28 to Jan. 3, Jan. 30 to Mar. 8, and other estimated periods Oct. 1-12, Mar. 9-14, Sept. 27-30, which are fair. Water is diverted into Ohio Canal at Brecksville, 6 miles upstream, and carried past station. (For a record of this diversion see Ohio Canal at Independence, Ohio). A small amount of water from Tuscarawas River is diverted into this basin at Portage Lakes.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	45	224	220	450	100	638	252	58	115	84	82
2	50	47	216	290	570	105	590	266	50	50	72	118
3	50	79	266	305	570	450	582	200	54	146	354	54
4	70	70	287	346	420	900	5,750	198	39	106	128	60
5	52	56	290	484	370	1,200	3,780	176	44	42	50	55
6	50	59	288	698	240	1,500	2,620	147	105	184	28	65
7	90	58	275	644	180	1,800	2,020	96	98	158	58	70
8	54	62	250	600	170	1,900	1,560	104	57	128	64	170
9	50	96	144	535	160	1,900	1,200	119	54	56	70	114
10	50	108	118	474	228	1,600	917	117	110	92	66	57
11	80	68	114	384	170	1,300	1,050	143	76	173	46	80
12	85	82	132	336	140	1,000	1,050	86	114	168	72	87
13	55	82	160	324	180	720	1,020	75	77	116	36	130
14	52	150	171	339	160	550	1,090	78	74	98	60	76
15	75	86	129	317	165	382	1,050	186	72	66	92	46
16	42	61	328	322	150	588	1,000	113	60	68	136	464
17	58	58	352	284	150	576	946	118	55	68	104	161
18	56	61	326	289	88	690	784	106	56	68	74	150
19	82	100	212	284	66	561	669	129	379	81	64	122
20	84	72	215	313	96	566	582	75	250	114	34	113
21	60	128	391	195	91	634	536	54	184	73	48	116
22	98	222	347	170	109	700	467	116	152	51	50	80
23	98	176	296	204	62	520	474	102	218	30	56	81
24	100	121	269	186	64	424	454	100	118	47	86	57
25	90	102	298	194	63	386	430	122	56	53	89	64
26	92	101	278	184	64	414	368	72	112	61	60	95
27	56	166	286	156	140	784	284	63	234	86	32	82
28	48	298	280	212	116	632	256	49	149	77	66	145
29	82	326	270	228		576	232	105	120	38	78	70
30	37	269	260	310		571	210	90	96	24	60	250
31	44		240	350		600		52		48	66	

Month	River			Canal (mean)	Combined		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	100	37	65.8	52.6	157	92	118
November	326	45	114	56.5	376	105	170
December	391	114	249	46.9	437	160	296
January	698	156	328	46.6	741	202	375
February	570	62	194	38.5	624	94	232
March	1,900	100	794	54.0	1,966	132	848
April	5,750	210	1,087	54.6	5,804	267	1,142
May	266	49	120	54.9	323	98	175
June	379	39	111	53.8	433	84	165
July	184	24	86.6	68.5	248	95	155
August	354	28	76.9	58.0	408	82	135
September	464	46	110	28.6	495	75	139
The year	5,750	24	278	51.3	5,804	75	329

Congress Lake outlet near Kent, Ohio

Location.- Water-stage recorder at bridge on Kent-Ravenna highway 2 miles east of Kent, Portage County, and 1 mile below mouth of Muddy Lake outlet.

Drainage area.- 76.9 square miles.

Records available.- July 1927 to September 1934.

Extremes.- Maximum discharge during year, 411 second-feet Apr. 7 (gage height, 6.01 feet); minimum, 3.6 second-feet June 18.
1927-34: Maximum discharge, 1,060 second-feet Feb. 28, 1929 (gage height, 9.5 feet); minimum, 3.1 second-feet July 12, 1930.

Remarks.- Records fair. Discharge estimated because of ice effect Jan. 7-20, Jan. 28 to Mar. 2.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	8.2	12	36	16	8	58	24	9.2	16	6.0	9.5
2	5.6	9.0	12	34	16	12	57	18	9.0	20	7.0	9.0
3	6.2	8.8	13	32	15	89	55	16	8.5	19	14	8.0
4	7.2	8.5	17	29	14	211	213	16	7.2	13	11	7.2
5	8.0	9.0	16	28	14	206	326	15	7.8	10	7.2	7.2
6	8.5	9.8	16	27	13	238	372	14	14	10	5.8	7.2
7	8.8	9.8	16	26	13	284	372	13	22	11	6.2	7.2
8	7.2	10	17	25	13	244	277	11	18	11	6.8	13
9	6.5	10	16	24	12	284	188	10	18	9.5	10	11
10	7.8	10	14	24	12	300	124	11	12	9.2	9.8	9.8
11	8.5	9.8	14	23	11	240	100	12	9.8	11	11	9.2
12	8.2	11	15	22	11	150	94	12	8.5	11	9.5	8.8
13	8.2	11	14	22	11	90	100	10	8.2	10	9.0	8.2
14	8.0	11	14	21	10	63	109	12	7.8	9.5	9.2	8.0
15	6.8	12	17	20	10	59	108	13	7.2	8.0	9.8	8.5
16	6.5	11	20	19	10	63	104	13	6.5	7.2	13	16
17	9.0	12	19	18	10	57	94	13	5.2	7.8	13	15
18	8.2	12	20	17	9	54	73	13	11	8.0	12	14
19	8.5	13	19	16	9	52	59	12	36	8.2	9.2	12
20	8.2	13	20	16	9	48	49	10	40	9.8	8.0	11
21	7.5	15	23	15	9	48	44	9.8	40	9.5	8.2	10
22	8.5	17	21	15	9	50	41	9.8	30	9.0	8.2	8.8
23	8.0	16	19	18	9	45	41	10	19	8.2	8.8	9.0
24	8.0	15	18	19	8	38	40	12	16	8.2	11	8.2
25	8.8	13	18	20	8	30	39	11	28	8.8	11	8.2
26	8.8	13	16	20	8	30	36	11	27	8.5	9.8	8.0
27	8.8	12	19	19	8	48	35	10	21	11	8.5	9.0
28	8.8	12	17	19	8	59	32	10	19	9.5	11	8.8
29	7.2	13	16	18		77	30	10	23	6.2	11	18
30	7.0	13	17	18		78	29	10	19	4.6	10	20
31	7.8		20	17		63		9.2		7.0	10	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9.0	5.6	7.78	0.101	0.12
November	17	8.2	11.6	.151	.17
December	23	12	16.9	.220	.25
January	36	15	21.8	.283	.33
February	16	8	10.9	.142	.15
March	300	8	107	1.39	1.60
April	372	29	110	1.43	1.60
May	24	9.2	12.3	.160	.18
June	40	5.2	16.9	.220	.25
July	20	4.6	10.0	.130	.15
August	14	5.8	9.52	.124	.14
September	20	7.2	10.3	.134	.15
The year	372	4.6	28.8	.375	5.09

Little Cuyahoga River at Akron, Ohio

Location.- Water-stage recorder at foot of Seiberling Street, Akron, Summit County, half a mile below mouth of Springfield Lake outlet. Zero of gage is 997.41 feet above mean sea level.

Drainage area.- 42.0 square miles.

Records available.- July 1920 to September 1934.

Average discharge.- 14 years, 35.6 second-feet.

Extremes.- Maximum discharge during year, 232 second-feet Apr. 4 (gage height, 1.58 feet); minimum, 1.8 second-feet Aug. 12 (gage height, 0.06 foot).
1920-34: Maximum discharge not known; no flow June 24, July 14, 1923, on account of regulation above station.

Remarks.- Records good. Gage-height record furnished by Goodyear Tire & Rubber Co.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	9.6	10.6	25.0	7.8	3.8	19.7	15.9	9.3	9.3	7.8	6.0
2	10.8	9.8	6.1	23	7.9	9.6	21	16.3	6.9	8.7	16.7	5.7
3	12.3	9.2	11.2	13.7	7.4	72	25	19.0	4.8	7.5	17.7	5.7
4	11.8	9.2	17.6	9.3	7.0	150	172	16.6	8.0	7.0	6.8	6.9
5	11.9	9.5	13.4	11.2	6.7	109	160	11.0	10.5	11.8	5.9	7.0
6	11.1	13.0	10.9	13.0	6.4	69	95	5.4	10.8	11.0	7.5	7.2
7	10.6	12.2	10.4	14.6	6.2	46	67	8.3	10.0	12.5	7.6	7.6
8	7.9	10.6	10.2	15.4	5.2	31	43	9.6	9.4	10.3	7.4	10.2
9	10.5	13.9	7.8	13.6	4.4	18.5	27	10.1	10.0	12.1	7.5	6.1
10	11.1	13.9	6.4	11.5	3.9	14.7	22	11.1	5.6	11.9	7.6	7.2
11	11.0	12.2	9.2	9.5	4.5	13.0	36	10.7	10.2	10.6	9.2	6.8
12	10.1	13.0	9.3	7.9	4.4	12.5	37	8.2	9.0	11.1	5.2	6.8
13	9.0	13.0	10.0	8.2	4.2	11.3	33	5.5	8.6	9.4	7.4	6.4
14	9.5	14.2	11.0	8.9	4.4	24	37	12.2	8.9	7.7	7.9	6.4
15	6.9	11.4	15.6	9.5	4.6	20	39	11.6	8.6	6.5	15.3	25
16	11.4	8.5	14.4	8.9	4.6	19.7	32	11.4	8.4	9.2	12.7	47
17	11.6	9.5	13.8	7.5	4.1	19.5	21	10.7	6.8	9.2	10.8	26
18	10.4	12.8	12.9	6.6	5.3	23	19.6	10.8	48	9.0	7.3	13.9
19	10.0	13.1	10.1	6.2	4.6	19.2	17.9	9.2	158	8.6	4.7	8.7
20	10.2	12.9	9.8	6.9	4.4	18.0	16.0	5.9	70	10.4	12.2	8.4
21	10.5	12.2	14.8	7.0	4.9	21	26	12.0	30	7.0	11.1	8.5
22	10.9	14.2	13.8	6.6	5.0	20	24	11.1	22	4.6	7.9	7.5
23	11.6	12.3	9.4	9.3	4.2	13.9	15.5	10.9	23	7.6	7.7	6.8
24	11.2	9.4	9.4	9.7	4.0	12.1	13.5	11.6	13.3	8.5	10.1	8.0
25	10.8	8.3	9.8	8.7	4.4	10.8	28	11.4	11.1	8.8	7.9	7.6
26	10.8	11.6	12.0	9.0	4.0	14.4	17.2	8.9	16.8	7.9	6.9	7.0
27	10.4	11.9	8.8	8.2	3.9	33	16.4	5.5	17.8	11.2	7.9	7.0
28	9.4	10.1	10.3	11.6	3.8	28	16.7	8.9	14.8	7.6	7.6	6.6
29	8.0	10.8	10.8	6.9		25	10.2	9.5	11.3	4.4	7.2	37
30	9.6	13.1	6.0	6.3		22	12.9	8.8	8.9	8.2	6.9	30
31	9.8		9.6	6.8		22		9.4		8.1	6.6	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12.3	6.9	10.3		
November	14.2	8.3	11.5		
December	17.6	6.1	10.9		
January	25	6.2	10.5		
February	7.9	3.8	5.08		
March	150	3.8	29.9		
April	172	10.2	37.4		
May	19.0	5.4	10.6		
June	158	4.8	19.7		
July	12.5	4.4	8.96		
August	17.7	4.7	8.81		
September	47	5.7	11.7		
The year	172	3.8	14.6		

Ohio Canal at Independence, Ohio

Location.- Water-stage recorder at highway bridge opposite gaging station on Cuyahoga River 1 mile northeast of Independence, Cuyahoga County.

Records available.- September 1921 to May 1923; August 1927 to September 1934.

Extremes.- Maximum discharge during year, 83 second-feet about July 25 (gage height, 4.84 feet); minimum, 16 second-feet about Sept. 4 (gage height, 3.14 feet).
1927-34: Maximum discharge, 99 second-feet Apr. 5, 1929 (gage height, 5.09 feet); minimum not determined.

Remarks.- Records fair except those estimated because of ice, Jan. 31 to Mar. 5, and other estimated periods, Mar. 6-22, June 15 to July 25, Aug. 4 to Sept. 4, Sept. 19-30, which are poor. Water is diverted into the canal from Cuyahoga River by feeder at dam at Brecksville, 6 miles above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	60	50	50	54	32	54	57	46	64	50	30
2	46	60	50	46	54	32	54	57	50	64	50	25
3	46	60	46	43	54	32	54	57	46	64	54	21
4	50	57	50	43	40	40	54	57	45	64	54	20
5	50	57	46	42	40	50	50	57	46	64	57	20
6	46	57	50	43	40	50	57	57	46	64	60	24
7	46	57	50	43	40	50	54	57	45	64	64	34
8	46	57	46	45	40	50	50	57	45	64	64	29
9	46	57	46	46	40	66	50	57	45	64	64	31
10	46	57	45	46	40	66	50	57	46	64	64	31
11	50	57	46	46	40	66	54	57	46	64	64	29
12	50	57	46	46	40	66	54	57	46	64	64	29
13	50	57	46	46	40	66	54	57	50	66	64	31
14	50	57	46	46	40	66	50	57	50	66	64	29
15	50	57	46	46	40	62	50	57	54	68	66	31
16	50	57	46	46	40	60	54	57	54	68	68	31
17	50	57	50	46	40	56	54	57	54	70	68	29
18	57	57	50	46	35	54	57	54	54	72	70	29
19	57	57	46	46	32	54	57	54	54	74	70	30
20	57	54	46	46	32	54	57	54	58	74	70	30
21	54	54	46	46	32	54	57	54	60	74	68	28
22	54	57	46	46	32	54	57	54	62	74	68	28
23	54	57	45	46	32	54	57	54	64	74	60	27
24	57	54	45	46	32	54	57	54	64	74	52	27
25	64	54	46	46	32	60	57	54	64	75	52	28
26	60	57	46	46	32	54	57	54	64	75	52	30
27	60	57	46	46	32	57	57	54	64	75	50	30
28	60	54	45	54	32	54	57	50	64	75	40	32
29	60	50	46	54		54	57	50	64	75	37	32
30	60	54	46	54		54	57	46	64	71	36	32
31	60		50	54				46		57	35	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	64	46	52.6		
November	60	50	56.5		
December	50	45	46.9		
January	54	42	46.6		
February	54	32	38.5		
March	66	32	54.0		
April	57	50	54.6		
May	57	46	54.9		
June	64	45	53.8		
July	75	57	68.5		
August	70	35	58.0		
September	34	20	28.6		
The year	75	20	51.3		

Chagrin River at Willoughby, Ohio

Location.- Staff gage at dam 0.9 mile southeast of Willoughby, Lake County, about 5 miles above mouth, and one-sixth mile below mouth of East Branch.

Drainage area.- 251 square miles.

Records available.- July 1925 to September 1934.

Extremes.- Maximum discharge during year, 3,430 second-feet Jan. 1 (gage height, 3.26 feet); minimum, 3.0 second-feet July 25, 26 (gage height, 0.16 foot).
1925-34: Maximum discharge, 20,500 second-feet June 26, 1931 (gage height. 9.90 feet): minimum, that of July 25, 26, 1934.

Remarks.- Records good except those estimated because of ice effect, Nov. 17-20, Dec. 10-15, 27-30, Jan. 16-20, 31, Feb. 1-28, and those estimated when gates were out of dam, Oct. 1 to Nov. 1, which are fair. Water is diverted above dam for municipal water supply of city of Willoughby. Monthly summaries of flow corrected for diversion.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	30	179	2,400	110	115	380	100	24	9.7	5.0	14
2	20	37	123	950	100	299	338	92	22	9.7	5.0	27
3	21	41	119	332	88	1,140	268	85	22	7.0	127	22
4	22	35	206	249	77	2,900	2,400	85	22	9.7	58	32
5	26	41	170	239	70	2,560	1,080	78	17	8.2	44	28
6	39	50	140	299	64	1,630	530	72	14	7.0	19	24
7	26	54	115	254	60	575	415	72	14	24	14	22
8	25	70	108	299	55	380	304	65	11	36	9.7	72
9	24	52	92	258	51	273	239	58	9.7	33	338	65
10	24	41	74	234	49	157	202	52	9.7	19	58	58
11	24	55	60	183	46	119	230	47	14	22	68	38
12	24	75	54	140	44	161	450	47	9.7	39	36	30
13	24	140	52	157	41	174	415	41	14	39	36	30
14	24	140	50	220	39	304	530	65	11	86	41	92
15	25	50	49	183	37	239	530	72	7.0	72	36	78
16	25	44	670	120	36	268	490	65	7.0	41	44	123
17	26	41	380	98	34	326	490	52	9.7	24	47	127
18	27	48	350	90	33	490	294	44	27	14	38	85
19	40	56	230	85	32	220	239	41	140	14	27	72
20	30	80	183	93	31	254	192	41	55	11	22	50
21	35	165	450	115	30	268	165	38	33	14	19	36
22	70	775	289	131	29	490	157	28	22	14	19	30
23	150	380	202	254	28	258	202	36	24	7.0	17	47
24	70	225	165	192	27	220	202	36	19	5.0	17	41
25	36	174	157	161	26	183	188	36	17	3.0	24	36
26	33	157	119	165	25	144	161	41	14	3.0	24	24
27	30	183	100	140	26	620	152	36	19	9.7	17	24
28	29	157	62	202	60	344	148	36	36	19	24	24
29	28	188	70	258		299	123	30	30	14	24	52
30	28	244	100	148		289	108	30	19	9.7	24	100
31	29		499	130		320		24		7.0	19	

Month	Observed			Diversion (mean)	Corrected for diversion		
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	150	20	34.0	1.04	35.0	0.139	0.16
November	775	30	128	.92	129	.514	.57
December	670	49	182	.97	183	.729	.84
January	2,400	85	283	1.01	284	1.13	1.30
February	110	25	48.1	1.20	49.3	.196	.20
March	2,900	115	517	1.38	518	2.06	2.37
April	2,400	108	387	1.20	388	1.55	1.73
May	100	24	53.4	1.40	54.8	.218	.25
June	140	7.0	23.1	1.93	25.0	.100	.11
July	86	3.0	20.3	1.72	22.0	.088	.10
August	338	5.0	42.0	1.40	43.4	.173	.20
September	127	14	50.1	1.31	51.4	.205	.23
The year	2,900	3.0	148	1.29	149	.594	8.06

Grand River near Madison, Ohio

Location.- Chain gage at highway bridge 2 miles south of Madison, Lake County, and half a mile above Griswold Creek. Zero of gage is 674.47 feet above mean sea level.

Drainage area.- 587 square miles.

Records available.- July 1922 to September 1934.

Average discharge.- 12 years, 642 second-feet.

Extremes.- Maximum discharge recorded during year, 8,980 second-feet Mar. 5 (gage height, 8.36 feet); no flow July 31, Aug. 1, 2.
1922-34: Maximum discharge recorded about 16,400 second-feet Jan. 19, 1929 (gage height, 12.0 feet); no flow July 31, Aug. 1-2, 1934.

Remarks.- Records good except those estimated because of ice effect, Nov. 16-19, Dec. 12-15, 27-31, Jan. 16-21, Jan. 31 to Mar. 3, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	6.7	498	4.450	250	28	990	96	14	0.7	0	13
2	5.5	S.O	259	5,240	210	32	1,050	88	14	1.0	0	14
3	4.7	S.4	177	1,420	180	200	930	90	11	1.9	.1	15
4	4.9	S.O	715	820	160	3,060	5,040	45	9.8	3.3	.7	13
5	5.8	10	1,100	520	130	5,660	2,790	60	11	5.8	.4	12
6	7.1	12	565	542	110	5,040	1,420	41	9.8	S.6	.2	9.8
7	6.1	14	313	765	100	3,060	1,230	55	9.8	S.6	1.3	11
8	5.S	21	204	930	90	2,200	990	54	9.8	6.9	1.2	58
9	7.4	26	159	S75	80	1,640	640	69	5.8	3.7	990	29
10	6.1	34	124	S20	70	990	410	47	1.8	3.0	1,720	59
11	5.2	34	103	498	62	452	452	37	.9	2.0	715	126
12	4.4	46	90	332	56	313	1,420	34	1.2	3.7	520	226
13	5.2	101	S0	226	52	242	1,230	22	.8	3.1	370	1,110
14	3.9	149	74	242	50	313	1,230	39	.8	5.2	242	930
15	4.2	73	71	332	48	452	1,110	36	1.2	3.7	147	370
16	3.4	72	520	240	45	715	820	36	1.3	2.S	112	820
17	4.9	77	1,290	190	43	765	820	36	.9	2.S	116	520
18	7.1	S8	1,230	180	41	990	542	34	3.1	66	109	390
19	10	110	820	160	40	715	370	35	17	42	86	332
20	9.7	236	452	150	39	542	259	34	9.8	25	66	259
21	9.4	366	2,310	180	38	715	193	16	11	14	51	152
22	14	2,660	1,560	210	37	1,490	161	15	7.3	9.5	32	116
23	14	1,810	715	475	36	990	164	16	7.8	7.3	27	93
24	14	S75	410	990	34	520	193	41	8.8	7.3	29	31
25	13	390	313	475	32	276	190	15	9.8	4.4	20	46
26	11	259	242	370	31	193	172	16	6.8	3.3	20	32
27	9.4	259	210	294	30	640	156	17	6.3	1.9	23	14
28	11	294	180	498	29	990	132	17	3.6	1.1	26	24
29	9.0	430	150	1,050		990	120	17	1.6	.2	35	25
30	8.4	765	190	520		990	105	17	1.2	.1	24	38
31	7.7		700	300		930		17		0	11	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14	3.4	7.73	0.013	0.01
November	2,660	6.7	308	.525	.59
December	2,310	71	511	.871	1.00
January	5,240	150	784	1.34	1.54
February	250	29	75.8	.129	.13
March	5,660	28	1,166	1.99	2.29
April	5,040	105	844	1.44	1.61
May	96	15	38.5	.066	.08
June	17	.8	6.60	.011	.01
July	66	0	8.03	.014	.02
August	1,720	0	177	.302	.35
September	1,110	9.8	196	.334	.37
The year	5,660	0	346	.589	8.00

Conneaut Creek at Amboy, Ohio

Location.- Water-stage recorder at highway bridge half a mile east of Amboy, Ashtabula County, 3 miles southwest of Conneaut, and about 6 miles above mouth.

Drainage area.- 178 square miles.

Records available.- July 1922 to September 1934.

Average discharge.- 12 years, 224 second-feet.

Extremes.- Maximum discharge during year (estimated because of ice jam), 3,900 second-feet Mar. 4 (gage height, 12.94 feet); minimum, 0.2 second-foot Aug. 1, 2 (gage height, 1.10 feet).
1922-34: Maximum discharge, 6,160 second-feet Dec. 1, 1927, Jan. 19, 1929 (gage height, 8.2 feet); minimum, 0.2 second-foot July 31, Aug. 1, 1933, Aug. 1, 2, 1934.

Remarks.- Records good except those for discharges above 2,000 second-feet and those estimated because of ice effect, Nov. 14-23, 27-29, Dec. 9-15, 25-26, 28-31, Jan. 1-2, 16-24, Jan. 29 to Mar. 15, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	6.7	395	1,100	120	15	291	46	7.8	1.2	0.3	12
2	4.5	16	176	2,000	100	22	339	39	8.5	.9	1.6	12
3	10	12	120	580	90	150	345	39	13	1.2	8.0	7.4
4	5.8	7.2	413	255	80	500	1,100	35	8.4	1.2	4.1	5.9
5	7.2	8.9	731	163	70	2,600	1,440	28	7.6	5.0	1.6	12
6	7.7	5.8	337	203	62	2,200	420	28	5.9	7.4	2.3	8.6
7	4.9	12	183	312	56	1,700	302	25	6.4	4.1	2.0	3.6
8	3.2	7.2	128	400	51	980	241	22	2.8	5.9	2.4	18
9	3.2	32	94	375	46	550	179	21	2.2	5.9	388	19
10	4.1	22	76	263	42	300	138	20	5.3	2.8	555	7.4
11	8.2	23	65	207	38	160	283	20	4.6	5.5	175	14
12	3.8	34	57	145	34	150	977	18	5.0	5.4	64	11
13	3.8	42	52	108	31	130	466	24	4.6	4.6	34	8.4
14	4.1	35	48	131	28	170	376	15	3.2	4.6	45	12
15	3.8	32	45	173	26	1,000	404	22	1.6	3.2	23	13
16	4.1	30	325	110	24	558	292	21	2.8	2.0	22	33
17	5.8	29	650	90	23	203	245	18	4.1	1.6	17	18
18	5.8	28	439	83	21	286	196	18	5.4	1.6	14	16
19	5.3	28	381	77	20	310	138	19	9.6	1.4	13	16
20	19	28	244	73	19	179	104	20	4.6	5.1	5.4	12
21	6.7	120	1,170	72	18	222	84	7.9	5.4	4.6	8.1	12
22	5.8	1,200	1,070	75	17	597	74	19	5.0	1.8	9.0	9.2
23	5.3	1,580	351	200	16	396	76	9.6	4.1	1.2	5.7	4.1
24	4.9	436	210	500	16	176	96	12	5.9	1.2	7.8	3.6
25	8.2	199	130	222	16	120	107	17	2.8	.9	3.2	3.6
26	13	142	90	192	15	99	94	16	3.6	.8	2.0	13
27	16	120	67	174	15	247	81	12	7.9	1.6	2.8	9.6
28	4.5	140	64	240	15	557	72	5.0	9.0	1.6	17	5.0
29	9.2	200	62	560		333	63	13	4.1	1.2	25	5.4
30	4.5	539	60	200		250	55	12	2.5	.6	13	12
31	4.5		90	130		272		4.1		.5	9.1	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	19	3.2	6.67	0.037	0.04
November	1,580	5.8	170	.955	1.07
December	1,170	45	268	1.51	1.74
January	2,000	72	304	1.71	1.97
February	120	15	39.6	.222	.23
March	2,600	15	498	2.80	3.23
April	1,440	55	303	1.70	1.90
May	46	4.1	20.2	.113	.13
June	13	1.6	5.46	.031	.03
July	7.4	.5	2.79	.016	.02
August	555	.3	47.8	.269	.31
September	33	3.6	11.2	.063	.07
The year	2,600	.3	141	.792	10.74

Little Tonawanda Creek at Linden, N. Y.

Location.- Staff gage above concrete weir at highway bridge in Linden, Genesee County.

Drainage area.- 22 square miles.

Records available.- July 1912 to September 1934.

Average discharge.- 21 years (1912-19, 1920-34), 27.1 second-feet.

Extremes.- Maximum discharge during year, 655 second-feet Jan. 1 (gage height, 6.4 feet); minimum, about 0.1 second-foot Sept. 5-7.
1912-34: Maximum discharge, about 2,400 second-feet Apr. 22, 1916 (gage height, 14.8 feet); minimum, that of Sept. 5-7, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 15-17, Dec. 11-15, 28-30, Jan. 18-20, and Mar. 9, and those for extremely low stages, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.8	25	461	23	5.4	61	17	2.7	0.9	0.4	0.2
2	.6	.8	11	92	19	5.6	59	15	2.7	.8	.3	.3
3	.6	.8	11	41	16	116	50	14	2.4	.8	.6	.2
4	.5	.8	16	29	15	313	112	13	2.2	.8	.4	.2
5	.5	.7	14	34	14	238	54	11	2.4	.8	.4	.1
6	.5	.8	13	52	13	139	56	11	2.7	1.1	.4	.1
7	.5	.9	12	52	12	69	53	9.7	2.1	.9	.3	.1
8	.5	.9	9.7	71	11	44	41	8.6	2.0	.9	.3	.5
9	.9	.9	7.8	46	9.7	28	32	8.1	2.0	.8	.2	.9
10	.6	1.0	5.6	36	9.1	23	30	9.4	3.0	.8	.2	.5
11	.7	.9	4.2	26	9.4	21	148	7.6	2.3	1.1	.2	.4
12	.6	1.0	3.6	24	9.7	19	145	7.1	2.2	1.1	.2	.4
13	.5	1.6	3.2	24	8.8	44	78	6.9	2.2	.8	.2	1.0
14	.6	3.0	3.0	23	8.6	107	62	12	2.2	.8	.2	.6
15	.5	2.0	8	19	8.6	48	50	8.6	2.0	.6	.2	.5
16	.5	1.5	94	17	7.6	55	56	7.3	1.7	.6	.4	.5
17	.6	1.6	42	13	7.3	64	59	6.6	1.7	.6	.4	.8
18	.6	1.7	42	11	7.3	156	38	6.2	1.5	.6	.3	.6
19	.6	2.0	22	12	8.1	57	32	5.8	2.4	.5	.2	.6
20	.6	2.1	19	12	7.6	40	27	5.6	1.8	.5	.8	.5
21	.6	2.5	28	12	7.1	42	27	5.0	1.5	.4	.4	.4
22	.8	15	19	12	7.1	34	24	4.6	1.5	.4	.4	1.2
23	.7	10	18	39	6.9	20	24	4.6	1.5	.4	.4	3.6
24	.9	5.5	93	25	6.2	17	38	4.2	1.3	.3	.3	1.6
25	1.3	4.6	116	41	5.8	14	31	4.2	1.1	.3	.3	1.2
26	.9	8.6	39	31	5.8	15	29	3.9	1.3	.3	.3	.9
27	.8	11	21	24	5.4	42	37	3.6	1.5	.3	.2	.9
28	.8	7.3	15	124	5.4	28	26	3.6	1.4	.3	.4	.9
29	.8	7.9	13	43		27	24	3.2	1.1	.3	.4	.8
30	.8	61	12	34		26	19	3.1	1.0	.2	.3	1.1
31	.8		52	27		26		2.8		.2	.3	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	1.3	0.5	0.67	0.030	0.03	
November	61	.7	5.31	.241	.27	
December	116	3.0	25.6	1.16	1.34	
January	461	11	48.6	2.21	2.55	
February	23	5.4	9.80	.445	.46	
March	313	5.4	60.7	2.76	3.18	
April	148	19	50.7	2.30	2.57	
May	17	2.8	7.53	.342	.39	
June	3.0	1.0	1.91	.087	.10	
July	1.1	.2	.62	.028	.03	
August	.8	.2	.33	.015	.02	
September	3.6	.1	.72	.033	.04	
The year	461	.1	17.8	.809	10.98	

Genesee River at Scio, N. Y.

Location.- Staff gage at highway bridge three-quarters of a mile above Scio, Allegany County.

Drainage area.- 309 square miles (revised).

Records available.- June 1916 to September 1934.

Average discharge.- 18 years, 369 second-feet.

Extremes.- Maximum discharge during year, 4,710 second-feet Mar. 27 (gage height, 5.8 feet, from graph based on gage readings); minimum, estimated, 18 second-feet Sept. 7 (gage height, estimated, -0.02 foot).
1916-34: Maximum discharge, about 10,600 second-feet May 22, 1919 (gage height, 9.1 feet); minimum, estimated, 13 second-feet Sept. 12, 13, 22-26, 1932.

Remarks.- Records good except those for periods of ice effect, Nov. 16, 17, Dec. 10-16, 27-31, Jan. 17-20, Jan. 29 to Feb. 18, Feb. 24 to Mar. 2, Mar. 9-12, and those estimated, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	78	442	2,610	140	50	910	194	46	24	28	22
2	64	75	316	1,620	120	95	752	178	43	24	25	21
3	58	73	354	1,050	110	1,560	660	170	43	23	43	20
4	52	76	534	721	100	4,120	1,780	164	41	25	43	19
5	75	70	416	660	90	2,190	978	156	41	25	27	19
6	83	71	354	660	85	1,100	*920	148	39	24	23	*19
7	57	76	316	788	80	589	*1,070	138	36	24	22	*18
8	52	88	298	1,150	75	418	785	123	32	47	21	54
9	64	86	246	752	70	300	660	110	30	30	20	190
10	59	83	170	572	65	220	600	116	33	25	19	74
11	57	92	150	470	65	170	2,090	158	63	23	22	34
12	54	101	130	423	65	140	2,180	121	40	23	35	31
13	51	154	120	378	60	294	1,310	103	49	22	82	29
14	51	184	110	338	60	608	990	112	45	39	48	28
15	49	134	110	297	60	460	885	107	40	29	39	27
16	49	110	260	280	60	336	752	101	35	47	35	114
17	47	120	392	220	60	260	660	94	30	29	37	219
18	46	147	848	180	*60	323	545	84	28	25	32	95
19	75	170	524	170	64	336	494	82	78	23	29	74
20	62	167	354	170	69	278	470	76	60	24	24	64
21	50	196	298	167	82	242	423	70	51	29	23	53
22	49	1,050	354	172	60	336	400	67	48	24	22	46
23	71	768	450	257	66	182	378	66	46	23	25	51
24	94	485	1,560	209	60	226	357	61	40	22	24	40
25	202	395	1,300	209	55	209	357	77	34	21	23	37
26	152	374	835	242	50	194	316	74	31	20	22	35
27	110	547	380	178	48	1,930	278	84	34	21	19	35
28	99	416	280	280	46	1,310	260	56	33	21	30	56
29	94	374	240	190		542	228	52	29	21	32	59
30	86	862	220	180		470	209	51	26	21	29	135
31	81		340	150		506		48		22	25	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	202	46	73.3	0.237	0.27	
November	1,050	70	247	.799	.89	
December	1,560	110	410	1.33	1.53	
January	2,610	150	506	1.64	1.89	
February	140	46	72.3	.234	.24	
March	4,120	50	645	2.09	2.41	
April	2,180	209	756	2.45	2.73	
May	194	48	104	.337	.39	
June	80	26	41.5	.134	.15	
July	47	20	25.8	.083	.10	
August	82	19	29.9	.097	.11	
September	219	18	57.3	.185	.21	
The year	4,120	18	248	.803	10.92	

*Estimated.

Genesee River at St. Helena, N. Y.

Location.- Water-stage recorder at highway bridge in St. Helena, Wyoming County, 1½ miles below mouth of Wolf Creek.

Drainage area.- 1,017 square miles (revised).

Records available.- August 1908 to September 1934.

Average discharge.- 26 years, 1,201 second-feet. Corrected 25-year average (1908-33), 1,220 second-feet (published erroneously as 1,200 second-feet in Water-Supply Paper 744).

Extremes.- Maximum discharge during year, 15,200 second-feet Mar. 4; maximum gage height, 9.30 feet Jan. 1; minimum discharge, 24 second-feet July 31 (gage height, 1.91 feet).

1908-34: Maximum discharge, about 44,400 second-feet May 17, 1916 (gage height, 12.8 feet); minimum, about 18 second-feet Oct. 5, 17, 1913 (gage height, 1.70 feet).

Remarks.- Records good except those for periods of ice effect, Nov. 14-17, Dec. 9-16, Dec. 27 to Jan. 1, Jan. 17-22, Jan. 29 to Mar. 4, and those estimated, which are fair. Some diurnal fluctuation during low stages caused by power operations. Flow slightly regulated by storage in Caneadea Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	308	194	1,620	8,500	*700	*160	2,440	599	137	78	42	44
2	299	186	1,190	7,160	*550	*260	2,660	536	126	66	44	42
3	294	182	1,100	2,560	*600	*1,700	2,400	496	119	69	69	36
4	299	171	1,340	1,800	*800	*9,000	4,640	458	112	94	83	32
5	245	251	1,570	1,320	700	11,100	3,490	433	115	72	66	28
6	130	371	1,250	1,440	650	6,310	2,510	409	105	75	72	32
7	204	376	828	1,660	600	2,460	2,660	375	105	78	69	34
8	294	388	710	4,180	*460	1,660	2,260	358	105	83	59	44
9	318	293	850	2,380	*300	1,020	1,720	330	102	66	52	70
10	334	210	750	1,720	*550	749	1,500	330	126	72	47	106
11	334	214	650	1,210	*650	650	5,410	330	98	75	42	126
12	257	244	600	1,010	650	642	9,470	358	119	69	36	*83
13	146	265	550	906	600	764	4,120	317	140	96	36	*66
14	229	500	460	882	*600	2,920	2,850	303	140	167	51	*61
15	305	550	360	834	*360	2,000	2,480	324	148	92	80	*56
16	252	420	900	725	*180	1,560	2,010	320	122	83	123	82
17	270	380	2,080	600	*180	1,280	2,010	248	112	78	162	136
18	265	416	2,780	480	*190	2,370	1,590	229	95	61	88	136
19	233	394	1,960	480	190	1,510	1,320	215	135	59	64	360
20	160	452	1,380	600	190	1,110	1,250	201	163	56	59	*278
21	217	549	1,250	700	*190	993	1,140	197	178	52	61	*133
22	308	1,930	1,120	850	*190	1,330	1,020	188	152	47	104	*122
23	313	2,640	930	922	*180	965	922	206	129	40	66	*256
24	323	1,480	1,680	1,140	*170	688	890	193	112	40	69	*335
25	275	1,000	5,590	853	*160	613	1,070	193	89	38	56	*346
26	275	1,010	2,300	905	150	628	930	184	95	34	42	*324
27	284	1,770	1,000	1,020	140	1,860	826	180	92	36	38	*230
28	244	1,220	700	1,080	*140	5,640	725	163	89	42	47	*122
29	226	957	*600	850		2,320	695	152	86	30	75	*105
30	210	1,840	*550	*850		1,620	665	144	83	28	56	*137
31	206		*700	*900		1,380		140		32	40	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	334	130	260	0.256	0.30
November	2,640	171	695	.683	.76
December	5,590	360	1,269	1.25	1.44
January	8,500	480	1,630	1.60	1.84
February	800	140	394	.387	.40
March	11,100	160	2,170	2.13	2.46
April	9,470	665	2,256	2.22	2.48
May	599	140	294	.289	.33
June	178	83	118	.116	.13
July	167	28	64.8	.064	.07
August	162	36	64.5	.063	.07
September	360	28	132	.130	.14
The year	11,100	28	782	.769	10.42

*Estimated.

Genesee River at Jones Bridge, near Mount Morris, N. Y.

Location.- Water-stage recorder at Jones Bridge, 3½ miles northeast of Mount Morris, Livingston County.

Drainage area.- 1,419 square miles (revised).

Records available.- May 1903 to April 1906, August 1908 to December 1913, July 1915 to September 1934.

Average discharge.- 24 years (1908-13, 1915-34), 1,568 second-feet.

Extremes.- Maximum discharge during year, about 14,300 second-feet Mar. 5 (gage height, 21.50 feet); maximum gage height, 21.60 feet Mar. 4; minimum discharge, 32 second-feet Sept. 5 (gage height, 0.15 foot).
1903-6, 1908-13, 1915-34: Maximum discharge, 55,100 second-feet May 17, 1916 (gage height, 25.44 feet); minimum, about 18 second-feet Aug. 29, 1909.

Remarks.- Records good except those for periods of ice effect, Dec. 10-24, Dec. 27 to Jan. 1, Jan. 17-23, Jan. 29 to Mar. 4, Mar. 12-13, and those estimated, which are fair. Diurnal fluctuation at low stages caused by power operations; slight seasonal regulation by storage in Caneadea Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	336	222	2,280	8,000	*850	220	3,130	830	210	80	55	132
2	302	229	1,550	10,500	*650	340	3,300	775	202	88	54	41
3	323	236	1,400	*4,550	*700	2,000	2,990	720	188	111	121	52
4	313	238	1,430	*3,190	900	9,500	4,260	695	171	83	91	52
5	310	215	1,840	2,200	*850	13,600	4,690	642	156	78	84	69
6	203	369	1,600	2,000	*800	10,400	2,980	590	144	110	76	48
7	180	398	1,200	2,200	*750	5,100	3,100	542	138	100	94	65
8	297	415	912	4,450	*550	2,620	2,780	514	134	99	79	54
9	318	415	995	3,240	*420	1,770	2,200	492	126	95	73	77
10	345	311	960	2,260	*600	1,160	1,910	478	130	93	72	106
11	352	286	800	1,760	750	858	3,470	465	140	98	70	114
12	327	249	700	1,400	750	850	11,000	394	123	103	71	165
13	240	309	660	1,250	*700	900	5,900	402	199	132	41	108
14	189	416	550	1,160	*700	2,790	3,680	390	148	118	78	93
15	318	615	460	1,100	*500	2,890	3,040	386	159	116	68	97
16	262	433	1,000	968	*260	2,000	2,500	402	143	108	115	70
17	296	483	2,400	*750	*260	1,700	2,390	386	138	113	154	155
18	287	457	3,200	*600	280	2,510	2,130	316	126	77	140	160
19	293	448	2,600	*600	280	2,230	1,760	293	124	83	83	194
20	205	465	1,900	750	280	1,520	1,580	283	132	84	122	404
21	229	526	1,500	950	280	1,370	1,520	264	172	59	62	189
22	283	1,190	1,400	1,200	280	1,580	1,370	255	170	61	95	158
23	348	3,180	1,200	1,400	260	*1,520	1,250	258	146	37	101	212
24	352	2,000	1,200	1,580	240	*1,050	1,160	257	118	81	61	278
25	313	1,360	6,110	1,450	220	912	1,310	248	134	55	115	357
26	276	1,190	2,990	1,160	200	858	1,280	253	114	36	67	350
27	338	1,820	1,800	1,280	190	1,710	1,130	253	106	58	50	350
28	355	1,760	1,100	1,370	190	6,110	1,020	242	114	61	37	186
29	258	1,260	850	1,100		3,060	940	231	111	68	89	130
30	255	1,660	750	*1,000		2,060	858	234	107	68	80	142
31	243		800	*1,100		1,760		223		56	68	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	352	180	288	0.203	0.23
November	3,180	215	772	.544	.61
December	6,110	460	1,552	1.09	1.26
January	10,600	600	2,144	1.51	1.74
February	900	190	489	.345	.36
March	13,600	220	2,805	1.98	2.28
April	11,000	858	2,688	1.89	2.11
May	830	223	410	.289	.33
June	210	106	146	.103	.11
July	132	36	84.3	.059	.07
August	154	37	82.8	.058	.07
September	404	41	154	.109	.12
The year	13,600	36	972	.685	9.29

*Estimated.

Genesee River at Driving Park Avenue, Rochester, N. Y.

Location.- Water-stage recorder 40 feet below plant no. 5 of Rochester Gas & Electric Corporation and 100 feet above Driving Park Avenue Bridge, in Rochester, Monroe County.

Drainage area.- 2,467 square miles (revised).

Records available.- December 1919 to September 1934.

Average discharge.- 14 years (1920-34), 2,676 second-feet.

Extremes.- Maximum discharge during year, 22,300 second-feet Mar. 5 (gage height, 10.88 feet); minimum, about 20 second-feet frequently when power plant shuts down; minimum daily discharge, 451 second-feet Sept. 1.
1919-34: Maximum discharge, about 29,600 second-feet Dec. 2, 1927 (gage height, 13.5 feet); minimum, approaching zero, occurs frequently during low-water periods when power plant shuts down; minimum daily discharge, 219 second-feet Aug. 14, 1927.

Remarks.- Records good. Barge Canal crosses river about 9 miles upstream. It discharges water from Lake Erie into Genesee River and diverts, in general, a smaller amount to the east for canal purposes. Some additional regulation is provided by headwater storage in Caneadea Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e67	872	2,400	1,880	1,400	860	2,660	1,830	874	675	609	451
2	956	863	2,720	11,800	1,410	895	4,920	1,790	894	747	632	513
3	976	834	2,140	11,600	1,530	1,100	4,440	1,680	742	728	743	464
4	909	802	2,040	4,610	1,160	3,700	4,260	1,700	944	643	640	598
5	*908	713	2,100	3,390	1,410	11,000	7,160	1,570	914	747	607	627
6	930	e10	2,470	3,040	1,470	17,200	5,290	1,360	e62	761	668	612
7	893	875	2,310	2,880	1,460	15,400	4,330	1,560	808	680	648	619
8	719	1,010	2,530	3,570	1,390	9,600	4,330	1,270	739	665	654	652
9	873	1,060	1,960	5,750	1,410	4,380	3,740	1,260	794	707	747	616
10	917	1,040	1,280	4,090	1,170	3,020	3,150	1,360	795	688	718	646
11	1,010	972	1,660	3,160	1,100	1,600	2,850	1,290	e52	704	644	647
12	1,010	924	1,330	2,620	1,210	1,530	8,300	1,180	852	693	534	786
13	989	1,030	1,280	2,370	1,490	1,590	12,300	1,080	e31	778	585	681
14	*912	967	1,190	1,880	1,530	2,280	6,640	1,300	864	780	606	758
15	785	1,050	1,250	2,080	1,420	3,870	4,640	1,250	886	711	578	746
16	e66	1,220	1,360	2,000	1,370	3,880	3,760	1,210	e66	773	574	818
17	942	972	1,110	1,560	1,250	2,860	3,750	1,240	743	739	618	677
18	919	1,090	2,770	1,290	866	2,860	3,830	1,180	804	728	681	659
19	876	992	3,280	1,240	1,000	3,950	3,530	1,110	866	736	841	705
20	939	1,070	3,440	1,360	895	3,350	3,020	958	e54	772	801	730
21	856	1,000	2,690	1,230	951	2,620	2,620	1,050	897	657	636	982
22	792	1,230	2,390	1,670	958	2,540	2,610	1,040	875	516	676	808
23	879	2,280	2,340	1,830	920	2,550	2,530	1,060	786	663	628	725
24	1,030	3,240	1,990	1,840	906	1,960	2,490	985	816	561	683	765
25	1,040	2,340	2,560	2,120	716	1,300	2,530	996	859	564	668	852
26	880	1,850	7,300	2,060	925	1,600	2,610	966	775	578	613	932
27	675	1,830	3,720	1,910	924	1,580	2,480	870	798	638	648	974
28	920	2,560	1,230	1,790	874	4,160	2,300	1,030	763	602	626	896
29	906	2,160	1,490	1,670		6,840	1,980	968	767	591	607	679
30	925	1,980	1,360	1,700		3,810	2,040	788	724	593	604	679
31	693		1,380	1,470		2,670		933		620	752	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,040	719	909		
November	3,240	713	1,322		
December	7,300	1,110	2,228		
January	11,800	1,230	2,957		
February	1,530	716	1,183		
March	17,200	860	4,089		
April	12,300	1,980	4,043		
May	1,830	788	1,221		
June	944	724	828		
July	760	516	679		
August	841	534	654		
September	982	451	717		
The year	17,200	451	1,740	0.705	9.57

Canaseraga Creek near Dansville, N. Y.

Location.- Water-stage recorder at highway bridge 1 mile west of Dansville, Livingston County.

Drainage area.- 153 square miles (revised).

Records available.- July 1910 to December 1912, July 1915 to June 1917, March 1919 to September 1934.

Average discharge.- 14 years (1920-34), 140 second-feet.

Extremes.- Maximum discharge during year probably occurred Mar. 4 and is unknown (gage height not recorded); minimum, 10 second-feet Aug. 9 (gage height, 6.17 feet).
1910-12, 1915-17, 1919-34: Maximum discharge, about 6,900 second-feet Nov. 30, 1927 (gage height, 12.7 feet); minimum, that of Aug. 9, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 15-17, Dec. 9-17, Dec. 26 to Jan. 4, Jan. 16-24, Jan. 29 to Mar. 4, Mar. 9-12, 23-26, and those estimated, which are fair. Slight diurnal fluctuations at low stages from operations upstream.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	34	94	1,200	*50	*30	412	84	23	16	14	14
2	26	34	68	400	*48	*55	321	80	22	16	22	14
3	25	34	61	190	46	*800	281	75	21	25	43	14
4	25	34	72	150	*46	*2,000	474	70	21	23	16	14
5	33	32	65	140	*44	*1,000	307	68	20	19	14	13
6	28	36	57	140	*44	*490	303	64	20	20	14	13
7	27	36	50	211	*42	277	296	59	20	22	14	14
8	28	40	46	395	*42	217	237	55	18	21	13	22
9	32	39	40	233	*40	150	201	53	17	18	12	26
10	27	39	34	198	38	110	186	64	21	17	14	16
11	28	40	28	144	*38	95	675	64	21	16	14	15
12	27	42	24	125	*36	85	692	51	48	17	14	14
13	27	50	22	114	*36	90	382	47	36	24	15	15
14	27	59	20	111	*36	154	285	49	26	19	23	14
15	26	42	22	98	*36	145	257	47	22	17	15	15
16	26	34	42	90	*36	148	217	43	20	16	37	22
17	30	40	80	70	34	135	205	41	20	15	23	31
18	30	46	144	65	*36	165	172	39	19	15	19	20
19	30	42	90	60	38	158	155	38	48	14	16	16
20	30	44	74	55	*38	138	148	35	31	14	15	16
21	28	46	98	55	*40	161	148	32	22	14	14	16
22	35	131	79	55	*38	165	135	32	22	14	16	16
23	40	101	70	70	*36	95	129	33	21	12	17	20
24	38	68	199	70	34	90	157	31	20	12	15	17
25	42	59	430	74	*32	85	148	31	19	13	14	16
26	34	65	150	70	*32	80	129	31	19	12	14	15
27	33	92	100	63	*30	689	121	29	22	15	14	16
28	36	72	80	76	*28	303	110	28	21	15	21	16
29	33	65	70	65		202	100	25	19	14	18	18
30	34	127	65	55		175	90	24	17	14	16	20
31	34		80	*50		206		23		16	14	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	*2	23	30.4	0.199	0.23	
November	131	32	54.2	.354	.40	
December	430	20	82.4	.539	.62	
January	1,200	50	157	1.03	1.19	
February	50	28	38.4	.251	.26	
March	2,000	30	280	1.83	2.11	
April	692	90	249	1.63	1.82	
May	84	23	46.5	.304	.35	
June	48	17	23.2	.152	.17	
July	25	12	16.6	.108	.12	
August	43	12	17.4	.114	.13	
September	31	13	16.9	.110	.12	
The year	2,000	12	84.8	.554	7.52	

*Estimated.

Conesus Creek near Lakeville, N. Y.

Location.- Staff gage at highway bridge known locally as Millville Bridge, 1½ miles below Lakesville, Livingston County.

Drainage area.- 72 square miles.

Records available.- November 1919 to September 1934 (discontinued).

Average discharge.- 14 years (1920-34), 49.1 second-feet.

Extremes.- Maximum discharge during year, 86 second-feet Apr. 12-17 (gage height, 1.58 feet); minimum, 0.7 second-foot Sept. 8.
1919-34: Maximum discharge, about 625 second-feet Dec. 1, 1928 (gage height, 3.6 feet, from graph based on gage readings); minimum, 0.4 second-foot Dec. 18, 20, and 21, 1932.

Remarks.- Records fair. Corrected for ice effect Dec. 11-18, Dec. 26 to Jan. 1, Jan. 17, 18, Jan. 28 to Mar. 1. Considerable regulation afforded by Conesus Lake. Water supply for villages of Avon and Geneseo taken from Conesus Lake.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	2.8	1.2	3.0	11	15	62	63	25	4.7	1.0	0.8
2	12	2.8	1.2	3.9	11	22	51	62	25	4.4	1.0	.8
3	12	2.4	1.6	4.5	11	28	52	62	25	3.2	1.4	.8
4	11	2.0	2.0	4.5	11	31	57	62	24	2.6	1.4	.8
5	11	1.6	2.4	4.8	11	35	58	63	24	2.6	1.0	1.0
6	11	1.6	2.8	5.1	11	41	58	63	22	5.4	1.0	1.0
7	11	1.6	3.0	5.8	11	39	60	63	22	4.4	1.8	.8
8	8.4	1.6	2.8	7.5	10	39	62	57	22	3.2	2.2	1.2
9	7.5	1.6	2.4	7.9	10	39	70	55	21	2.0	2.6	1.8
10	6.6	1.6	2.0	7.9	10	39	75	52	21	13	2.6	1.4
11	5.8	1.6	1.6	8.4	10	38	78	50	19	12	2.6	1.4
12	5.1	1.6	1.4	8.4	10	38	86	46	19	8.3	2.4	1.4
13	5.1	1.6	1.2	8.4	10	39	86	44	19	4.4	2.4	1.4
14	5.1	1.6	1.2	9.3	10	41	86	43	19	3.2	2.4	1.4
15	5.1	1.6	1.2	10	10	39	86	42	19	2.6	2.4	1.4
16	5.1	1.6	1.4	11	10	38	86	44	17	2.4	2.2	1.4
17	5.1	1.6	2.0	12	10	38	86	41	16	2.4	2.2	1.4
18	4.5	1.4	2.4	12	10	37	85	39	16	2.2	2.2	1.4
19	4.5	1.4	2.8	13	10	37	83	38	16	2.0	2.2	1.4
20	4.5	1.2	3.0	12	10	37	81	37	16	1.8	2.0	1.2
21	3.9	1.2	3.3	13	10	39	79	37	3.8	1.6	2.0	1.2
22	3.9	1.2	3.6	13	10	39	76	35	2.6	1.6	1.6	1.4
23	3.3	1.1	3.6	12	9.5	41	75	34	3.8	1.4	1.6	5.4
24	2.8	1.1	3.6	12	9.5	41	72	34	4.4	1.4	1.4	4.4
25	2.8	1.1	3.6	12	9.0	39	72	32	4.4	1.2	1.2	4.4
26	2.8	1.0	3.4	11	8.5	41	72	30	5.0	1.2	1.2	3.8
27	2.8	1.0	3.0	11	8.5	41	70	28	5.8	1.2	1.2	3.8
28	2.8	1.0	2.6	12	10	46	70	28	5.4	1.2	1.0	3.2
29	2.8	1.0	2.4	12		47	67	27	5.0	1.0	1.0	2.9
30	2.8	1.0	2.2	12		48	67	25	4.7	1.0	1.0	2.6
31	2.8		2.4	11		46		25		1.0	.8	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	12	2.8	5.96	0.083	0.10	
November	2.8	1.0	1.52	.021	.02	
December	3.6	1.2	2.36	.033	.04	
January	13	3.0	9.37	.130	.15	
February	11	8.5	10.1	.140	.15	
March	48	15	38.0	.528	.61	
April	86	51	72.3	1.00	1.12	
May	63	25	43.9	.610	.70	
June	25	2.6	15.1	.210	.23	
July	13	1.0	3.25	.045	.05	
August	2.6	.8	1.71	.024	.03	
September	5.4	.8	1.91	.027	.03	
The year	86	.8	17.1	.238	3.23	

Canadice Lake outlet near Hemlock, N. Y.

Location.- Hook gage above weir at foot of Canadice Lake, Ontario County, 4 miles southeast of Hemlock, Livingston County.

Drainage area.- 12.6 square miles.

Records available.- April 1903 to September 1934.

Average discharge.- 31 years, 11.5 second-feet.

Remarks.- Data collected, computed, and furnished for publication by city engineer of Rochester, N. Y.

Monthly discharge, 1933-34

Month	Mean elevation of lake above low-water mark (feet)	Discharge in second-feet		Run-off in inches
		Mean	Per square mile	
October	-1.791	1.334	0.106	0.122
November	-2.054	.951	.075	.084
December	-1.946	1.549	.123	.142
January	- .800	5.346	.424	.489
February	- .800	3.285	.260	.271
March	- .254	18.979	1.506	1.736
April	- .178	20.359	1.616	1.804
May	- .742	4.430	.352	.406
June	- .661	.232	.018	.020
July	- .553	.203	.016	.018
August	- .699	.205	.016	.018
September	- .978	.191	.015	.017
The year	- .954	4.760	.378	5.127

Note.- Terminal water-surface elevation for year was 0.57 foot higher than that for preceding year, corresponding to an increase in storage of 15,416,450 cubic feet, or a discharge of 0.489 second-foot for year. This correction applied to the above gives a mean for year of 5.249 second-feet, 0.417 second-foot per square mile, and 6.660 inches run-off from drainage area.

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Oswego River at Lock 7, Oswego, N. Y.

Location.- Water-stage recorders at Lock 7, in Oswego, Oswego County, three-quarters of a mile above mouth.

Drainage area.- 5,121 square miles.

Records available.- November 1933 to September 1934.

Extremes.- Maximum discharge during period, about 16,400 eecond-feet Apr. 15 (gage height, 8.22 feet); minimum, about 176 second-feet Aug. 24 (gage height, 0.97 foot); minimum daily discharge, 465 second-feet Aug. 12.

Remarks.- Records good except those for low stages, which are fair. This record is the sum of the computed diecharge records for main river channel, hydraulic canal, and Barge Canal, and represents total discharge at Oswego. Main river channel has large diurnal fluctuations from power operations. Diecharge through hydraulic canal and Barge Canal is taken as required; the two canals seldom use more than 200 second-feet during summer or 250 second-feet during winter. A large amount of natural storage and some artificial regulation is afforded by the many large lakes and the Barge Canal system in the river basin. The head of Oswego River, at Three Rivers, is at the lowest level of the Erie Division of the Barge Canal west of Rome; thus Oswego River receives canal water from both directions. A small diversion is occasionally made from tributary streams which is added to the summit level of the Barge Canal at New London.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			3,550	4,650	5,800	3,400	8,100	7,200	3,300	1,580	1,100	800
2			3,900	6,100	5,400	3,300	11,000	6,700	2,140	2,380	1,240	720
3		1,740	3,300	6,200	5,100	3,700	11,200	6,200	2,300	1,860	890	640
4		1,520	5,100	6,000	4,150	3,800	11,400	5,500	2,650	1,040	980	620
5		1,320	5,200	5,800	5,600	7,400	11,000	4,750	2,800	2,320	1,160	940
6		1,480	5,600	5,600	5,100	9,600	10,800	4,000	2,550	2,480	520	780
7		2,020	4,900	4,750	4,800	10,800	10,400	5,700	2,260	1,300	820	600
8		1,560	3,950	7,600	4,600	10,400	9,600	4,350	2,440	1,440	760	660
9		1,860	3,600	7,400	4,350	9,900	10,800	4,500	2,320	2,340	890	1,600
10		1,260	3,450	7,500	3,950	9,300	10,200	4,250	1,820	1,400	760	920
11		1,700	4,250	7,100	3,150	6,700	10,200	4,400	2,650	1,780	910	1,000
12		1,140	4,450	7,500	3,500	8,600	10,600	3,600	2,850	1,480	465	820
13		1,660	4,050	6,900	3,900	7,000	11,800	3,000	2,650	1,420	580	1,060
14		1,980	4,150	5,700	3,350	6,800	13,000	4,450	2,340	1,480	1,040	750
15		2,180	4,400	8,200	3,250	7,200	13,800	4,200	1,900	1,120	810	950
16		2,220	2,950	7,100	3,050	7,100	12,800	3,850	1,720	1,660	860	950
17		2,080	3,150	6,100	2,800	7,000	12,000	3,600	1,480	1,420	970	1,220
18		1,780	4,250	5,800	2,700	6,400	11,800	3,300	2,460	1,320	560	1,540
19		1,360	4,250	5,900	3,000	9,000	11,600	3,100	3,200	1,240	580	1,400
20		1,520	4,900	5,700	3,400	8,200	10,600	3,000	2,500	1,380	860	1,600
21		1,960	3,850	4,750	3,050	7,900	11,000	3,700	2,040	940	950	1,560
22		2,500	4,200	6,700	3,000	7,300	9,900	3,300	1,960	970	880	1,320
23		2,650	3,700	6,300	2,950	6,600	9,800	3,550	2,120	770	720	1,560
24		3,200	3,300	5,900	2,500	8,200	9,700	2,900	1,800	1,020	1,080	1,240
25		3,050	3,950	6,900	2,380	5,000	8,100	2,800	2,380	990	600	1,440
26		2,550	5,600	6,600	3,200	6,600	8,300	2,800	2,550	950	950	1,780
27		2,850	5,000	6,200	3,450	6,400	7,200	2,400	2,500	1,300	760	1,720
28		3,500	4,600	4,700	3,500	7,800	7,200	3,150	2,200	1,040	840	1,380
29		2,460	4,550	5,700		8,300	6,200	3,450	1,760	1,080	640	1,380
30		3,300	5,100	4,800		8,100	8,000	2,220	1,940	920	820	1,460
31			4,100	5,800		7,900		3,100		1,140	940	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October					
November 3-30	3,500	1,140	2,086	0.407	0.42
December	5,600	2,950	4,235	.827	.95
January	8,200	4,650	6,198	1.21	1.40
February	5,800	2,380	3,749	.732	.76
March	10,800	3,300	7,216	1.41	1.63
April	13,800	6,200	10,270	2.01	2.24
May	7,200	2,220	3,968	.775	.89
June	3,300	1,480	2,319	.453	.51
July	2,480	770	1,405	.274	.32
August	1,240	465	836	.163	.19
September	1,780	600	1,147	.224	.25
The year					

Fall Creek near Ithaca, N. Y.

Location.- Water-stage recorder in Forest Home, Tompkins County, half a mile above Cornell University Dam and 1⅔ miles northwest of Ithaca.

Drainage area.- 124 square miles (revised).

Records available.- February 1925 to September 1934. July 1908 to June 1909, 1¼ miles below present site.

Extremes.- Maximum discharge during year, 3,480 second-feet Mar. 27; maximum gage height, 7.80 feet Mar. 4; minimum discharge, 7.9 second-feet Aug. 15 (gage height, 0.29 foot).

1925-34: Maximum discharge, about 6,290 second-feet Nov. 16, 1926; maximum gage height, that of Mar. 4, 1934; minimum discharge, about 3 second-feet Aug. 25, 1927 (gage height, 0.18 foot).

Remarks.- Records good except those for periods of ice effect, Nov. 15-21, Dec. 11-18, Dec. 27 to Jan. 4, Jan. 16-23, Jan. 28 to Mar. 4, Mar. 9-13, 20-26, and those estimated, which are fair. Water supply for Cornell University is diverted from Fall Creek about a mile above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	58	222	800	75	*26	2,200	106	27	23	*18	13
2	40	53	134	850	75	32	681	99	25	20	*15	13
3	42	55	151	280	70	180	493	97	69	21	*15	11
4	31	64	516	240	65	1,300	518	97	155	27	*15	15
5	32	*52	384	230	60	1,630	437	95	57	29	*14	23
6	32	*55	256	269	55	724	455	86	38	29	*12	18
7	27	67	225	337	50	334	575	78	41	36	*12	16
8	37	88	186	556	50	239	370	72	32	34	*11	20
9	47	82	161	359	48	150	291	68	27	27	*11	27
10	46	68	94	278	46	120	256	69	33	23	*12	22
11	39	62	80	234	44	100	498	99	119	23	*12	19
12	32	62	55	195	44	85	978	80	76	20	*10	17
13	31	71	65	188	44	100	621	67	132	19	*11	14
14	27	196	65	177	42	205	558	71	74	18	17	16
15	28	130	60	163	40	183	528	72	51	18	11	15
16	27	75	100	120	38	234	452	64	42	23	16	27
17	36	80	150	95	36	230	440	55	34	27	34	465
18	56	90	240	85	38	346	319	50	31	20	23	188
19	47	100	188	110	36	199	278	46	99	17	18	88
20	41	110	141	100	34	190	296	45	133	16	14	59
21	32	110	144	95	32	160	252	41	70	18	15	41
22	32	443	130	100	36	150	214	42	56	17	19	58
23	48	296	127	200	34	85	199	41	41	13	22	131
24	61	171	198	240	32	80	188	39	41	13	22	72
25	240	144	661	214	30	*75	177	41	35	15	18	57
26	134	147	223	199	28	*100	160	38	34	14	15	43
27	96	270	120	150	*26	*1,370	150	38	35	17	14	39
28	79	208	100	110	*26	1,260	144	34	43	20	20	56
29	68	205	90	90		324	127	32	35	18	21	62
30	66	251	85	80		296	118	32	27	15	16	127
31	63		90	75		385		28		*20	15	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	240	27	53.5	0.431	0.50	
November	443	52	129	1.04	1.16	
December	661	55	176	1.42	1.64	
January	850	75	233	1.88	2.17	
February	75	26	44.1	.356	.37	
March	1,630	26	351	2.83	3.26	
April	2,200	118	433	3.49	3.89	
May	106	28	62.0	.500	.58	
June	155	25	57.1	.460	.51	
July	36	13	21.0	.169	.19	
August	34	10	16.1	.130	.15	
September	465	11	59.1	.477	.53	
The year	2,200	10	137	1.10	14.95	

*Estimated.

Note.- During the year Cornell University diverted 216,306,000 gallons for water supply purposes, thus reducing the mean yearly discharge at the gaging station about 0.9 second-foot.

Owasco Lake outlet near Auburn, N. Y.

Location.- Water-stage recorder above concrete dam 2½ miles below center of Auburn, Cayuga County, and 4 miles below State dam at outlet of Owasco Lake.

Drainage area.- 208 square miles (revised).

Records available.- November 1912 to September 1934.

Average discharge.- 21 years (1913-34), 283 second-feet.

Extremes.- Maximum discharge during year, 696 second-feet Apr. 5 (gage height, 3.07 feet); minimum, 2.2 second-feet Nov. 29 (gage height, 1.37 feet); minimum daily discharge, 15 second-feet Sept. 16, 1934.

1912-34: Maximum discharge, 2,750 second-feet during period Mar. 25-30, 1913 (gage height, from flood marks, 6.4 feet); minimum, that of Nov. 29, 1933; minimum daily discharge, 9.8 second-feet Oct. 30, 1921.

Remarks.- Records good except those for periods of backwater from aquatic growth Oct. 1 to Nov. 25 and June 17 to Sept. 30, those for period of ice effect, Jan. 29 to Mar. 1, and those estimated, which are fair. Diurnal fluctuation in flow caused by operation of mills in Auburn; seasonal regulation at State dam. Water supply for Auburn taken from Owasco Lake, part of which returns to outlet above gaging station as sewage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	47	53	161	300	170	533	290	171	135	*90	52
2	70	45	59	153	280	169	618	285	170	130	*90	54
3	62	50	48	139	320	180	625	287	164	120	*86	37
4	64	44	79	146	300	*200	625	286	168	104	*84	76
5	56	45	76	138	300	*260	648	289	160	106	*78	58
6	60	44	79	121	340	*300	625	281	161	122	*78	52
7	53	45	78	127	300	*320	625	281	159	116	*82	56
8	50	44	93	142	300	*320	618	278	159	*122	*80	62
9	68	42	86	173	200	316	602	250	160	*124	*82	56
10	58	47	88	197	240	305	595	245	161	*120	*78	54
11	54	44	96	202	240	255	602	221	154	*122	*78	49
12	56	45	102	205	190	260	625	214	159	*118	*80	40
13	54	47	102	217	180	251	648	*220	154	*112	*78	36
14	50	49	99	232	170	189	648	*215	154	*110	*74	49
15	42	45	99	246	180	199	640	*210	154	*100	*72	24
16	60	47	99	260	190	216	640	*205	151	*104	*70	15
17	56	47	96	246	190	219	625	*210	145	*108	*70	58
18	54	49	99	275	180	225	595	*205	150	*104	*70	40
19	50	49	99	235	170	240	595	*200	155	*104	*70	33
20	50	49	100	272	150	238	550	*200	145	*102	*68	34
21	47	54	111	267	160	240	482	*195	145	*102	*66	29
22	50	56	115	206	160	231	468	*195	145	*98	64	45
23	49	50	117	225	170	239	468	*190	145	*96	66	33
24	44	49	123	209	120	236	450	189	140	*94	62	33
25	58	60	121	270	160	225	410	185	135	*94	62	38
26	47	65	124	257	170	233	395	180	135	*94	60	64
27	47	61	130	267	160	295	340	173	135	*92	54	49
28	45	64	143	265	180	434	339	185	135	*92	60	60
29	49	49	171	160		444	325	174	135	*90	56	50
30	45	66	263	220		399	319	168	135	*92	60	28
31	45		130	300		405		174		*90	54	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	70	42	53.5	0.257	0.30
November	66	42	49.9	.240	.27
December	263	48	106	.510	.59
January	300	121	211	1.01	1.16
February	340	120	215	1.03	1.07
March	444	169	264	1.27	1.46
April	648	319	542	2.61	2.91
May	290	168	222	1.07	1.23
June	171	135	151	.726	.81
July	135	90	107	.514	.59
August	90	54	71.7	.345	.40
September	76	15	45.5	.219	.24
The year	648	15	169	.812	11.03

*Estimated.

East Branch of Fish Creek at Taberg, N. Y.

Location.- Water-stage recorder at highway bridge in Taberg, Oneida County, just below mouth of Furnace Creek.

Drainage area.- 189 square miles (revised).

Records available.- April 1923 to September 1934.

Average discharge.- 11 years, 565 second-feet.

Extremes.- Maximum discharge during year, 7,460 second-feet Nov. 30 (gage height, 6.52 feet); minimum, 17 second-feet July 24 (gage height, 0.21 foot).
1923-34: Maximum discharge, about 16,500 second-feet Oct. 6, 1932 (gage height, 9.18 feet); minimum, 11 second-feet Sept. 2, 1933 (gage height, 0.08 foot).

Remarks.- Records good except those for periods of ice effect, Nov. 17-20, Dec. 10-17, Dec. 26 to Jan. 1, Jan. 15-25, Jan. 28 to Mar. 5, Mar. 12, 25, and those estimated, which are fair. Small amount of water diverted above station by city of Oneida for municipal supply. Some diurnal fluctuation at low stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	342	2,700	1,100	170	80	3,100	412	80	40	38	20
2	48	330	1,120	1,330	160	85	2,850	380	77	37	30	20
3	45	394	781	*928	140	240	2,620	347	71	36	54	21
4	42	455	1,150	*754	130	600	2,480	314	63	36	57	26
5	39	291	973	*646	120	1,100	2,120	278	62	35	42	91
6	36	221	1,020	*592	*110	1,200	1,940	227	62	38	34	63
7	34	184	958	628	*110	885	1,720	208	72	109	28	42
8	34	181	636	867	*100	631	*1,650	191	62	78	22	64
9	40	163	378	756	*100	465	*1,590	180	64	54	22	119
10	41	145	200	579	*95	376	1,680	309	164	39	38	83
11	51	114	160	465	*90	*314	3,100	360	160	29	37	54
12	61	131	140	398	*100	280	4,110	274	176	26	27	39
13	53	211	120	342	100	*270	1,860	227	385	51	27	46
14	44	376	110	299	95	312	1,370	249	274	324	63	60
15	40	279	110	260	95	406	1,230	250	181	183	62	51
16	35	195	120	220	90	421	1,570	205	145	97	44	68
17	225	170	180	180	90	394	2,040	177	*177	66	48	684
18	368	160	250	170	90	914	1,570	159	94	48	42	350
19	289	170	240	160	85	886	1,480	145	313	36	*46	179
20	201	170	227	150	85	774	1,640	147	382	37	*48	123
21	146	170	215	140	85	574	1,070	194	206	29	*60	92
22	125	634	205	130	90	413	*766	273	138	23	*44	155
23	216	870	182	190	90	304	*801	468	105	20	*38	288
24	227	574	215	360	90	274	995	313	82	18	*41	230
25	320	431	368	500	85	240	1,060	221	69	21	39	143
26	217	*554	400	547	85	230	716	182	58	22	30	113
27	195	726	320	426	85	708	660	155	63	98	26	118
28	263	580	260	300	80	1,110	660	141	63	370	26	230
29	*270	543	220	240		1,160	563	115	54	141	24	160
30	*215	5,030	200	200		1,100	465	107	44	73	21	*140
31	260		190	170		1,100		92		50	21	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	368	34	136	0.720	0.83	
November	5,030	114	493	2.61	2.91	
December	2,700	110	463	2.45	2.82	
January	1,330	130	452	2.39	2.76	
February	170	80	102	.540	.56	
March	1,200	80	576	3.05	3.52	
April	4,110	465	1,649	8.72	9.73	
May	468	92	235	1.24	1.43	
June	385	44	130	.688	.77	
July	370	18	73.0	.386	.44	
August	63	21	38.0	.201	.23	
September	684	20	129	.683	.76	
The year	5,030	18	373	1.97	26.76	

Black River near Boonville, N. Y.

Location.- Water-stage recorder at highway bridge three-quarters of a mile above mouth of Sugar River and 2 miles northeast of Boonville, Oneida County.

Drainage area.- 295 square miles (revised).

Records available.- February 1911 to September 1934.

Average discharge.- 23 years, 658 second-feet.

Extremes.- Maximum discharge during year, 4,310 second-feet Apr. 17; maximum gage height, 11.30 feet Mar. 27; minimum discharge, 44 second-feet Sept. 16 (gage height, 3.25 feet).

1911-34: Maximum discharge, about 10,000 second-feet Mar. 28, 1913 (gage height, about 12.5 feet); minimum, about 5 second-feet Aug. 26, 1918 (gage height, 2.40 feet).

Remarks.- Records good except those for periods of ice effect, Nov. 12-22, Dec. 11-17, 23-31, and Jan. 15 to Apr. 3, and those estimated, which are fair. Flow partly regulated by storage in several headwater reservoirs. Forestport feeder diverts water from State Pond at Forestport. That portion of diversion which does not pass down Black River Canal (flowing south) returns to Black River below station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	216	1,690	*320	500	140	2,200	675	222	124	260	243
2	71	248	1,080	*850	500	130	2,400	653	214	117	248	316
3	67	242	940	*850	480	400	2,600	642	206	115	234	267
4	69	264	970	*750	460	850	2,620	642	195	164	228	272
5	65	234	910	*650	460	1,200	2,510	604	197	108	211	266
6	64	178	820	*550	440	1,200	2,400	589	200	108	197	162
7	66	146	820	*500	440	1,000	2,290	543	197	127	192	113
8	82	131	692	*550	420	900	2,160	316	192	136	187	98
9	115	122	522	*600	420	700	2,080	296	206	169	220	140
10	115	110	359	*650	400	550	2,130	380	251	190	252	98
11	110	95	*340	*600	400	480	2,470	610	246	144	203	81
12	90	90	*300	*550	420	440	3,220	686	225	120	182	67
13	82	100	*300	*494	420	460	2,590	600	330	192	175	68
14	85	300	*280	471	400	550	1,980	518	282	357	286	73
15	69	380	280	440	400	500	1,710	485	248	309	219	50
16	72	280	300	420	380	500	1,980	440	216	195	200	46
17	78	220	320	380	360	500	3,910	411	197	146	203	119
18	93	180	341	340	360	800	3,150	390	180	117	200	318
19	103	170	427	320	*380	750	2,340	382	313	104	203	248
20	83	160	326	300	380	650	2,530	386	679	100	236	203
21	69	170	242	280	360	550	2,170	427	456	96	214	137
22	67	240	270	280	340	500	1,640	480	319	89	208	110
23	96	484	260	320	340	500	1,510	462	251	88	208	*231
24	218	523	300	400	340	440	1,460	398	214	98	200	*200
25	380	431	360	440	340	380	1,380	356	185	121	206	*160
26	318	406	340	400	320	380	1,180	326	164	115	190	*140
27	226	467	320	380	260	700	1,040	312	159	233	157	*140
28	222	471	300	340	180	1,300	940	296	148	402	153	*150
29	236	467	300	320		1,300	842	276	138	395	146	163
30	195	1,100	280	360		1,500	714	251	129	285	126	341
31	187		*280	340		1,400		236		260	109	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	380	59	124		
November	1,100	90	288		
December	1,690	242	493		
January	850	280	466		
February	500	180	389		
March	1,500	130	698		
April	3,910	714	2,072		
May	686	236	454		
June	679	129	239		
July	402	88	172		
August	286	109	202		
September	341	46	167		
The year	3,910	46	479		

*Estimated.

Black River at Watertown, N. Y.

Location.- Water-stage recorder at Vanduzee Street Bridge, in Watertown, Jefferson County.

Drainage area.- 1,876 square miles (revised).

Records available.- July 1920 to September 1934.

Average discharge.- 14 years, 3,961 second-feet.

Extremes.- Maximum discharge during year, 16,500 second-feet Apr. 3 (gage height, 7.01 feet); minimum (estimated), 10 second-feet Sept. 2 (gage height, -0.19 foot); minimum daily discharge, 436 second-feet Sept. 3.
1920-34: Maximum discharge, 33,900 second-feet Apr. 9, 1928 (gage height, 10.6 feet); minimum, that of Sept. 2, 1934; minimum daily discharge, 410 second-feet Aug. 13, 1923.

Remarks.- Records good except those for periods of ice effect, Dec. 11-15, Dec. 23 to Jan. 1, Jan. 18-22, Jan. 29 to Feb. 10, Feb. 16-17, Feb. 24 to Mar. 1, and those estimated, which are fair. Flow partly regulated by storage in Stillwater Reservoir, Fulton Chain of Lakes, and other reservoirs in upper drainage basin. During canal season water is diverted out of drainage basin through Forestport feeder and Black River Canal (flowing south). Large diurnal fluctuation caused by operation of mills and power plants in Watertown and above.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	900	1,770	8,770	3,200	2,200	1,300	9,990	4,330	1,280	594	1,540	1,260
2	1,020	1,850	8,430	5,880	2,400	1,230	12,100	3,880	1,360	1,090	1,550	508
3	1,290	2,120	8,460	5,630	2,400	1,940	14,000	3,820	914	922	1,270	436
4	1,300	2,040	7,370	4,960	1,900	3,600	14,400	3,390	1,040	859	1,040	855
5	1,250	1,680	6,920	4,010	1,800	6,440	12,500	3,110	1,430	773	823	1,160
6	1,300	1,660	6,060	4,100	2,200	7,680	11,900	2,580	1,350	979	932	1,400
7	1,300	1,860	5,780	4,160	2,000	6,770	11,200	2,460	1,390	1,430	1,130	1,260
8	835	1,650	5,250	4,250	1,900	6,060	10,400	2,540	1,450	588	1,240	1,270
9	932	1,550	4,500	4,740	*1,800	5,380	9,830	2,370	1,660	948	1,060	726
10	1,090	1,490	2,500	4,620	*1,700	4,160	9,620	2,090	880	774	1,160	970
11	1,290	1,510	2,200	4,040	1,290	2,770	9,630	2,420	782	948	1,280	1,170
12	1,490	1,100	2,400	3,510	*1,500	*2,200	10,400	2,920	1,560	1,030	760	1,330
13	1,340	1,170	2,400	3,010	*1,800	*2,400	11,500	2,380	1,780	1,120	736	1,220
14	1,210	1,500	2,200	2,770	*1,900	2,540	11,800	2,560	2,090	1,070	932	1,010
15	918	1,710	2,200	2,350	1,710	2,860	11,100	2,390	2,120	1,000	1,200	974
16	784	1,820	2,000	2,480	1,600	2,680	10,300	2,340	1,920	1,350	1,260	650
17	1,350	1,760	1,740	2,860	1,500	2,550	9,740	2,170	906	1,500	1,240	742
18	1,320	1,600	2,190	2,800	1,170	4,270	10,100	1,990	1,590	1,230	900	1,160
19	1,570	1,300	2,350	2,200	1,350	5,320	11,800	1,660	1,700	1,250	867	1,660
20	1,610	1,280	2,200	2,400	1,700	4,790	11,600	1,480	1,800	1,120	751	1,440
21	1,600	1,590	2,090	2,400	1,590	4,360	10,600	1,640	2,710	1,190	906	1,430
22	1,160	2,080	2,030	2,200	1,480	3,930	9,840	1,970	3,110	988	1,190	1,060
23	1,100	2,910	2,200	2,530	1,610	3,060	8,860	2,340	2,240	970	1,100	732
24	1,570	3,090	1,900	3,050	1,600	2,470	8,040	2,400	962	838	1,090	1,070
25	1,970	2,780	2,200	3,130	1,200	1,720	7,840	2,120	1,240	978	964	1,300
26	2,480	2,230	2,400	3,490	1,100	1,760	7,680	1,850	1,300	925	653	1,340
27	2,220	2,270	2,200	2,990	1,300	2,610	7,520	1,540	1,410	788	708	1,440
28	1,800	2,710	2,200	2,890	1,300	5,180	6,940	1,510	1,440	884	873	1,140
29	1,670	2,840	2,400	2,200		5,520	5,870	1,510	1,370	1,100	914	1,150
30	1,590	6,680	2,200	2,200		5,920	4,920	1,500	1,490	1,630	1,170	951
31	1,680		2,200	2,200		6,550		1,440		1,640	1,060	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,480	784	1,385	0.738	0.85
November	6,680	1,100	2,053	1.09	1.22
December	8,770	1,740	3,546	1.89	2.18
January	5,880	2,200	3,331	1.78	2.05
February	2,400	1,100	1,679	.895	.93
March	7,680	1,230	3,872	2.06	2.38
April	14,400	4,920	10,070	5.37	5.99
May	4,330	1,440	2,345	1.25	1.44
June	3,110	782	1,542	.822	.92
July	1,640	588	1,049	.559	.64
August	1,550	653	1,042	.555	.64
September	1,660	436	1,094	.583	.65
The year	14,400	436	2,749	1.47	19.89

Forestport feeder near Boonville, N. Y.

Location.- Slope station with two water-stage recorders at lower end of feeder, above point where it enters the basin at Boonville, Oneida County. Gage 1 is in Hawkinsville; gage 2 is 2.53 miles downstream from gage 1 and 1 mile upstream from basin in Boonville.

Records available.- October 1915 to November 1933 during canal seasons (discontinued).

Remarks.- Records fair. Discharge determined by use of Chezy formula, variation in coefficient "C" during season being based on current-meter measurements. Canal diverts water from Black River at Forestport.

On Oct. 11 a gaging station was established on Mill Creek sluiceway at Boonville. This station will give a record throughout year of water returned to Black River from Forestport feeder. Discharges of Mill Creek sluiceway and Black River Canal (flowing south) near Boonville represent total diversion from Black River at Forestport except that the run-off intercepted from an area of 14.2 square miles is included.

Discharge, in second-feet, 1933

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	160										
2	149	160										
3	*150	*164										
4	*150	*162										
5	*150	158										
6	*150	158										
7	*150	155										
8	*147	153										
9	*150	153										
10	*150	152										
11	*150	*152										
12	149	*152										
13	148	*157										
14	148	*151										
15	145											
16	149											
17	150											
18	149											
19	150											
20	154											
21	151											
22	148											
23	153											
24	157											
25	166											
26	163											
27	155											
28	160											
29	157											
30	158											
31	160											

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	166	144	152		
November 1-14	164	151	156		
December					
January					
February					
March					
April					
May					
June					
July					
August					
September					
The year					

*Estimated.

Mill Creek sluiceway at Boonville, N. Y.

Location.- Water-stage recorder about 500 feet above Schuyler Street, Boonville, Oneida County, and a quarter of a mile above confluence with Mill Creek.

Records available.- October 1933 to September 1934.

Extremes.- Maximum discharge recorded during year, 57 second-feet June 21 (gage height, 0.93 foot); maximum gage height, 2.86 feet sometime during period Dec. 11-16; minimum discharge, less than 0.02 second-foot during periods of no diversion.

Remarks.- Records good except those for periods of ice effect, Nov. 15-25, Dec. 9, 10, and Jan. 17-27, and those estimated, which are poor. The sum of this record and that of Black River Canal (flowing south) represents total diversion from Black River at Forestport through Forestport feeder and includes also run-off from about 14 square miles tributary to the canal system and Mill Creek. This record shows amount of water returned to Black River.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		25	*36					0.4	2	6	22	16
2		25	32					.4	2	23	23	9
3		25	31					.4	2	23	24	9
4		11	32					.2	2	6	16	24
5		2	32					.2	2	22	10	22
6		23	35				*1	.2	16	24	24	22
7		14	38					.2	14	14	23	23
8		2	37	*0.2				.2	10	6	24	15
9		2	30					.3	13	14	24	6
10		2	20					.4	*14	*8	22	22
11		2	*11				.9	.2	*14	*15	15	23
12	24	2	*6				.8	.1	*10	*15	6	23
13	22	2	*3				.3	.05	*12	*15	33	22
14	17	2	*1				*.3	.05	5	*13	20	22
15	2	2	*1				*.3	.05	6	6	21	16
16	23	1		.02			*.3	.05	6	21	23	6
17	23	1		.05				.05	6	21	23	25
18	23	1		.05				.05	5	22	14	22
19	22	1		.06			*.5	.1	26	21	7	23
20	24	1		.06				.1	12	21	23	23
21	12	1		.05				.1	28	13	23	23
22	1	14		.05			.2	.1	22	5	15	16
23	22	18		.1			.3	.05	13	22	22	5
24	22	18	*.3	.1			.4	.1	6	22	22	*22
25	25	14		.1			.4	.1	21	22	16	*22
26	25	*14		.1			.3	4	23	22	6	22
27	2	*14		.1			.6	3	24	23	22	22
28	5	*18					.5	1	23	13	22	*22
29	2	*22					.4	1	22	5	21	15
30	23	*30		*.05			.4	1	11	22	22	5
31	25							2		22	21	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 12-31	25	1	17.2		
November	30	1	10.3		
December	38		11.3		
January		.02	.13		
February			*.05		
March			*1.0		
April		.2	.63		
May	4	.05	.521		
June	28	2	12.4		
July	24	5	16.4		
August	33	6	19.6		
September	25	5	18.2		
The year					

*Estimated.

Black River Canal (flowing south) near Boonville, N. Y.

Location.- Two water-stage recorders, no. 1 on main canal at Lock 69 and no. 2 on Lansingkill spillway 100 feet downstream from head gates in summit level of canal, 600 feet upstream from Lock 70 and 2 miles south of Boonville, Oneida County.

Records available.- September 1915 to September 1934 during canal seasons.

Remarks.- Records good. This record includes combined flow at gages 1 and 2 and represents total diversion from Black River through Forestport feeder, which passes out of Black River Basin into Mohawk River Basin.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*140	*135								73	59	64
2	*118	*139							*2	57	60	76
3	*118	*141							3	58	68	77
4	*118	*152							9	44	77	65
5	*120	165							16	49	82	45
6	*120	140							6	60	70	53
7	*131	146							4	68	70	60
8	*146	157							5	75	69	68
9	*129	157							9	47	68	60
10	*126	156							20	5	53	49
11	*126	*156							8	2	74	59
12	*126	*156							5	21	86	57
13	*126	*162							11	40	69	58
14	*130	*154							16	47	25	54
15	146								24	55	14	63
16	126								33	59	43	66
17	130								43	57	50	57
18	126								47	57	56	64
19	127								41	57	64	66
20	129								25	58	45	65
21	139								36	64	45	64
22	149								50	72	54	69
23	132								54	57	49	68
24	137								60	57	48	67
25	146								46	50	54	68
26	*143								57	54	61	65
27	*161								60	60	48	64
28	*164								59	56	48	46
29	*166								59	47	47	71
30	*142								64	58	41	70
31	*138									59	48	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	166	118	135		
November 1-14	165	135	151		
December					
January					
February					
March					
April					
May					
June 2-30	64	2	30.1		
July	75	2	52.4		
August	86	14	56.3		
September	77	45	62.6		
The year					

*Estimated.

Note.- Practically no diversion Nov. 15 to June 1.

Moose River at McKeever, N. Y.

Location.- Water-stage recorder half a mile west of McKeever, Herkimer County, and 2 miles below mouth of South Branch of Moose River.

Drainage area.- 365 square miles.

Records available.- May 1922 to September 1934.

Average discharge.- 12 years, 848 second-feet.

Extremes.- Maximum discharge during year, 5,340 second-feet Apr. 17 (gage height, 8.78 feet); minimum, 112 second-feet Aug. 23 (gage height, 1.62 feet).
1922-34: Maximum discharge, 11,000 second-feet June 22, 1922 (gage height, 12.9 feet); minimum, 64 second-feet Sept. 2, 1925 (gage height, 1.37 feet).

Remarks.- Records excellent except those for periods of ice effect, Nov. 11-22, Dec. 10-20, Dec. 25 to Apr. 6, and those estimated, Apr. 13, 14, July 11, which are fair. Flow regulated to some extent by storage in Fulton Chain of Lakes. Diurnal fluctuation during medium and low stages caused by operation of paper mill in McKeever.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	334	520	3,360	360	300	280	2,000	1,180	342	179	306	132
2	320	612	1,800	1,000	300	300	2,400	1,210	331	152	252	132
3	306	545	1,400	950	280	360	2,800	1,120	359	140	196	135
4	296	568	1,300	850	280	440	2,800	1,060	401	128	168	148
5	289	500	1,270	700	260	650	2,600	945	334	125	158	205
6	278	408	1,210	650	280	650	2,600	810	289	121	148	255
7	286	356	1,210	550	300	600	2,560	760	265	135	135	303
8	289	324	1,030	600	300	500	2,350	685	242	138	128	342
9	282	282	862	700	300	440	2,300	612	220	138	128	360
10	292	245	750	750	300	360	2,500	652	275	128	128	324
11	303	240	650	650	320	320	2,870	952	306	116	128	314
12	303	220	550	600	320	260	3,350	862	303	116	125	300
13	300	220	500	550	320	260	2,580	710	468	176	130	240
14	300	280	460	500	300	280	2,120	635	514	422	130	160
15	292	320	440	480	300	280	1,850	612	440	347	132	212
16	282	260	440	460	300	300	2,140	532	498	268	132	300
17	320	220	460	420	300	320	4,900	488	492	208	130	419
18	396	200	500	380	300	420	3,640	476	400	177	128	448
19	448	200	500	380	300	550	2,910	448	466	155	125	360
20	420	190	440	360	300	500	3,570	420	1,180	148	125	296
21	392	200	408	340	300	480	2,600	424	997	140	121	265
22	380	320	404	340	320	420	2,130	504	710	132	116	282
23	485	628	388	360	340	380	2,150	586	568	128	116	334
24	620	612	370	440	340	360	2,170	536	480	125	116	456
25	590	500	360	480	320	340	2,730	484	436	123	118	441
26	430	432	360	440	320	320	2,020	456	396	125	121	380
27	380	432	360	420	300	460	1,680	448	362	168	123	362
28	396	420	340	380	300	1,400	1,540	424	338	339	123	416
29	404	392	340	360		1,600	1,330	388	278	562	123	452
30	348	1,630	320	340		1,600	1,210	359	230	451	128	476
31	359		320	320		1,500		348		359	130	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	620	278	359	0.984	1.13
November	1,630	190	409	1.12	1.25
December	3,360	320	745	2.04	2.35
January	1,000	320	520	1.42	1.64
February	340	260	304	.833	.87
March	1,600	260	548	1.50	1.73
April	4,900	1,210	2,480	6.79	7.58
May	1,210	348	649	1.78	2.05
June	1,130	220	431	1.18	1.32
July	562	116	199	.545	.63
August	306	116	141	.386	.44
September	476	132	306	.844	.94
The year	4,900	116	590	1.62	21.93

Middle Branch of Moose River at Old Forge, N. Y.

Location.- Staff gage in Old Forge, Herkimer County, 400 feet below State dam.

Drainage area.- 52 square miles.

Records available.- November 1911 to September 1934.

Average discharge.- 22 years (1912-34), 107 second-feet.

Extremes.- Maximum discharge during year, 330 second-feet Apr. 23 (gage height, 3.1 feet, from graph based on gage readings); minimum, 1.4 second-feet Sept. 13 (gage height, 0.14 foot).
1911-34: Maximum discharge, 862 second-feet Mar. 23, 1921; minimum, 0.7 second-foot Oct. 20-23, 1928 (gage height, 0.11 foot).

Remarks.- Records good. Stage-discharge relation affected by backwater Apr. 2-22. Flow regulated by storage in Fulton Chain of Lakes.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	9	22	22	50	178	14	149	91	3	103	69
2	158	9	22	23	49	178	14	115	91	3	34	69
3	158	9	23	23	48	169	14	104	91	3	2	87
4	158	16	23	23	48	169	14	42	81	3	2	97
5	158	18	23	23	63	92	16	9	54	3	2	97
6	158	18	21	23	97	13	24	8	43	3	2	146
7	158	18	21	23	97	13	30	8	43	3	2	169
8	158	20	21	60	97	12	34	8	19	3	2	169
9	172	20	22	80	119	12	38	8	2	3	9	169
10	187	20	22	80	138	12	42	8	2	3	12	169
11	187	20	22	80	138	12	46	8	2	3	17	169
12	187	20	22	80	138	12	50	8	2	3	25	125
13	187	20	22	74	138	12	120	9	2	4	25	103
14	187	20	21	80	142	13	170	9	2	5	25	169
15	178	20	21	74	153	14	170	9	2	6	25	221
16	178	22	21	74	153	14	160	9	23	6	25	255
17	178	22	22	80	153	14	180	32	37	5	25	167
18	178	20	22	80	153	14	200	43	44	5	25	124
19	178	20	22	74	153	14	220	31	84	5	25	124
20	187	20	22	74	146	14	240	25	123	5	25	124
21	187	20	22	74	165	14	260	25	124	5	25	136
22	187	20	22	57	187	14	280	25	145	5	25	153
23	187	20	22	48	187	14	309	26	153	5	24	153
24	153	20	22	48	187	13	307	38	146	4	37	153
25	80	20	22	48	178	13	296	56	146	4	43	153
26	80	20	22	48	178	13	264	65	131	4	41	153
27	80	20	22	48	178	14	220	69	124	18	44	167
28	49	22	22	48	178	14	206	69	84	80	54	206
29	11	21	22	48		14	196	74	58	110	55	196
30	10	20	22	48		14	168	91	20	110	66	196
31	10		22	50		14		97		117	74	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	187	10	145		
November	22	9	18.8		
December	23	21	21.9		
January	80	22	55.3		
February	187	48	133		
March	178	12	36.5		
April	309	14	145		
May	149	8	41.2		
June	153	2	65.6		
July	117	3	17.4		
August	103	2	29.0		
September	255	69	150		
The year	309	2	70.6	1.36	18.44

Note.- Net combined effect of storage in Old Forge and Sixth Lake reservoirs at beginning and end of year was practically zero. Annual discharge and run-off figures therefore require no correction for storage.

Middle Branch of Moose River near McKeever, N. Y.

Location.- Water-stage recorder half a mile above confluence of Middle and South Branches of Moose River and 1½ miles northeast of McKeever, Herkimer County.

Drainage area.- 148 square miles.

Records available.- October 1925 to September 1934.

Extremes.- Maximum discharge during year, 1,050 second-feet Apr. 17 (gage height, 5.14 feet); minimum, 47 second-feet Nov. 9, July 12 (gage height, 2.03 feet).
1925-34: Maximum discharge, 2,100 second-feet Apr. 27, 1926 (gage height, 6.6 feet); minimum, about 42 second-feet Aug. 26, 1931 (gage height, 1.98 feet).

Remarks.- Records good except those for periods of ice effect, Nov. 11-23, 27, 28, Dec. 9 to Apr. 4, which are fair. Flow partly regulated by storage in Fulton Chain of Lakes.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	199	98	390	170	150	200	400	560	204	92	199	99
2	197	92	480	260	150	200	480	480	201	74	158	99
3	194	94	496	240	140	240	550	370	206	64	106	99
4	192	101	540	200	140	280	650	328	206	60	78	119
5	192	104	500	190	140	300	692	256	186	56	65	147
6	194	99	456	170	170	240	715	243	159	53	62	157
7	213	91	422	160	190	180	765	262	140	53	59	194
8	215	83	390	170	180	160	765	262	131	53	56	275
9	213	54	320	220	170	150	740	245	112	53	56	278
10	232	64	260	260	200	130	715	262	119	52	57	235
11	240	75	220	260	220	120	765	259	114	50	58	230
12	238	70	200	240	200	100	865	254	117	48	59	235
13	235	65	180	240	200	100	920	243	135	56	63	147
14	230	80	160	240	200	110	1,000	235	128	91	70	102
15	230	90	150	220	200	110	975	218	123	122	70	180
16	225	80	150	220	200	120	975	192	146	111	68	269
17	251	70	160	220	220	130	1,000	197	153	96	65	335
18	262	70	170	200	220	200	948	210	153	84	61	246
19	259	65	170	190	220	220	975	206	184	75	59	186
20	256	60	150	180	220	200	1,030	192	245	73	56	165
21	256	65	140	170	200	180	1,030	186	299	68	53	171
22	254	80	140	160	240	160	1,030	197	289	67	53	212
23	281	120	140	150	240	150	1,000	218	292	62	54	240
24	273	138	130	170	220	140	975	230	284	61	55	232
25	232	125	130	200	200	130	920	222	273	63	59	222
26	173	122	130	190	200	140	865	220	262	65	64	215
27	159	130	130	180	200	220	815	228	240	83	70	225
28	165	130	120	170	200	420	740	220	228	120	73	256
29	126	131	120	160		400	670	208	177	188	80	281
30	91	256	120	160		320	625	192	130	218	83	287
31	98		120	150		340		199		210	91	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	281	91	212	1.43	1.65
November	256	54	96.7	.653	.73
December	540	120	238	1.61	1.86
January	260	150	197	1.33	1.53
February	240	140	194	1.31	1.36
March	420	100	196	1.32	1.52
April	1,030	400	820	5.54	6.18
May	560	186	251	1.70	1.96
June	292	112	188	1.27	1.42
July	218	48	84.5	.571	.66
August	199	53	72.9	.493	.57
September	335	99	205	1.39	1.55
The year	1,030	48	229	1.55	20.99

Independence River at Sperryville, N. Y.

Location.- Staff gage half a mile above highway bridge at Sperryville, Lewis County, and 9½ miles east of Lowville.

Drainage area.- 85 square miles.

Records available.- December 1927 to September 1934.

Extremes.- Maximum discharge during year, 975 second-feet Apr. 12; maximum gage height, 4.9 feet Dec. 1, from graph based on gage readings; minimum discharge, 14 second-feet Aug. 31 to Sept. 2 (gage height, 0.88 foot).
1927-34: Maximum discharge, 4,700 second-feet Oct. 6, 1932 (gage height, 9.2 feet); minimum, that of Aug. 31 to Sept. 2, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 10-25, Nov. 30 to Dec. 1, Dec. 10 to Mar. 29, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	103	700	140	70	30	571	202	50	27	24	14
2	28	114	491	260	65	32	802	191	46	24	22	14
3	26	115	313	320	55	60	825	170	41	23	21	15
4	25	121	238	320	50	110	848	159	145	22	23	20
5	24	102	250	260	46	200	752	140	103	22	22	29
6	22	79	250	220	44	280	735	131	74	22	20	31
7	21	67	274	190	42	280	648	122	70	30	18	24
8	20	59	236	220	40	260	566	116	53	36	18	23
9	20	47	134	240	38	220	566	106	43	30	17	22
10	19	44	100	220	38	170	598	129	88	25	17	22
11	20	42	85	170	36	130	691	194	120	22	17	20
12	20	40	75	130	36	100	940	159	97	20	17	18
13	20	42	70	110	38	85	714	131	140	151	17	18
14	20	50	65	110	38	85	490	131	131	177	18	18
15	19	65	65	100	36	95	405	131	112	74	18	18
16	19	55	70	90	34	75	447	111	114	45	18	18
17	28	50	75	85	32	80	788	98	94	33	17	36
18	65	46	90	75	34	140	742	91	73	29	16	52
19	70	42	95	70	34	220	571	82	91	25	16	37
20	57	38	90	70	32	260	556	79	195	22	17	29
21	47	38	85	65	32	240	486	88	150	22	18	25
22	45	65	85	80	32	200	359	116	109	20	17	23
23	70	120	80	110	32	170	288	188	78	19	17	25
24	95	110	75	140	32	140	330	170	58	19	17	28
25	108	100	80	120	32	120	472	131	49	19	16	28
26	92	99	70	110	30	100	374	106	41	19	16	24
27	76	121	65	90	30	160	316	88	37	22	15	23
28	87	147	65	85	30	260	302	81	35	56	15	38
29	95	152	60	85		360	262	73	32	84	15	40
30	79	360	60	75		432	225	64	29	44	15	39
31	79		60	65		365		55		30	14	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	108	19	46.5	0.547	0.63
November	360	38	87.8	1.03	1.15
December	700	60	147	1.73	1.99
January	320	65	143	1.68	1.94
February	70	30	38.9	.458	.48
March	432	30	176	2.07	2.39
April	940	225	556	6.54	7.30
May	202	55	124	1.46	1.68
June	195	29	83.3	.980	1.09
July	177	19	39.1	.460	.53
August	24	14	17.7	.208	.24
September	52	14	25.7	.302	.34
The year	940	14	124	1.46	19.76

Beaver River below Stillwater Dam, near Beaver River, N. Y.

Location.- Staff gage at Stillwater Dam, at outlet of Beaver River Flow, 7⅛ miles west of Beaver River post office, Herkimer County.

Drainage area.- 172 square miles.

Records available.- May 1908 to September 1934.

Average discharge.- 26 years, 361 second-feet.

Extremes.- 1908-34: Maximum discharge, 3,700 second-feet May 3, 1926; practically no flow at times when gates in dam are closed and there is no spilling.

Remarks.- Records good. Flow regulated by storage in Stillwater Reservoir. Discharge determined from Stillwater Dam gate and spillway ratings. Record of gate openings and reservoir elevations furnished by Black River Regulating District.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	455	10	10	450	285	10	14	290	14	475	440
2	370	470	10	345	450	248	10	14	290	305	475	435
3	540	470	10	520	320	100	10	14	290	360	470	435
4	540	335	154	520	10	7	10	14	365	198	470	435
5	530	10	208	520	295	7	11	14	400	530	470	435
6	530	320	88	355	440	8	11	14	400	530	470	435
7	400	465	10	10	440	8	11	14	400	410	470	370
8	10	460	10	325	435	8	11	14	400	80	465	410
9	305	460	10	485	540	8	12	14	300	440	465	485
10	455	455	10	485	620	8	12	14	14	610	465	445
11	450	320	242	485	610	8	12	14	350	610	465	420
12	465	9	395	485	600	8	12	14	500	540	465	420
13	470	280	395	480	590	8	12	14	228	14	460	420
14	345	405	395	480	580	9	12	142	14	176	460	415
15	10	400	395	480	570	9	13	208	14	490	460	415
16	315	400	275	475	560	9	13	208	14	490	455	415
17	152	400	10	475	520	9	13	208	14	490	455	415
18	154	270	265	470	485	9	13	208	194	485	455	415
19	425	9	395	470	470	9	13	208	425	485	455	410
20	700	265	395	325	460	9	13	208	420	485	455	405
21	530	395	390	10	445	9	13	270	365	485	455	405
22	10	390	390	390	430	9	13	440	14	485	450	405
23	315	236	265	580	415	9	13	510	14	485	450	405
24	450	9	10	580	400	9	13	385	14	480	450	400
25	232	9	10	510	385	9	13	14	250	480	445	400
26	10	9	300	460	365	9	13	14	420	480	445	400
27	10	270	445	315	340	9	13	14	420	480	445	400
28	10	365	445	10	315	9	13	200	420	480	440	395
29	10	234	440	305		10	14	290	420	480	440	395
30	246	9	305	460		10	14	290	320	480	440	390
31	430		10	455		10		290		475	440	

Month	Observed			Corrected for storage		
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches
October	700	10	304	117	0.680	0.78
November	470	9	286	245	1.42	1.58
December	445	10	216	358	2.08	2.40
January	580	10	396	307	1.78	2.05
February	620	10	448	82	.477	.50
March	285	7	28.3	366	2.13	2.46
April	14	10	12.2	1,091	6.34	7.07
May	510	14	138	266	1.55	1.79
June	500	14	266	140	.814	.91
July	610	14	420	125	.727	.84
August	475	440	457	63	.366	.42
September	485	370	416	104	.605	.68
The year	700	7	281	272	1.58	21.48

Note.- Midnight elevation of water surface in Stillwater Reservoir was 1,664.33 feet Sept. 30, 1933, and 1,662.35 feet Sept. 30, 1934. Corrections for storage based on data furnished by Black River Regulating District.

Beaver River at Croghan, N. Y.

Location.- Water-stage recorder about 1,000 feet above Black Creek and half a mile west of Croghan, Lewis County.

Drainage area.- 294 square miles (revised).

Records available.- September 1930 to September 1934.

Extremes.- Maximum discharge during year, 1,460 second-feet Apr. 13 (gage height, 4.00 feet); minimum, 20 second-feet July 8 (gage height, 0.91 foot); minimum daily discharge, 35 second-feet May 13.
1930-34: Maximum discharge, 3,390 second-feet Apr. 19, 1933 (gage height, 5.80 feet); minimum, that of July 8, 1934; minimum daily discharge, that of May 13, 1934.

Remarks.- Records excellent except those estimated, Feb. 9, 10, 14-17, which are good. Flow of Beaver River was completely regulated during year at Stillwater Dam. Between Stillwater Dam and this station flow is further regulated by operation of nine power plants.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	164	414	842	454	646	436	530	407	290	78	572	419
2	482	433	681	552	776	468	606	401	164	295	734	108
3	578	434	525	598	636	422	467	376	76	460	517	200
4	580	214	508	532	278	316	535	382	238	336	252	519
5	706	90	446	659	616	728	460	238	340	386	100	700
6	618	369	404	585	738	702	610	60	403	584	500	522
7	254	444	488	299	582	554	345	202	422	390	678	611
8	76	444	569	613	578	460	152	362	526	103	486	284
9	292	524	304	608	555	432	610	363	246	262	630	184
10	647	664	228	670	244	234	916	381	87	514	620	462
11	732	268	516	572	134	94	549	383	294	556	225	604
12	600	72	648	562	633	369	974	102	518	555	104	468
13	478	490	558	514	708	430	1,060	35	633	502	610	434
14	300	458	624	288	690	490	680	149	389	259	661	554
15	119	473	660	538	560	493	356	364	382	115	672	314
16	440	492	396	590	520	467	684	368	214	522	640	132
17	462	446	355	637	188	216	989	338	155	516	504	353
18	428	256	492	569	118	151	809	306	416	611	218	558
19	416	66	494	640	536	327	773	146	470	655	116	448
20	412	252	452	748	482	418	868	72	394	659	570	422
21	242	420	464	523	592	599	390	156	377	572	597	503
22	72	450	481	746	750	528	189	284	373	313	597	356
23	262	421	356	769	607	524	514	298	242	576	618	136
24	427	288	376	667	234	202	626	272	90	517	476	521
25	507	174	311	694	44	59	715	259	278	360	284	479
26	457	80	453	677	284	222	680	178	473	364	110	474
27	428	380	602	608	457	762	619	67	496	442	413	390
28	250	444	742	450	450	525	303	104	520	356	571	378
29	74	526	656	586		448	140	244	456	165	704	229
30	224	530	666	682		484	302	312	240	420	488	198
31	416		243	735		351		264		632	588	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	732	72	392		
November	664	66	367		
December	842	228	501		
January	769	288	592		
February	816	44	494		
March	762	59	416		
April	1,060	140	582		
May	407	35	254		
June	633	76	340		
July	659	78	422		
August	734	100	479		
September	700	108	399		
The year	1,060	35	436	1.48	20.15

Note.- For effect of Stillwater Reservoir regulation of flow see Beaver River below Stillwater Dam, near Beaver River, N. Y.

Deer River at Copenhagen, N. Y.

Location.- Water-stage recorder at power plant half a mile northeast of Copenhagen, Lewis County.

Drainage area.- 89 square miles (revised).

Records available.- September 1929 to September 1934.

Extremes.- Maximum discharge during year, 2,890 second-feet 8 a.m., Jan. 1 (gage height, 7.30 feet); maximum gage height (ice jam), 9.27 feet 6 a.m., Jan. 1; minimum discharge, 0.9 second-foot Aug. 15; minimum daily discharge, 1.0 second-foot Aug. 13-15.

1929-34: Maximum discharge, about 4,500 second-feet Jan. 8, 1930 (gage height, 9.3 feet); minimum, 0.8 second-foot July 22 to Aug. 2, 1933.

Remarks.- Records good. Stage-discharge relation affected by ice Nov. 17-20, Dec. 10-16, Dec. 26 to Jan. 4, Jan. 18-25, Jan. 30 to Feb. 3, Feb. 9-11, Feb. 24 to Mar. 4. Diurnal fluctuation caused by operation of power plant.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	120	890	1,400	75	24	1,370	162	28	7.4	*1.3	1.7
2	23	101	429	400	60	26	1,160	135	26	7.4	*1.3	*1.7
3	25	145	326	300	55	240	1,160	115	19	7.4	*1.3	1.5
4	23	182	467	260	50	500	1,170	96	17	8.4	*1.3	1.5
5	17	114	432	255	44	855	989	*85	18	7.0	*1.1	1.4
6	12	80	553	339	41	637	960	*75	19	7.4	2.3	2.1
7	12	69	416	339	37	412	866	*70	16	13	1.4	1.7
8	10	67	284	421	35	327	690	*65	15	9.0	1.1	2.6
9	11	63	136	361	34	273	690	*60	16	9.0	1.1	4.4
10	12	71	75	252	32	223	690	*95	64	8.6	3.6	7.8
11	11	47	55	175	30	182	1,170	*130	69	8.6	1.1	9.5
12	12	69	44	153	32	141	1,150	*95	70	8.6	1.1	4.7
13	18	85	40	137	32	131	680	*75	115	7.2	*1.0	3.5
14	24	143	38	119	33	254	596	*80	94	2.6	1.0	2.9
15	21	120	36	108	29	252	608	*85	59	2.0	1.0	4.3
16	20	106	90	96	32	225	683	*85	52	5.1	1.1	4.5
17	80	100	104	85	30	253	705	*80	45	5.4	2.1	7.2
18	141	95	157	75	29	910	503	*55	33	3.6	2.4	20
19	158	90	145	65	29	487	472	*44	58	2.6	*2.6	19
20	112	90	120	55	29	462	460	*38	122	2.7	*3.5	17
21	93	90	90	48	28	357	322	*65	59	3.0	9.4	7.9
22	76	654	76	50	27	242	*247	*90	34	1.4	3.4	1.8
23	150	502	72	160	26	144	261	*170	25	2.1	3.4	1.8
24	122	342	154	300	26	110	591	*120	18	2.2	2.4	3.3
25	142	236	408	360	26	93	513	*80	15	1.8	2.1	4.5
26	106	257	200	309	26	80	356	*65	15	1.9	*2.0	4.8
27	106	408	140	218	24	583	510	*52	14	1.6	2.0	4.8
28	236	304	110	180	24	530	370	50	16	2.1	2.0	6.7
29	152	422	90	137		510	279	28	16	*1.6	1.8	8.2
30	113	1,920	75	110		458	207	25	7.8	*1.5	1.8	9.5
31	135		70	90		458		30		*1.4	1.7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	236	10	70.7	0.794	0.92
November	1,920	47	236	2.65	2.96
December	890	36	204	2.29	2.64
January	1,400	48	238	2.67	3.08
February	75	24	34.8	.391	.41
March	910	24	335	3.76	4.34
April	1,370	207	681	7.65	8.54
May	170	25	80.6	.906	1.04
June	122	7.8	39.2	.440	.49
July	13	1.4	4.95	.056	.06
August	9.4	1.0	2.09	.023	.03
September	20	1.4	5.74	.064	.07
The year	1,920	1.0	151	1.81	24.58

*Estimated.

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East Branch of Oswegatchie River at Cranberry Lake, N. Y.

Location.- Staff gage 850 feet below dam at outlet of Cranberry Lake, in village of Cranberry Lake, St. Lawrence County.

Drainage area.- 144 square miles.

Records available.- May 1923 to September 1934.

Average discharge.- 11 years, 314 second-feet.

Extremes.- Maximum daily discharge during year, 325 second-feet Apr. 30 to May 4; minimum, 119 second-feet Dec. 24 to Jan. 10.
1923-34: Maximum daily discharge, 1,820 second-feet Apr. 17-20, 1933; minimum occurs when gates in dam are closed and there is no discharge over spillway.

Remarks.- Records good except those estimated, Aug. 12-19, 30, which are fair. Flow completely regulated at Cranberry Lake Dam.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	213	181	153	119	181	213	213	325	202	213	213	202
2	213	181	153	119	181	213	224	325	202	213	213	202
3	213	181	153	119	181	213	224	325	202	213	213	202
4	213	181	153	119	181	213	224	325	202	213	213	202
5	202	181	144	119	191	221	224	302	202	213	213	202
6	202	181	144	119	201	224	236	285	202	213	213	202
7	202	181	144	119	202	224	236	285	202	213	213	202
8	202	172	144	119	202	224	236	268	202	213	213	202
9	202	162	144	119	202	224	223	236	205	213	213	202
10	202	162	144	119	202	224	213	236	213	213	213	200
11	202	162	144	127	211	224	213	236	213	213	213	192
12	202	162	144	127	224	224	213	236	213	213	200	192
13	202	162	144	127	224	224	224	236	213	213	200	192
14	202	162	136	127	224	224	224	236	213	213	220	192
15	202	162	127	157	224	224	224	236	213	213	245	192
16	202	162	127	178	224	224	224	236	213	213	240	192
17	202	162	127	192	224	224	236	236	213	213	240	192
18	202	162	127	192	224	214	236	236	213	213	170	192
19	192	153	127	181	224	202	236	236	213	213	230	192
20	192	153	127	181	224	202	199	236	213	202	202	192
21	192	153	127	181	224	202	192	214	213	189	202	192
22	192	153	127	181	224	202	192	202	213	202	202	192
23	192	144	127	181	224	202	192	202	213	202	202	192
24	192	144	119	181	224	202	192	202	213	213	202	192
25	192	144	119	192	224	202	192	202	213	213	202	192
26	192	144	119	192	224	213	192	202	213	213	202	192
27	192	144	119	192	213	213	202	202	213	213	202	192
28	192	144	119	192	213	213	202	202	213	213	192	192
29	192	144	119	181		213	286	202	213	213	192	181
30	192	153	119	181		213	325	202	213	213	200	181
31	192		119	181		213		202		213	202	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	213	192	199		
November	181	144	161		
December	153	119	134		
January	192	119	155		
February	224	181	211		
March	224	202	215		
April	325	192	222		
May	325	202	242		
June	213	202	210		
July	213	189	211		
August	245	170	209		
September	202	181	195		
The year	325	119	197	1.37	18.57

Note.- Elevation of water surface in Cranberry Lake Reservoir was practically same at end of year as at beginning of year, indicating no net loss or gain in storage.

East Branch of Oswegatchie River near Oswegatchie, N. Y.

Location.- Water-stage recorder at Flat Rock hydroelectric plant of Northern New York Utilities, Inc., 2¼ miles north of Oswegatchie, St. Lawrence County.

Drainage area.- 263 square miles (revised).

Records available.- October 1924 to September 1934.

Extremes.- Maximum discharge during year, 1,940 second-feet Apr. 15 (gage height, 5.43 feet); minimum, 23 second-feet May 19 (gage height, 1.32 feet); minimum daily discharge, 139 second-feet May 19.

1924-34: Maximum discharge, 4,010 second-feet Apr. 6, 1928 (gage height, 7.1 feet); minimum, probably less than 1 second-foot during complete shut-down of power plant; minimum daily discharge, 1 second-foot July 25, 1926.

Remarks.- Records good except those estimated Nov. 2-7, Aug. 29 to Sept. 1, Sept. 9-12, 19-22, 29, 30, which are fair. Large diurnal fluctuation caused by operation of power plant; seasonal flow partly regulated by storage in Cranberry Lake.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	463	841	438	421	378	736	741	418	225	274	162
2	336	330	496	474	325	408	1,050	846	150	209	339	199
3	404	425	448	343	260	212	1,120	647	196	259	207	153
4	283	140	360	377	216	293	1,230	641	162	188	160	200
5	271	230	397	478	228	586	1,020	316	213	202	197	312
6	233	320	578	265	445	706	1,010	213	270	228	142	340
7	212	204	396	203	306	576	653	256	299	272	220	198
8	198	406	453	459	456	442	521	525	326	204	366	195
9	182	431	304	499	328	452	864	828	152	178	244	206
10	321	216	195	499	173	331	880	179	204	264	212	164
11	320	209	206	417	213	313	937	607	190	236	190	260
12	292	202	231	247	391	464	1,190	226	303	375	186	300
13	298	207	278	276	837	459	1,080	189	563	356	222	362
14	231	433	305	228	274	491	939	201	588	367	201	216
15	185	343	342	277	336	452	799	421	345	242	261	176
16	149	232	162	217	200	354	1,070	591	177	251	251	197
17	397	340	206	305	200	258	1,020	602	193	408	176	220
18	359	187	161	446	221	574	941	470	269	363	202	259
19	270	199	251	376	174	558	906	139	217	398	194	250
20	325	178	385	168	315	680	822	201	295	392	221	370
21	288	296	300	225	234	700	487	319	308	167	229	260
22	197	284	253	343	268	637	493	480	231	206	338	184
23	236	291	195	421	306	560	698	584	198	155	322	191
24	476	334	202	373	200	632	655	560	191	235	283	160
25	393	200	204	286	223	204	771	573	356	295	163	210
26	283	227	251	352	360	313	590	191	326	252	196	357
27	338	241	381	365	303	668	713	197	410	302	208	234
28	250	411	451	205	412	686	524	355	311	162	336	443
29	216	447	285	322		912	367	498	280	196	290	214
30	347	615	256	347		731	521	418	233	142	340	206
31	313		199	434		703		360		179	230	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	476	149	284		
November	615	140	301		
December	841	161	322		
January	499	168	344		
February	837	173	306		
March	912	204	508		
April	1,230	367	820		
May	846	139	431		
June	588	150	279		
July	408	142	255		
August	366	142	239		
September	443	153	240		
The year	1,230	139	361	1.37	18.61

Oswegatchie River near Heuvelton, N. Y.

Location.- Water-stage recorder 2½ miles above Heuvelton, St. Lawrence County.

Drainage area.- 973 square miles (revised).

Records available.- June 1916 to September 1934.

Average discharge.- 18 years, 1,731 second-feet.

Extremes.- Maximum discharge during year, 8,770 second-feet Apr. 5 (gage height, 6.39 feet); minimum, 200 second-feet Aug. 18 (gage height, 0.65 foot).
1916-34: Maximum discharge, 15,600 second-feet Jan. 11, 1930 (gage height, 9.1 feet); minimum, that of Aug. 18, 1934.

Remarks.- Records excellent except those for period of ice effect, Dec. 12 to Mar. 3, and those estimated, which are fair. Seasonal flow slightly regulated by storage in Cranberry Lake; slight diurnal fluctuation caused by power operations.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	533	577	2,350	1,000	*900	420	5,170	2,400	712	471	286	310
2	466	622	2,550	*2,600	*900	600	7,680	2,260	704	391	301	331
3	403	671	2,780	*2,200	*900	1,100	8,330	2,260	663	336	291	296
4	379	622	2,780	*1,900	*800	3,920	7,890	2,060	562	346	272	291
5	465	600	2,620	*1,700	650	5,020	7,670	1,870	465	352	291	320
6	484	554	2,330	1,900	*500	5,600	7,670	1,630	465	326	315	277
7	397	491	2,200	2,800	*500	5,400	6,820	1,340	408	374	272	250
8	374	526	2,130	2,600	*500	4,470	5,800	1,270	408	346	291	246
9	346	519	1,860	2,600	*500	3,580	5,020	1,150	433	331	272	282
10	301	562	1,380	2,400	*500	2,550	4,470	1,320	478	346	254	326
11	301	679	1,080	2,200	*550	1,880	4,290	1,700	491	420	246	301
12	296	*554	850	2,000	*500	1,480	4,470	1,810	420	385	272	320
13	310	452	700	1,700	*460	1,330	5,020	1,430	446	362	282	291
14	362	403	600	1,500	420	1,680	5,400	1,030	452	336	263	291
15	357	*408	550	1,300	600	2,060	5,400	938	700	397	272	310
16	346	519	600	1,100	*800	2,000	5,020	890	994	526	263	379
17	346	592	800	1,000	650	2,060	4,740	1,050	863	533	229	362
18	368	484	950	900	480	2,820	4,560	1,170	671	505	212	336
19	357	*547	1,100	850	420	3,540	4,380	1,170	630	533	310	362
20	420	526	950	*800	380	3,300	4,120	1,060	630	577	305	305
21	478	452	850	*800	*380	2,920	3,860	782	607	505	268	305
22	526	526	900	700	*380	2,700	3,460	730	655	465	301	352
23	465	*592	850	1,000	*380	2,400	2,920	738	704	452	263	357
24	478	747	700	2,400	*440	2,060	2,850	956	671	385	268	331
25	505	774	650	2,200	*440	1,730	3,300	1,100	491	352	263	331
26	638	845	650	2,200	380	1,470	3,380	1,130	452	296	310	346
27	747	774	*650	2,000	380	1,590	3,300	976	498	291	296	320
28	738	774	*700	1,700	380	2,920	3,150	747	540	301	282	301
29	721	774	*800	*1,500		3,460	3,080	655	540	315	315	357
30	592	1,350	*850	*1,200		3,300	2,780	671	540	341	282	408
31	562		*800	1,100		3,220		800		301	259	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	747	296	454	0.467	0.54
November	1,350	403	617	.634	.71
December	2,780	550	1,276	1.31	1.51
January	2,800	700	1,673	1.72	1.98
February	900	380	538	.553	.58
March	5,600	420	2,664	2.74	3.16
April	8,330	2,780	4,867	5.00	5.58
May	2,400	655	1,261	1.30	1.50
June	994	408	576	.592	.66
July	577	291	393	.404	.47
August	315	212	278	.286	.33
September	408	246	320	.329	.37
The year	8,330	212	1,245	1.28	17.39

*Estimated.

West Branch of Oswegatchie River near Harrisville, N. Y.

Location.- Water-stage recorder at highway bridge half a mile northeast of Geers Corner and 4 miles below Harrisville, Lewis County. Prior to Nov. 30, 1933, staff gage at same location.

Drainage area.- 258 square miles (revised).

Records available.- July 1916 to September 1934.

Average discharge.- 18 years, 526 second-feet.

Extremes.- Maximum discharge during year, 2,630 second-feet Apr. 2 (gage height, 5.95 feet); minimum, 25 second-feet Sept. 1 (gage height, 0.86 foot).
1916-34: Maximum discharge, 6,920 second-feet Jan. 9, 1930 (gage height, 9.6 feet); minimum, that of Sept. 1, 1934.

Remarks.- Records good except those prior to Nov. 30, and those for periods when stage-discharge relation was affected by ice, Nov. 16-21, Dec. 10-15, Dec. 25 to Jan. 1, Jan. 16-20, Jan. 29 to Feb. 10, Mar. 3-6, which are fair. Dirunal fluctuations, principally during low flow, caused by pondage regulation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	140	1,410	420	220	109	1,620	818	161	78	44	27
2	100	176	1,520	790	220	112	2,530	730	155	76	43	29
3	100	166	1,400	930	180	150	2,340	658	145	71	44	30
4	106	208	1,120	900	170	340	2,240	600	136	66	42	36
5	108	206	872	790	160	650	2,060	545	126	65	38	40
6	100	176	735	735	150	850	1,980	498	128	65	38	44
7	82	157	762	674	150	872	1,760	466	118	85	36	45
8	71	93	735	664	140	818	1,600	444	103	102	35	45
9	63	126	575	652	140	735	1,480	403	110	90	34	47
10	65	108	*480	625	130	674	1,440	403	125	85	35	51
11	66	108	*380	560	128	535	1,440	458	148	69	36	45
12	67	115	*280	484	123	440	1,760	440	150	66	35	43
13	62	92	*240	427	123	384	2,200	387	200	77	33	46
14	60	140	*200	376	129	411	1,930	395	322	136	36	46
15	58	115	190	343	123	407	1,600	419	299	186	38	46
16	61	110	203	320	121	399	1,440	387	280	168	40	45
17	68	100	226	280	118	399	1,560	250	256	140	44	50
18	100	100	282	*260	117	674	1,720	322	222	128	38	59
19	148	100	281	*240	117	790	1,600	282	194	84	29	67
20	140	100	280	*220	117	845	1,480	274	292	85	34	67
21	123	100	277	204	117	818	1,360	257	319	89	35	61
22	115	108	251	213	118	686	1,220	271	271	67	40	60
23	123	191	220	278	118	545	1,050	322	212	66	34	59
24	166	306	218	372	117	440	960	365	178	59	36	62
25	197	289	200	399	115	376	1,050	340	170	60	33	60
26	289	259	200	423	115	309	1,150	312	116	56	31	60
27	246	246	190	376	115	476	1,120	257	103	54	33	71
28	197	259	180	354	110	738	1,120	233	108	53	34	68
29	232	259	170	340		930	1,080	218	100	51	37	67
30	220	656	170	300		990	960	172	89	48	38	66
31	186		170	260		990		174		45	40	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	289	58	123	0.477	0.55
November	656	93	178	.690	.77
December	1,520	170	465	1.80	2.08
January	930	204	458	1.78	2.05
February	220	110	136	.527	.55
March	990	109	577	2.24	2.58
April	2,530	960	1,562	6.05	6.75
May	818	172	394	1.53	1.76
June	322	89	178	.690	.77
July	186	45	82.9	.321	.37
August	44	29	36.9	.143	.16
September	71	27	51.4	.199	.22
The year	2,530	27	354	1.37	18.61

*Estimated.

Grass River at Pyrites, N. Y.

Location.- Water-stage recorder 1,000 feet below lower bridge in Pyrites, St. Lawrence County, and half a mile above mouth of Harrison Creek.

Drainage area.- 335 square miles (revised).

Records available.- August 1924 to September 1934.

Average discharge.- 10 years, 602 second-feet.

Extremes.- Maximum discharge during year, 4,420 second-feet Apr. 1 (gage height, about 8.65 feet); minimum, 38 second-feet Oct. 13 (gage height, 1.00 foot); minimum daily discharge, 59 second-feet Aug. 29 to Sept. 1.
1924-34: Maximum discharge, about 8,300 second-feet Nov. 18, 1927 (gage height, 13.0 feet); minimum, 37 second-feet July 15, 1933; minimum daily discharge, that of Aug. 29 to Sept. 1, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 10-29, Dec. 9 to Mar. 31, which are fair. Occasional diurnal fluctuations from power operations.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	230	1,560	*750	280	120	3,930	902	196	106	74	59
2	167	243	1,250	*1,100	260	130	4,180	820	187	101	71	60
3	169	243	923	*800	220	220	3,380	770	176	92	76	66
4	162	256	754	*650	200	600	2,810	720	170	91	87	77
5	143	280	712	*600	190	850	2,290	670	164	89	92	86
6	130	240	735	*600	180	1,000	2,220	640	176	129	89	95
7	122	204	775	*650	170	900	2,020	625	238	466	81	95
8	114	190	700	*750	160	700	1,940	635	277	484	77	89
9	112	179	500	*700	160	550	1,940	585	234	318	73	94
10	108	170	380	650	150	480	1,970	565	247	198	70	108
11	112	150	320	600	150	420	2,140	655	312	146	67	112
12	114	140	280	550	140	380	2,970	635	310	138	65	99
13	115	170	*260	500	150	340	2,910	551	274	193	65	99
14	108	220	*240	440	150	400	2,260	517	393	292	65	105
15	105	200	*220	400	140	500	1,840	536	503	212	67	106
16	104	180	*240	380	140	420	1,630	499	504	151	73	99
17	112	160	*260	340	140	440	1,840	444	383	123	71	112
18	141	150	*320	300	140	900	1,910	413	291	106	70	154
19	198	140	*300	280	130	1,000	1,730	382	350	101	68	156
20	177	130	*300	260	130	950	1,640	355	478	144	68	131
21	157	140	*280	260	130	750	1,460	346	520	216	67	112
22	157	180	*260	260	130	*600	1,250	360	378	196	67	105
23	174	380	*240	300	130	*480	1,040	418	280	146	65	101
24	229	360	*220	360	130	*400	1,140	436	206	112	62	106
25	266	340	*220	480	130	*340	1,530	377	170	99	63	105
26	243	300	*200	500	120	*300	1,520	329	146	94	62	101
27	216	300	*190	440	120	650	1,370	288	136	89	62	105
28	240	280	*180	420	120	1,200	1,370	280	127	86	60	105
29	283	300	*190	360		1,000	1,220	265	123	81	59	116
30	259	812	*170	320		900	1,040	250	110	77	59	141
31	230		*170	300		850		215		74	59	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	283	104	166	0.496	0.57
November	812	130	242	.722	.81
December	1,560	170	430	1.28	1.48
January	1,100	260	494	1.47	1.70
February	280	120	157	.469	.49
March	1,200	120	605	1.81	2.09
April	4,180	1,040	2,016	6.02	6.72
May	902	215	499	1.49	1.72
June	578	110	272	.812	.91
July	484	74	160	.478	.55
August	92	59	69.5	.207	.24
September	156	59	103	.307	.34
The year	4,180	59	434	1.30	17.62

*Estimated.

Raquette River at Piercefield, N. Y.

Location.- Water-stage recorder half a mile below dam of International Paper Co. at Piercefield, St. Lawrence County.

Drainage area.- 722 square miles (revised).

Records available.- August 1908 to September 1934.

Average discharge.- 26 years, 1,296 second-feet.

Extremes.- Maximum discharge during year, 4,900 second-feet Apr. 21 (gage height, 9.81 feet); minimum, 69 second-feet Sept. 30 (gage height, 1.96 feet); minimum daily discharge, 70 second-feet Sept. 30.
1908-34: Maximum discharge, 7,580 second-feet Apr. 17, 1922 (gage height, 11.8 feet); minimum, about 10 second-feet Sept. 2, 1913 (gage height, 0.85 foot); minimum daily discharge, 11 second-feet Sept. 2, 1913.

Remarks.- Records excellent except those estimated Oct. 1-14, 30, Nov. 12, 13, Feb. 3-17, 24-28, which are good. Large diurnal fluctuation caused by operation of paper mill. Seasonal distribution of flow appreciably regulated by natural storage in lakes and ponds above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	196	290	394	604	587	324	1,070	3,740	415	570	218	769
2	253	285	474	622	587	326	1,240	3,570	506	521	210	569
3	292	280	554	658	587	360	1,410	3,460	554	459	205	423
4	287	188	677	715	587	360	1,590	3,460	554	430	199	650
5	285	111	990	715	587	374	1,800	3,400	554	405	194	664
6	285	233	1,420	755	604	274	1,980	3,250	570	338	192	475
7	285	340	1,390	776	604	258	2,140	3,150	570	285	190	579
8	200	391	1,320	776	604	226	2,280	3,010	570	249	187	564
9	236	267	1,240	797	604	251	2,460	2,950	604	240	185	369
10	302	267	1,170	818	622	314	2,700	2,850	1,040	251	181	416
11	264	180	1,070	840	622	360	2,960	2,720	1,990	299	180	415
12	264	114	975	818	622	387	3,430	2,580	1,600	360	174	370
13	262	373	885	818	604	415	3,750	2,490	1,260	459	171	320
14	271	324	840	797	604	459	3,990	2,400	960	505	171	401
15	176	349	829	797	604	490	4,070	2,260	459	570	164	365
16	187	309	818	776	587	505	4,210	2,140	490	570	156	172
17	280	304	797	755	570	521	4,350	2,060	570	537	146	158
18	287	255	797	735	554	554	4,470	1,900	604	521	141	240
19	276	242	797	735	537	570	4,630	1,860	622	459	146	216
20	271	249	797	715	521	587	4,760	1,800	658	459	152	206
21	247	244	776	696	505	604	4,820	1,720	677	430	153	297
22	201	242	735	677	474	622	4,890	1,620	696	387	140	220
23	264	410	706	677	459	622	4,760	1,520	696	334	124	81
24	307	438	677	677	444	622	4,690	1,400	686	290	125	319
25	311	484	677	677	415	622	4,580	1,170	668	274	127	278
26	295	369	658	677	387	640	4,500	1,320	651	258	124	303
27	292	269	622	658	374	696	4,380	716	658	244	127	180
28	234	267	587	640	347	755	4,260	590	640	247	147	328
29	182	276	570	640		818	4,140	773	622	238	185	224
30	236	344	564	622		885	3,900	506	582	232	216	70
31	312		554	604		975		401		226	611	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	312	176	259	0.359	0.41
November	484	111	290	.402	.45
December	1,420	394	818	1.13	1.30
January	840	604	718	.994	1.15
February	622	347	543	.752	.78
March	975	226	509	.705	.81
April	4,890	1,070	3,474	4.81	5.37
May	3,740	401	2,154	2.98	3.44
June	1,990	415	724	1.00	1.12
July	570	226	376	.521	.60
August	611	124	182	.252	.29
September	769	70	355	.492	.55
The year	4,890	70	866	1.20	16.27

St. Regis River at Brasher Center, N. Y.

Location.- Water-stage recorder 600 feet above highway bridge at Brasher Center, St. Lawrence County, and 6½ miles below junction of East and West Branches at Winthrop.

Drainage area.- 616 square miles.

Records available.- August 1910 to November 1917, January 1919 to September 1934.

Average discharge.- 21 years (1910-13, 1914-17, 1919-34), 1,097 second-feet.

Extremes.- Maximum discharge during year, 6,060 second-feet Apr. 2 (gage height, about 9.5 feet); minimum, 94 second-feet Aug. 13 (gage height, 5.62 feet).
1910-17, 1919-34: Maximum discharge recorded, about 16,200 second-feet Mar. 27, 1914 (gage height, 9.1 feet, old datum); minimum, about 34 second-feet Aug. 8, 1917 (gage height, 5.25 feet).

Remarks.- Records good except those for periods of ice effect, Nov. 10-29, Dec. 9 to Mar. 31, and those estimated, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	264	399	*2,800	*1,300	*600	*220	*5,500	1,760	320	298	141	*110
2	277	442	*2,200	*1,900	*550	*240	*6,000	1,580	328	291	161	*112
3	277	486	*1,700	*1,500	*500	*420	*5,500	1,480	305	270	161	*114
4	264	486	*1,400	*1,200	*460	*1,100	*5,000	1,290	298	243	151	*130
5	327	532	*1,300	*1,100	*420	*1,700	*4,600	1,190	298	206	136	*140
6	426	467	*1,300	*1,100	*400	2,000	*4,000	1,060	284	182	141	*155
7	243	*382	*1,400	*1,200	*380	1,900	4,170	1,130	270	194	146	*155
8	224	*359	*1,300	1,300	*360	1,600	4,400	1,220	344	230	141	*145
9	224	*336	*950	1,200	*340	1,400	4,360	1,180	264	363	141	*150
10	206	*320	*700	1,200	*320	1,100	4,420	1,190	408	313	146	*165
11	206	*280	*600	*1,100	*320	1,000	4,930	1,200	518	270	141	*155
12	206	*260	*500	*950	300	850	5,300	1,180	630	212	127	*140
13	200	*320	*460	*850	320	800	5,300	1,090	590	200	118	*145
14	250	*420	*440	*800	*320	1,100	4,560	992	608	224	114	*145
15	224	*380	*420	*750	*320	1,000	3,720	870	896	206	*124	*145
16	188	*340	*440	*650	*300	900	3,300	796	1,020	194	*135	136
17	206	*300	*500	*600	*300	850	3,760	807	936	200	*130	158
18	295	*280	*600	*550	*300	1,400	4,130	786	807	200	*130	205
19	356	*260	*600	*500	*280	1,800	3,810	723	760	212	*125	151
20	306	*240	*550	*500	*280	*1,700	3,550	670	786	250	*125	171
21	224	*260	*500	*480	*260	*1,400	3,180	650	776	257	*124	161
22	224	*340	*460	*500	*280	*1,100	2,660	610	786	230	*124	166
23	337	*700	*440	*550	*260	*900	2,190	660	692	218	*120	188
24	429	*650	*420	*700	*260	*750	2,280	681	570	212	*116	176
25	514	*650	*400	*850	*240	*650	2,860	630	433	212	*118	156
26	408	*600	*380	*900	*240	*550	2,680	600	367	264	*116	131
27	374	*550	*360	*850	*240	*1,200	2,520	523	359	252	*116	166
28	526	*550	*360	*800	*220	2,200	2,430	486	359	200	*112	209
29	607	*550	*340	*700		1,900	2,250	450	336	196	*110	*195
30	486	*1,500	*320	*650		*1,700	1,940	367	298	182	*110	*185
31	408		*320	*600		*1,600		336		182	*110	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	607	188	313	0.508	0.59
November	1,500	240	455	.739	.82
December	2,800	320	789	1.28	1.48
January	1,900	480	898	1.46	1.68
February	600	220	335	.544	.57
March	2,200	220	1,195	1.94	2.24
April	6,000	1,940	3,843	6.24	6.96
May	1,760	336	910	1.48	1.71
June	1,020	264	522	.847	.94
July	363	182	231	.375	.43
August	161	110	129	.209	.24
September	209	110	155	.252	.28
The year	6,000	110	814	1.32	17.94

*Estimated.

Salmon River at Chasm Falls, N. Y.

Location.- Water-stage recorder at Chasm Falls, Franklin County, a quarter of a mile below power plant of Malone Light & Power Co.

Drainage area.- 132 square miles (revised).

Records available.- July 1925 to September 1934.

Extremes.- Maximum discharge during year, 1,460 second-feet Apr. 12 (gage height, 3.61 feet); minimum, 22 second-feet Aug. 13, 15, 16, 17, 23 (gage height, 0.50 foot); minimum daily discharge, 28 second-feet Sept. 4.
1925-34: Maximum discharge, 2,890 second-feet Apr. 25, 1926 (gage height, 5.0 feet); minimum, that of Aug. 13, 15, 16, 17, 23, 1934; minimum daily discharge, that of Sept. 4, 1934.

Remarks.- Records good except those estimated Dec. 10, 19, Feb. 8-10, 17-27, which are fair. Dirunal fluctuation caused by operation of power plant. Small diversion from a tributary stream above gage is used as water supply for village of Malone.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	134	331	234	120	101	544	330	101	87	81	53
2	142	124	162	303	117	96	812	317	123	92	61	81
3	130	117	175	311	116	161	935	300	105	90	61	106
4	120	124	156	281	125	406	838	276	108	83	81	28
5	120	117	169	226	115	740	688	257	112	80	83	81
6	126	111	230	222	114	484	670	252	106	71	56	81
7	128	107	266	212	114	367	646	293	111	101	68	80
8	122	107	219	209	106	300	676	284	92	112	71	58
9	114	89	165	181	104	245	765	250	108	103	52	134
10	99	112	155	174	102	206	872	294	125	96	66	100
11	128	93	135	167	104	183	1,040	348	154	68	72	116
12	106	99	123	154	103	167	1,360	292	127	84	54	106
13	101	102	120	151	103	151	1,270	265	147	83	55	98
14	105	119	118	149	101	194	914	240	176	115	60	95
15	111	80	115	149	99	180	706	230	390	101	62	103
16	99	98	139	142	99	169	656	210	273	95	71	100
17	101	104	139	133	102	164	878	181	232	84	59	104
18	128	101	146	120	102	258	935	188	195	126	71	109
19	117	109	150	130	102	242	810	168	192	108	57	99
20	103	107	142	130	102	232	778	174	242	101	61	128
21	101	101	137	120	98	209	680	153	196	65	80	81
22	106	155	139	122	94	178	529	172	187	81	58	85
23	146	156	126	133	98	144	442	198	165	66	70	96
24	129	132	136	144	94	153	492	174	156	64	63	109
25	117	113	149	146	92	148	700	156	110	72	60	96
26	108	118	169	140	102	134	559	135	131	72	62	96
27	115	133	152	136	104	214	486	153	101	64	83	92
28	136	112	138	144	103	331	460	126	101	68	54	113
29	131	123	119	137		392	395	112	108	58	66	106
30	122	294	122	124		344	352	126	105	89	69	134
31	117		124	120		319		119		38	69	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	146	99	118	0.894	1.03
November	294	80	120	.909	1.01
December	331	115	157	1.19	1.37
January	311	120	169	1.28	1.48
February	125	92	105	.795	.83
March	740	96	246	1.86	2.14
April	1,360	352	730	5.53	6.17
May	348	112	218	1.65	1.90
June	390	92	153	1.16	1.29
July	126	38	84.4	.639	.74
August	83	52	65.4	.495	.57
September	134	28	95.6	.724	.81
The year	1,360	28	188	1.42	19.34

Chateaugay River near Chateaugay, N. Y.

Location.- Water-stage recorder 150 feet below dam of International Paper Co., 1 mile south of Chateaugay, Franklin County.

Drainage area.- 112 square miles (revised).

Records available.- September to December 1908, October 1926 to September 1934.

Extremes.- Maximum discharge during year, 779 second-feet Apr. 12 (gage height, 4.51 feet); minimum, 25 second-feet July 9 (gage height, 0.70 foot); minimum daily discharge, 26 second-feet July 8.
1908, 1926-34: Maximum discharge, 2,060 second-feet Apr. 8, 1928 (gage height, 7.3 feet); minimum, 6 second-feet Nov. 20, 1928 (gage height, 0.23 foot); minimum daily discharge, that of July 8, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 16, 17, Dec. 10-16, Dec. 29 to Jan. 6, Jan. 18-20, Feb. 14 to Mar. 18, and those estimated, which are fair. Flow regulated by storage in Upper and Lower Chateaugay Lakes. Large diurnal fluctuations caused by power operations.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	102	89	*180	107	*100	528	250	120	87	55	47
2	99	103	79	*120	100	*110	500	248	117	88	56	47
3	96	103	93	*100	107	*120	487	246	116	85	57	47
4	95	103	94	*100	104	160	501	225	97	85	55	47
5	95	95	90	*100	100	240	513	161	94	84	49	48
6	96	102	101	*110	100	200	521	161	98	78	48	54
7	97	97	92	*102	99	170	556	172	96	32	48	56
8	93	99	92	98	97	140	548	162	90	26	48	57
9	98	96	74	95	102	140	548	162	98	28	48	61
10	97	99	*80	95	106	*200	556	170	102	73	48	59
11	100	103	*80	94	106	240	577	168	99	74	48	57
12	94	106	*80	94	103	*260	685	165	93	76	48	57
13	94	109	*80	97	99	*260	640	165	94	80	48	57
14	94	107	*80	89	*100	*260	644	164	100	77	77	57
15	95	98	*80	95	*100	*260	632	162	103	74	50	57
16	97	100	*85	90	*100	*260	492	161	117	76	48	57
17	99	100	95	88	*100	*260	242	161	99	73	48	61
18	100	97	116	90	*100	*260	338	159	98	75	47	60
19	99	91	100	90	*100	*271	476	159	102	76	47	58
20	98	95	89	90	*100	*304	627	159	99	75	48	59
21	101	91	84	88	*100	*202	600	158	103	64	47	59
22	109	102	79	91	*95	161	560	161	111	62	47	69
23	113	85	80	106	*95	*162	552	156	102	65	47	44
24	103	84	85	94	*95	*156	576	155	96	62	47	64
25	102	84	85	96	*95	150	550	152	97	63	47	64
26	105	95	84	90	*95	144	544	152	93	62	46	64
27	104	92	79	87	*95	325	490	148	96	62	46	65
28	104	89	81	92	*95	206	258	122	99	56	46	65
29	103	89	*80	96		213	251	120	94	54	47	65
30	104	123	*80	95		213	250	121	84	52	47	65
31	101		*80	108		276		121		50	47	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	113	93	99.5		
November	123	84	98.0		
December	116	74	86.0		
January	180	87	98.7		
February	107	95	99.8		
March	325	100	207		
April	685	242	508		
May	250	120	166		
June	120	84	100		
July	88	26	66.9		
August	77	46	49.5		
September	69	44	57.6		
The year	685	26	136	1.21	16.51

*Estimated.

Richelieu River (Lake Champlain) at Rouses Point, N. Y.

Location.- Staff gage at Rutland Railroad bridge in Rouses Point, Clinton County, 1 mile south of Fort Montgomery. Zero of gage is 92.50 feet above mean sea level.

Drainage area.- 7,870 square miles.

Records available.- 1,875 to September 1934.

Extremes.- Maximum elevation recorded during year, 99.78 feet Apr. 19; minimum, 92.53 feet Oct. 20.

Remarks.- Gage-height record furnished by U. S. Army Engineers.

Gage height, in feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.78	0.32	0.37	0.94	1.45	1.20	3.64	6.45	3.47	2.50	1.22	0.48
2	.45	.60	.60	1.02	1.44	1.18	4.02	6.47	3.34	2.33	1.40	.60
3	.53	.88	.60	1.10	1.48	1.23	4.34	6.42	3.35	2.38	1.30	.53
4	.57	.20	.53	1.12	1.46	1.25	4.72	6.22	3.45	2.20	1.08	.33
5	.38	.25	1.02	1.15	1.43	1.50	4.97	6.17	3.33	2.28	1.00	.50
6	.25	.42	.75	1.18	1.40	1.75	5.12	5.97	3.25	2.18	1.00	.52
7	.25	.42	.82	1.12	1.38	1.90	5.19	5.85	3.00	2.00	1.05	.25
8	.23	.35	.87	1.22	1.32	2.17	5.27	5.77	3.05	2.08	1.08	.28
9	.47	.45	.76	1.20	1.30	2.22	5.29	5.77	3.15	1.93	1.25	.30
10	.40	.42	.80	1.32	1.28	2.24	5.39	6.17	2.95	1.97	1.05	.42
11	.42	.40	.78	1.34	1.25	2.26	5.52	5.47	2.86	2.00	.85	.35
12	.55	.40	.75	1.32	1.23	2.30	5.79	5.42	2.84	2.05	.88	.42
13	.28	.95	.77	1.35	1.22	2.30	6.25	5.37	2.50	1.95	1.00	.60
14	.28	.25	.80	1.40	1.20	2.36	6.57	5.19	2.87	1.80	.85	.52
15	.55	.32	.85	1.48	1.18	2.33	6.71	5.17	2.84	1.82	.78	.58
16	.48	.45	.88	1.45	1.17	2.38	6.81	5.05	2.52	1.65	.80	.68
17	.20	.53	.84	1.44	1.15	2.40	6.86	5.12	2.84	1.50	.80	.32
18	.27	.55	.78	1.42	1.15	2.30	7.00	4.75	2.93	1.46	.90	.32
19	.25	.35	.80	1.38	1.15	2.38	7.28	4.72	3.00	1.68	.92	.38
20	.03	.35	.87	1.40	1.17	2.57	7.11	4.62	2.78	1.59	.68	.42
21	.25	.40	.80	1.42	1.19	2.65	7.16	4.53	2.86	1.60	.65	.60
22	.70	.32	.87	1.42	1.20	2.60	7.13	4.57	2.70	1.45	.98	.50
23	.13	.28	.90	1.45	1.21	2.58	7.21	4.35	2.78	1.40	.54	.28
24	.22	.32	.87	1.38	1.20	2.60	6.91	4.27	2.87	1.40	1.00	.35
25	.25	.40	.85	1.42	1.21	2.60	6.96	4.15	2.62	1.48	.60	.54
26	.32	.65	.85	1.44	1.20	2.66	7.11	4.02	2.60	1.33	.45	.45
27	1.10	.40	.98	1.53	1.20	2.64	6.84	3.99	2.60	1.32	.40	.75
28	.28	.33	.95	1.50	1.20	2.88	6.74	3.87	2.54	1.35	.42	.45
29	.35	.42	.95	1.46		3.10	6.76	3.95	2.47	1.30	.44	.55
30	.28	.48	.96	1.45		3.25	6.86	3.67	2.48	1.35	.36	.45
31	.42		.95	1.47		3.45		3.61		1.35	.42	

Lake Champlain at Burlington, Vt.

Location.- Staff gage on south side of wharf of Champlain Transportation Co., at foot of King Street, Burlington, Chittenden County. Zero of gage is about 92.5 feet above mean sea level.

Records available.- May 1907 to September 1934.

Extremes.- Maximum gage height recorded during year, 7.42 feet Apr. 21; minimum, 0.26 foot Oct. 23.
1907-34: Maximum gage height recorded, 8.47 feet Apr. 21, 1933; minimum, -0.25 foot Dec. 4, 1908.

Remarks.- Gage-height record furnished by D. A. Loomis, general manager, Champlain Transportation Co.

Daily gage height, in feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0.46	0.66					6.50	3.68		1.32	0.42
2	0.58	.48	.68	1.08			4.02	6.44	3.52	2.44	1.30	
3	.58						4.40	6.40		2.34	1.28	.34
4	.50	.48	.78	1.16			4.82	6.28	3.32	2.34	1.24	.32
5	.50		.80			1.62	5.02	6.12	3.24	2.24		.40
6	.52	.48	.82	1.18	1.56	1.86	5.12		3.14	2.24	1.14	.42
7	.52	.48	.88			1.98	5.26	6.02	3.14	2.24	1.10	.42
8		.48	.96	1.26		2.18		5.92	3.14		1.08	.42
9	.48	.48	.98	1.33		2.28	5.40	5.82	2.94	2.14	1.04	
10	.48	.48		1.33			5.50			2.12	1.04	.44
11	.46	.50	.96				5.52	5.62	2.94	2.04	1.02	.48
12	.42		.96	1.38	1.48	2.40	5.70	5.52	2.84	1.94		.50
13	.38	.48	.96				6.28		2.84	1.94	.98	.44
14	.38	.46	.96				6.64	5.32	2.84	1.84	.84	.42
15		.46	.94	1.46				5.26	2.88		.84	.40
16	.28	.46	.88			1.46	6.82	5.12	2.92	1.84	.84	
17		.46		1.46			6.88	4.96		1.82	.80	.44
18	.36	.40	.94				7.12	4.88	2.92	1.80	.78	.46
19	.36		.88		1.48	2.60	7.22	4.82	2.92	1.78		.44
20		.44	.88				7.32		2.84	1.76	.80	.44
21	.28	.44	.88				7.42	4.58	2.74	1.74	.64	.40
22		.44	.88	1.48				4.52	2.72		.62	.42
23	.26	.46	.88				7.37	4.42	2.72	1.72	.54	
24	.30	.46		1.53			7.12	4.38		1.54	.52	.44
25	.32	.46	.90				7.02	4.26	2.70	1.44	.50	.42
26	.36		.92			2.70	7.02	4.12	2.70	1.44		.42
27		.48	.94		1.48		6.92		2.64	1.44	.52	.40
28	.38	.48	.98			2.98	6.82	3.92	2.62	1.46	.54	.36
29		.50	.98			3.24		3.82	2.60		.52	.36
30	.46	.50	.98	1.58			6.52	3.80	2.54	1.42	.50	
31	.46							3.72		1.34	.48	

Great Chazy River at Perry Mills, N. Y.

Location.- Water-stage recorder 500 feet above highway bridge at Perry Mills, Clinton County.

Drainage area.- 247 square miles.

Records available.- September 1928 to September 1934.

Extremes.- Maximum discharge during year, 3,760 second-feet Apr. 13; maximum gage height, 10.64 feet Apr. 3; minimum discharge, 13 second-feet Aug. 27 (gage height, 1.66 feet); minimum daily discharge, 17 second-feet Aug. 14.
1928-34: Maximum discharge, 5,810 second-feet Mar. 16, 1929; maximum gage height, 11.2 feet Mar. 15, 1929; minimum discharge, about 0.8 second-foot Sept. 18, 1932 (gage height, 1.33 feet); minimum daily discharge, 10 second-feet Sept. 18, 1932.

Remarks.- Records good except those for periods of ice effect, Nov. 10-28, Dec. 10 to Apr. 4, which are fair. Discharge estimated Feb. 10, 24. Dirunal fluctuation caused by operation of sawmill nearby. Partial regulation by storage in Chazy Lake. Clinton Prison at Dannemora obtains water supply from Chazy Lake.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	115	328	190	150	95	1,300	270	67	52	70	74
2	53	100	159	160	140	100	2,000	251	73	339	71	80
3	69	95	187	130	140	130	2,800	222	72	208	78	76
4	58	94	191	100	140	240	2,200	214	64	100	80	64
5	37	86	176	100	140	850	1,250	189	66	58	50	79
6	31	82	169	110	150	1,500	1,180	182	67	47	37	63
7	22	85	284	150	140	1,200	1,050	242	67	54	24	62
8	30	99	237	220	140	650	1,100	306	46	62	26	76
9	34	101	154	220	140	600	1,190	250	41	55	26	83
10	57	90	120	190	130	420	1,230	248	48	50	22	51
11	88	80	85	180	130	280	1,270	282	68	42	22	37
12	84	70	60	180	130	200	2,360	234	61	36	26	61
13	85	80	50	170	130	220	2,970	205	53	40	25	79
14	85	80	46	150	120	220	1,500	168	62	76	17	75
15	59	70	50	140	120	240	1,090	134	70	59	34	77
16	46	65	70	130	120	260	1,020	117	141	56	36	80
17	81	60	110	110	110	280	1,400	119	138	55	41	83
18	116	55	170	100	110	260	1,060	116	74	44	41	82
19	91	55	200	95	110	260	777	110	78	38	40	77
20	68	50	170	95	110	240	742	102	108	32	31	90
21	94	70	130	90	100	200	570	95	104	62	25	78
22	82	95	100	90	100	170	431	116	97	54	57	86
23	60	85	85	120	100	150	373	138	109	40	54	95
24	84	75	75	130	100	140	398	122	67	35	51	66
25	93	70	70	140	100	130	728	104	56	79	41	81
26	54	85	65	170	95	120	481	88	46	78	31	63
27	51	80	55	160	95	240	401	84	56	80	22	93
28	86	75	50	170	90	440	380	78	38	78	19	83
29	104	72	46	170		650	308	73	31	73	22	83
30	74	123	42	160		600	263	72	40	49	51	91
31	121		65	150		550		66		47	69	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	121	22	70.1		
November	123	50	81.4		
December	328	42	123		
January	220	90	144		
February	150	90	121		
March	1,500	95	382		
April	2,970	263	1,127		
May	306	66	161		
June	141	31	70.3		
July	389	32	71.9		
August	80	17	40.0		
September	95	37	76.3		
The year	2,970	17	205	0.830	11.27

Note.- Discharge and run-off for year practically unaffected by regulation in Chazy Lake, as amount of storage was practically same at beginning and end of year.

Saranac River at Saranac, N. Y.

Location.- Water-stage recorder 500 feet above highway bridge at Saranac, Clinton County.

Drainage area.- 521 square miles (revised).

Records available.- September 1930 to September 1934.

Extremes.- Maximum discharge during year, 3,070 second-feet Apr. 18; maximum gage height recorded, 8.24 feet Apr. 3; minimum discharge, 67 second-feet Aug. 27 (gage height, 1.63 feet); minimum daily discharge, 96 second-feet Sept. 22.
1930-34: Maximum discharge, 5,780 second-feet Apr. 17, 1933; maximum gage height recorded (caused by ice jam), about 12.0 feet Feb. 10, 1933 (published erroneously as 11.0 feet in Water-Supply Paper 744), minimum discharge, that of Aug. 27, 1934; minimum daily discharge, that of Sept. 22, 1934.

Remarks.- Records excellent except those for period of ice effect, Nov. 16 to Apr. 3, and those estimated, which are poor. Considerable diurnal fluctuation caused by power operations. Flow partly regulated by storage in Lower Saranac Lake and elsewhere.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			300	*480	*450	*360	*1,800	1,380	350	336		212
2			420	*600	*480	*380	2,400	1,350	328	362		153
3			420	*650	*460	*480	2,600	1,280	336	374		154
4			400	*550	*460	*700	2,550	1,150	324	384		239
5			420	*500	*440	*1,100	2,230	984	344	354		271
6			550	*440	*440	*1,000	2,120	*900	386	264	*285	282
7			650	420	*440	*850	1,950	849	368	383		252
8		*270	550	360	*420	*650	1,930	580	336	391		164
9			440	600	*420	*500	2,150	448	336	305		210
10			400	600	420	420	2,300	667	326	257		142
11			320	480	420	380	2,550	856	428	301	*260	200
12			300	550	400	360	2,760	912	556	362	202	209
13			*280	420	420	360	2,670	912	558	402	268	227
14			*280	300	360	420	2,320	880	598	420	330	170
15			*280	360	400	550	2,150	872	862	326	301	104
16		260	*340	460	420	460	2,350	792	812	310	268	114
17		240	*340	240	*400	400	2,910	744	766	319	288	196
18		260	*360	*340	*420	650	2,730	720	814	332	340	228
19		260	360	*360	*420	380	2,490	688	937	375	194	192
20		260	340	*360	*400	*380	2,350	665	1,020	348	234	209
21		260	320	*340	*400	*360	2,110	665	868	281	286	126
22		400	340	*340	*380	*360	1,890	672	788	174	286	96
23		380	*320	*360	*380	*360	1,770	658	676	167	288	114
24		320	*320	*380	*380	*360	1,810	588	606	264	183	238
25		280	*360	*440	*380	*340	1,880	250	626	270	212	260
26		300	360	*500	*360	*340	1,720	352	427	297	185	250
27		320	*340	*550	*360	*420	1,640	592	420	264	158	256
28		280	*320	*550	*360	*750	1,640	389	414	286	277	198
29		300	*300	*550		*700	1,480	330	406	235	320	198
30		750	*300	*500		*750	1,420	302	382	*250	307	196
31			*280	*500		*900		322		*300	167	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			*260	0.499	0.58
November	750	240	297	.570	.64
December	800	280	381	.731	.84
January	650	240	454	.871	1.00
February	480	360	411	.789	.82
March	1,100	340	530	1.02	1.18
April	2,910	1,420	2,156	4.14	4.62
May	1,380	250	734	1.41	1.63
June	1,020	324	546	1.05	1.17
July	420	167	313	.601	.69
August	340	158	265	.509	.59
September	282	96	195	.374	.42
The year	2,910	96	543	1.04	14.18

*Estimated.

West Branch of Ausable River near Newman, N. Y.

Location.- Water-stage recorder 4 miles northeast of Newman, Essex County, and 4 miles below mouth of Lake Placid outlet.

Drainage area.- 116 square miles.

Records available.- June 1916 to December 1917, July 1919 to September 1934.

Average discharge.- 15 years (1919-34), 222 second-feet.

Extremes.- Maximum discharge during year, 1,940 second-feet Mar. 28 (gage height, 6.14 feet); minimum, 26 second-feet Aug. 21, 30, 31, Sept. 2, 4 (gage height, 2.20 feet); minimum daily discharge, 28 second-feet Dec. 23.

1916-17, 1919-34: Maximum discharge, 6,200 second-feet Oct. 6, 1932 (gage height, 9.61 feet); minimum, practically zero Sept. 13, 1920, caused by closing gates in logging dam (gage height, 1.60 feet); minimum daily discharge, 7.2 second-feet July 29, 1920.

Remarks.- Records good except those for periods of ice effect, Nov. 14-30, Dec. 10 to Mar. 28, and those estimated, Oct. 6-12, Dec. 5, 6, which are fair. Diurnal fluctuation at low and medium stages caused by power operations.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	164	516	220	55	34	740	553	98	68	45	36
2	64	144	301	280	50	46	901	690	92	64	42	34
3	82	181	190	190	50	85	963	714	94	59	47	37
4	58	217	189	160	50	200	619	719	93	53	60	37
5	57	136	220	140	46	260	459	737	88	49	50	50
6	53	108	220	130	42	280	412	684	146	51	48	48
7	50	103	211	110	46	200	421	631	360	55	47	43
8	52	82	165	95	42	150	405	450	214	54	43	42
9	54	88	105	95	40	110	494	325	138	49	43	83
10	58	72	55	90	38	90	634	441	155	48	42	85
11	60	57	46	80	38	85	558	503	193	47	40	58
12	62	64	38	75	38	80	1,480	331	146	44	39	47
13	62	62	34	70	38	75	941	246	296	46	40	45
14	54	55	34	65	36	85	550	252	422	72	40	42
15	58	42	30	65	34	75	407	250	1,130	59	42	39
16	54	48	40	70	32	85	582	222	531	53	39	38
17	65	44	34	65	34	95	1,430	184	307	49	38	68
18	153	42	46	60	36	220	876	181	217	44	37	95
19	108	42	34	60	38	190	817	160	296	42	35	66
20	93	42	38	60	36	140	1,080	153	437	53	38	54
21	85	44	32	60	34	110	593	181	281	50	35	51
22	73	50	30	60	34	95	426	224	224	47	38	49
23	251	80	28	75	34	90	402	343	171	43	46	48
24	164	65	34	75	32	90	811	220	138	47	43	51
25	132	60	75	70	32	90	797	168	118	36	41	48
26	104	70	75	60	32	95	434	142	105	42	34	48
27	94	65	55	70	32	550	380	129	97	46	34	47
28	105	50	46	75	32	1,300	351	117	89	82	34	59
29	98	65	38	65		646	274	113	81	81	35	56
30	94	440	30	55		441	264	110	72	59	34	68
31	96		44	55		308		101		50	35	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	251	50	85.2	0.734	0.85
November	440	42	93.1	.803	.90
December	516	28	97.8	.843	.97
January	280	55	93.5	.806	.93
February	55	32	38.6	.333	.35
March	1,300	34	206	1.78	2.05
April	1,480	264	650	5.60	6.25
May	737	101	331	2.85	3.29
June	1,130	72	228	1.97	2.20
July	82	36	53.0	.457	.53
August	60	34	40.8	.352	.41
September	95	34	52.4	.452	.50
The year	1,480	28	164	1.41	19.23

Ausable River near Ausable Forks, N. Y.

Location.- Water-stage recorder 1½ miles below junction of East and West Branches of Ausable River at Ausable Forks, Clinton County.

Drainage area.- 448 square miles.

Records available.- September 1924 to September 1934.

Average discharge.- 10 years, 701 second-feet.

Extremes.- Maximum discharge during year, 6,110 second-feet Apr. 17; maximum gage height from flood marks (ice jam), about 12.0 feet Mar. 27; minimum discharge, 77 second-feet Aug. 31 (gage height, 0.98 foot).
1924-34: Maximum discharge, about 19,100 second-feet Oct. 1, 1924; maximum gage height, that of Mar. 27, 1934; minimum discharge, that of Aug. 31, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 15-30, Dec. 11 to Mar. 26, those for period of backwater from mill waste, June 26 to Sept. 30, and those estimated, which are fair. Flow partly regulated by storage, principally in Taylor Pond and Fern Lake.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*215	477	1,630	*320	180	150	*2,450	1,560	*310	160	175	106
2	*190	455	691	*550	180	160	*2,700	2,270	*290	170	150	110
3	*190	476	593	*600	180	200	*2,700	2,410	269	175	140	98
4	*170	545	504	420	170	550	2,150	2,340	277	140	145	114
5	169	*460	499	340	180	1,400	1,530	2,410	341	145	135	140
6	153	*340	504	340	170	950	1,380	2,270	376	155	140	150
7	153	*280	575	*340	170	650	1,330	2,000	738	150	135	140
8	153	*250	465	*300	170	440	1,330	1,480	560	130	130	140
9	150	*220	335	*300	170	380	1,580	1,090	381	135	118	280
10	153	*215	256	280	170	320	2,030	1,150	*390	145	122	330
11	159	*180	200	240	170	260	2,710	1,640	498	145	135	230
12	156	187	160	240	170	240	4,370	1,150	510	135	120	185
13	156	205	140	220	170	240	3,310	879	785	145	122	170
14	156	206	140	190	160	220	1,980	785	831	175	122	170
15	163	180	140	200	160	260	1,580	800	*2,270	165	120	*165
16	144	160	160	200	160	300	2,220	719	1,280	*160	118	*165
17	153	140	170	220	160	420	5,170	631	831	*160	114	*175
18	294	120	180	220	170	650	3,390	598	618	*140	116	*245
19	276	100	180	*200	160	900	2,880	579	650	*140	98	*270
20	237	160	170	*200	150	750	3,580	528	1,510	*140	102	190
21	212	180	170	200	150	600	2,110	540	959	145	*116	175
22	186	180	160	200	150	480	1,480	605	698	114	*116	170
23	396	170	180	200	150	*410	1,330	876	492	135	*124	150
24	462	160	180	260	150	*420	2,350	670	387	130	*124	150
25	387	150	*150	300	150	*440	2,830	534	329	130	*126	155
26	288	110	*170	280	140	*400	1,530	446	280	122	*124	150
27	268	150	*160	240	140	*2,000	1,330	413	260	135	*82	155
28	280	130	*150	220	140	*3,000	1,220	381	220	190	*94	165
29	280	140	140	200		*2,450	975	357	210	240	*118	175
30	268	1,200	100	200		*1,550	919	324	185	205	*110	160
31	260		160	190		*1,040		*330		180	100	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	462	144	222	0.496	0.57
November	1,200	100	264	.589	.66
December	1,630	100	304	.679	.78
January	600	190	271	.605	.70
February	180	140	162	.362	.38
March	3,000	150	717	1.60	1.84
April	5,170	919	2,215	4.94	5.51
May	2,410	324	1,057	2.36	2.72
June	2,270	185	691	1.32	1.47
July	240	114	153	.342	.39
August	175	82	122	.272	.31
September	330	98	173	.386	.43
The year	5,170	82	521	1.16	15.76

*Estimated.

Black Brook at Black Brook, N. Y.

Location.- Staff gage 100 feet below hydroelectric plant of Associated Gas & Electric System and three-quarters of a mile south of Black Brook, Clinton County.

Drainage area.- 49.4 square miles (revised).

Records available.- September 1924 to September 1934.

Average discharge.- 10 years, 51.2 second-feet.

Extremes.- Maximum discharge during year, 402 second-feet Apr. 3 (gage height, 4.3 feet, from graph based on gage readings); minimum, 6 second-feet frequently when plant is shut down.
1924-34: Maximum discharge, 720 second-feet Apr. 25, 1926 (gage height, 5.6 feet); minimum, 0.8 second-foot July 2, Aug. 29, 1931 (plant shut down).

Remarks.- Records fair except those estimated May 4-26, June 6-19, 21-26, which are poor. Flow regulated by storage in Taylor Pond and Fern Lake and by operation of power plant.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	29	52	33	30	63	130	58	24	6	44	30
2	7	30	24	36	23	63	296	57	24	20	37	20
3	12	16	7	54	35	65	362	52	6	40	34	24
4	6	16	17	46	37	63	248	66	12	11	25	30
5	6	9	25	30	67	91	168	60	13	34	25	34
6	6	21	28	31	45	93	136	55	10	43	26	33
7	6	19	36	19	49	50	122	50	12	39	26	35
8	6	7	26	28	38	45	129	46	12	6	26	36
9	6	7	33	26	41	32	176	42	11	41	26	36
10	6	7	17	25	51	34	204	38	11	39	31	31
11	7	13	27	21	46	39	219	36	12	37	44	21
12	8	7	25	21	72	45	234	36	13	40	31	22
13	7	14	36	29	67	39	206	34	15	32	40	35
14	7	11	29	6	71	35	194	32	18	36	38	42
15	16	30	41	23	74	42	264	30	40	17	33	43
16	7	44	39	33	72	40	283	28	30	41	33	33
17	7	37	33	54	72	23	302	26	26	44	31	44
18	7	22	23	61	72	48	268	24	22	35	30	29
19	7	16	23	64	77	77	176	22	20	40	26	27
20	7	78	16	59	76	73	152	20	48	38	35	21
21	14	76	15	58	76	55	136	20	30	38	34	28
22	7	79	13	58	64	44	129	22	20	19	35	37
23	7	77	28	44	75	39	129	26	16	30	36	16
24	13	34	6	49	79	49	129	28	16	37	28	22
25	14	19	6	56	69	34	118	26	14	35	31	22
26	7	7	17	56	65	32	99	26	12	38	35	26
27	35	24	19	37	66	50	93	25	11	38	10	29
28	48	10	18	26	65	104	88	26	6	32	23	34
29	48	13	10	29		114	80	25	13	14	40	30
30	37	35	6	23		112	66	25	10	32	32	8
31	11		6	19		93		25		36	17	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	48	6	12.6		
November	79	7	27.0		
December	52	6	22.3		
January	64	6	37.2		
February	79	23	59.8		
March	114	23	67.6		
April	362	66	178		
May	66	20	35.1		
June	48	6	17.6		
July	44	6	31.9		
August	44	10	31.0		
September	44	8	29.3		
The year	362	6	44.6	0.903	12.27

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East Branch of Ausable River at Ausable Forks, N. Y.

Location.- Staff gage at lower highway bridge in Ausable Forks, Essex County, 400 feet above confluence with West Branch of Ausable River.

Drainage area.- 198 square miles (revised).

Records available.- September 1924 to September 1934.

Average discharge.- 10 years, 314 second-feet.

Extremes.- Maximum discharge during year, 5,700 second-feet Mar. 27 (gage height, 5.3 feet, from graph based on gage readings); minimum, 20 second-feet Aug. 11, 14, 28. 1924-34: Maximum stage, 11.4 feet Mar. 28, 1925 (discharge not determined). Minimum discharge, that of Aug. 11, 14, 28, 1934.

Remarks.- Records good except those for periods of ice effect, Nov. 16-30, Dec. 9 to Mar. 17, and period of backwater from trash, July 2 to Aug. 12, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	312	710	190	70	24	1,660	797	99	55	34	33
2	68	254	387	220	70	30	1,240	1,110	89	45	36	34
3	65	274	317	180	65	48	1,020	1,160	89	43	43	33
4	60	274	229	150	60	280	848	1,160	86	38	45	34
5	55	189	198	130	60	700	572	1,110	83	33	40	45
6	55	148	198	120	55	360	572	1,020	152	27	33	45
7	52	124	213	120	55	260	610	975	229	33	29	36
8	52	116	189	110	55	160	535	725	179	40	27	48
9	52	113	120	100	50	120	648	486	148	36	22	137
10	55	99	85	95	50	95	682	439	179	34	22	136
11	55	80	60	90	50	90	1,220	765	169	29	20	92
12	55	89	44	90	50	85	2,000	472	189	31	24	77
13	52	89	38	85	48	100	1,230	380	384	34	24	74
14	52	92	34	85	46	95	765	342	510	60	22	60
15	48	50	40	80	42	110	765	323	947	50	24	55
16	50	38	50	80	42	140	1,170	323	472	45	27	68
17	57	34	60	80	42	200	2,310	298	413	43	25	68
18	157	32	70	80	40	394	1,490	252	323	40	25	110
19	120	30	80	75	38	486	1,220	218	233	31	24	106
20	96	28	90	70	38	472	1,610	203	754	31	25	83
21	86	50	85	70	34	387	924	203	486	36	25	71
22	80	38	75	65	32	252	648	252	354	33	27	65
23	215	30	100	85	30	218	572	374	252	31	29	60
24	224	24	140	120	28	218	1,030	252	189	27	29	60
25	194	22	90	150	26	252	1,330	213	113	27	31	52
26	152	26	65	120	24	218	754	189	92	29	27	55
27	124	34	55	100	22	1,540	648	152	80	43	24	55
28	131	26	46	90	22	1,900	535	127	74	68	22	55
29	131	55	40	85		670	465	116	65	102	24	60
30	116	750	38	75		572	394	102	60	62	24	62
31	120		60	75		354		106		43	24	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	224	48	93.6	0.473	0.55
November	750	22	117	.591	.66
December	710	34	129	.652	.75
January	220	65	105	.530	.61
February	70	22	44.4	.224	.23
March	1,900	24	350	1.77	2.04
April	2,310	394	982	4.96	5.53
May	1,160	102	472	2.38	2.74
June	947	60	250	1.26	1.41
July	102	27	41.3	.209	.24
August	45	20	27.6	.139	.16
September	137	33	65.6	.331	.37
The year	2,310	20	223	1.13	15.29

Bouquet River at Willsboro, N. Y.

Location.- Water-stage recorder half a mile southwest of Willsboro, Essex County.

Drainage area.- 275 square miles (revised).

Records available.- August and September 1904, August to November 1908, July 1923 to September 1934.

Average discharge.- 11 years (1923-34), 310 second-feet.

Extremes.- Maximum discharge during year, 4,350 second-feet Apr. 12; maximum gage height (affected by ice), about 8.25 feet Mar. 27 or 28; minimum discharge, 30 second-feet Aug. 11 (gage height, 2.15 feet).
1923-34: Maximum discharge, about 11,800 second-feet Oct. 1, 1924 (gage height, 10.85 feet); minimum, 27 second-feet Sept. 11, 1932 (gage height, 2.10 feet).

Remarks.- Records good except those for periods of ice effect, Nov. 14-30, Dec. 9 to Apr. 3, and those estimated, which are fair.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	175	*568	*130	*70	*40	*1,600	567	*95	*73	45	35
2	48	214	*426	*150	*70	*46	*2,000	542	*90	*65	43	36
3	48	181	*323	*130	*65	*60	1,700	530	*85	*62	42	35
4	49	181	*206	*100	*65	*260	1,330	505	*77	*58	*43	45
5	*48	144	*166	*85	*65	*500	954	480	*73	*54	*43	46
6	46	117	*166	*90	*60	*340	785	432	*79	*51	*42	51
7	45	103	*180	*95	*60	220	652	415	*150	*55	*42	49
8	43	98	*170	*90	*60	140	672	334	*137	*60	*42	*70
9	46	92	*120	*85	*55	100	778	*323	*106	*56	42	144
10	65	87	*85	*85	*55	85	*1,040	*323	*124	*53	42	114
11	65	81	*65	*80	*55	80	*1,500	*376	*140	*49	34	87
12	56	80	*55	*80	*55	75	*3,800	*339	*144	*52	35	71
13	51	81	*50	*75	*55	85	*2,200	*293	*193	*60	35	67
14	*53	85	*46	*75	*55	85	*1,200	*268	*214	*79	35	65
15	51	60	*48	*75	*50	95	*1,200	*259	*308	*71	35	67
16	48	48	*55	*75	*50	130	*1,600	*259	*278	65	34	71
17	54	46	*60	*75	*48	*180	2,740	*250	*245	60	35	71
18	73	44	*65	*75	*48	*360	2,100	*214	*195	*53	36	98
19	95	42	*75	*70	*48	*440	1,380	*189	*140	*48	36	100
20	81	40	*80	*70	*48	*400	1,470	*185	*352	*46	34	75
21	71	60	*75	*65	*46	*280	1,010	*181	293	*43	32	67
22	67	55	*70	*65	*44	*220	741	*202	*193	*42	31	63
23	73	44	*90	*75	*44	*200	666	*219	*155	*41	35	*62
24	154	38	*120	*90	*42	*200	778	*206	*130	41	39	54
25	158	38	*90	*110	*40	*200	1,040	186	*110	41	39	53
26	130	38	*70	*95	*40	*260	633	*170	*100	41	38	49
27	114	44	*60	*85	*38	*1,000	486	*137	*90	*46	38	53
28	137	40	*55	*80	*36	*1,900	*438	124	*85	51	36	51
29	158	*65	*50	*75		*800	*432	114	*80	48	36	56
30	134	*550	*48	*75		*420	480	*106	*77	45	36	*69
31	124		*65	*75		*260		*109		46	*36	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	158	43	78.6	0.286	0.33
November	550	36	99.0	.360	.40
December	568	46	123	.447	.52
January	150	65	86.5	.315	.36
February	70	36	52.4	.191	.20
March	1,900	40	305	1.11	1.28
April	3,800	432	1,244	4.52	5.04
May	567	106	285	1.04	1.20
June	352	73	151	.549	.61
July	79	41	53.4	.194	.22
August	45	31	37.8	.137	.16
September	144	35	65.8	.239	.27
The year	3,800	31	215	.782	10.59

*Estimated.

Lake George at Rogers Rock, N. Y.

Location.- Staff gage about 500 feet north of Hoopers Dock, on south side of Stones Bay, Rogers Rock, Essex County.

Records available.- July 1913 to September 1934.

Extremes.- Maximum gage height recorded during year, 4.40 feet Apr. 24; minimum, 1.23 feet Nov. 27.
1913-34: Maximum gage height recorded, 5.07 feet Apr. 18, 1922; minimum, 1.06 feet Dec. 29, 1922.

Remarks.- Records good. Elevation of lake surface regulated by power operations and flood gates at Ticonderoga.

Gage height, in feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.09	1.70	1.43	1.50	1.85	1.80	2.39	4.10	3.89	3.92	3.59	2.88
2	2.07	1.64	1.45	1.52	1.87	1.82	2.53	4.08	3.93	3.90	3.57	2.84
3	2.05	1.66	1.49	1.54	1.85	1.84	2.73	4.06	3.95	3.92	3.53	2.82
4	*2.09	1.62	1.53	1.52	1.83	1.86	2.77	4.06	3.97	3.94	3.52	2.80
5	*2.11	1.58	1.55	1.54	1.81	1.88	2.79	4.08	3.95	3.92	3.47	2.84
6	2.05	1.60	1.53	1.56	1.83	1.92	2.85	4.06	3.99	3.84	3.45	2.82
7	2.07	1.58	1.51	1.52	1.85	1.96	3.09	4.04	3.93	3.80	3.43	2.64
8	2.02	1.60	1.45	1.50	1.87	1.98	3.49	4.00	3.95	3.78	3.41	2.72
9	1.91	1.58	1.41	1.50	1.85	2.02	3.16	4.07	3.99	3.78	3.43	2.92
10	1.87	1.56	1.43	1.52	1.83	2.06	3.26	4.11	3.91	3.76	3.39	2.84
11	1.89	1.54	1.41	1.54	1.81	2.08	3.34	4.13	3.97	3.80	3.37	2.86
12	1.87	1.58	1.47	1.56	1.78	2.11	3.76	4.07	3.94	3.78	3.31	2.82
13	1.73	1.56	1.49	1.58	1.80	2.09	3.94	4.09	3.92	3.76	3.25	2.84
14	1.75	1.54	1.51	1.60	1.78	2.07	4.02	4.05	3.96	3.80	3.23	2.80
15	1.77	1.50	1.53	1.75	1.76	2.05	4.10	4.03	3.98	3.82	3.19	2.76
16	1.79	1.48	1.55	1.77	1.78	2.03	4.16	3.99	3.92	3.72	3.23	2.74
17	1.85	1.46	1.57	1.79	1.80	2.01	4.24	3.95	3.90	3.76	3.19	2.84
18	1.83	1.44	1.60	1.81	1.80	1.99	4.28	3.97	3.92	3.74	3.17	2.76
19	1.79	1.37	1.58	1.77	1.78	2.03	4.36	3.99	3.94	3.72	3.15	2.74
20	1.77	1.39	1.56	1.75	1.76	2.05	4.38	4.01	4.14	3.71	3.13	2.74
21	1.75	1.37	1.54	1.73	1.74	2.07	4.34	4.07	4.16	3.61	3.11	2.76
22	1.74	1.39	1.52	1.71	1.72	2.05	4.30	4.05	4.18	3.53	3.09	2.71
23	1.72	1.37	1.46	1.77	1.74	2.03	4.34	4.03	4.16	3.51	3.03	2.69
24	1.76	1.35	1.50	1.85	1.76	2.01	4.40	4.01	4.10	3.59	3.01	2.71
25	1.78	1.33	1.52	1.91	1.76	1.99	4.28	3.95	4.08	3.53	3.01	2.62
26	1.80	1.27	1.54	1.99	1.74	2.01	4.30	3.99	4.04	3.51	2.99	2.73
27	1.84	1.23	1.52	1.97	1.76	2.07	4.26	3.97	4.00	3.57	2.93	2.75
28	1.64	1.25	1.50	1.95	1.78	2.17	4.16	4.01	3.98	3.63	2.91	2.71
29	1.78	1.31	1.48	1.93		2.25	4.14	4.03	3.94	3.65	2.89	2.69
30	1.74	1.33	1.46	1.89		2.29	4.12	3.97	3.98	3.61	2.88	2.71
31	1.72		1.48	1.87		2.35		3.99		3.61	2.87	

*Estimated.

Poultney River below Fair Haven, Vt.

Location.- Water-stage recorder a third of a mile below Carver Falls, 1.9 miles above mouth of Hubbardton River, and 3¼ miles northwest of Fair Haven, Rutland County.

Drainage area.- 187 square miles.

Records available.- October 1928 to September 1934.

Extremes.- Maximum discharge during year, 2,270 second-feet Apr. 3; maximum gage height, 16.66 feet (affected by ice) Mar. 28; minimum (regulated), 3.8 second-feet June 1 (gage height, 1.78 feet).
1928-34: Maximum discharge, 3,870 second-feet Nov. 20, 1932; maximum gage height, 16.66 feet (affected by ice) Mar. 28, 1934; minimum discharge, that of June 1, 1934.

Remarks.- Records good except those estimated, which are fair. Records for Nov. 16, 17, and for periods of ice effect or no gage height record, Dec. 15, 16, and Dec. 27 to Mar. 30. were estimated by hydrographic comparison and one discharge measurement during the ice period. Lake Bomoseen may produce seasonal storage. Slight diurnal regulation at low stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	128	278	125	140	80	1,810	302	52	97	46	5.7
2	28	124	211	210	130	80	1,810	318	44	90	33	7.0
3	26	130	168	150	130	100	1,940	312	235	78	43	19
4	22	110	302	125	120	140	1,440	318	160	76	29	9.2
5	20	79	295	120	115	400	1,040	287	125	76	40	28
6	26	93	279	110	110	600	836	193	104	73	31	15
7	20	106	326	105	100	430	740	209	154	66	30	7.7
8	20	101	257	130	90	400	597	204	180	47	28	26
9	30	118	211	160	90	350	644	208	114	55	34	32
10	17	104	134	200	90	320	644	169	88	52	20	32
11	18	101	158	180	85	270	620	432	81	39	19	28
12	20	89	138	175	85	240	1,220	282	75	54	25	15
13	21	69	131	175	90	220	1,590	232	162	42	19	17
14	22	124	118	170	85	200	1,090	201	193	42	25	19
15	16	139	115	160	80	170	885	179	377	44	15	20
16	21	110	110	150	80	180	851	160	278	45	27	19
17	36	80	102	125	80	190	1,530	146	200	41	14	23
18	37	66	97	120	75	450	1,140	134	190	35	20	45
19	37	66	96	130	75	370	910	118	383	29	22	19
20	30	67	96	150	75	300	885	113	1,220	40	11	22
21	26	54	87	130	75	250	764	106	656	29	19	22
22	28	94	87	150	80	220	574	106	551	40	17	13
23	78	126	90	340	80	200	551	118	420	26	12	25
24	94	98	83	325	80	180	528	103	270	28	22	21
25	217	91	136	225	80	170	620	96	263	35	19	21
26	210	91	121	180	80	190	551	91	245	29	8.0	24
27	134	110	110	200	80	250	490	87	244	73	26	7.7
28	148	123	100	180	80	680	415	79	224	96	17	25
29	110	126	95	170		550	304	75	211	78	30	25
30	115	324	90	160		650	306	70	140	61	34	27
31	136		85	150		814		58		46	4.7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	217	16	57.5	0.307	0.35
November	324	54	108	.578	.64
December	326	83	152	.813	.94
January	340	105	167	.893	1.03
February	140	75	91.4	.489	.51
March	814	80	311	1.66	1.91
April	1,940	304	911	4.87	5.43
May	432	58	178	.952	1.10
June	1,220	44	255	1.36	1.52
July	97	26	53.6	.287	.33
August	46	4.7	23.9	.128	.15
September	45	5.7	20.6	.110	.12
The year	1,940	4.7	193	1.03	14.03

Otter Creek at Center Rutland, Vt.

Location.- Water-stage recorder at highway bridge in Center Rutland, Rutland County, 100 feet below dam and 1 mile below mouth of East Creek.

Drainage area.- 307 square miles.

Records available.- May 1928 to September 1934.

Extremes.- Maximum discharge during year, 5,990 second-feet Apr. 13 (gage height, 8.66 feet); minimum mean daily discharge, 61 second-feet Sept. 16.
1928-34: Maximum discharge, 6,470 second-feet Apr. 18, 1933; minimum mean daily discharge, that of Sept. 16, 1934.

Records.- Records good except those for period of missing gage-height record Jan. 16-23 and those for period of ice effect Jan. 31 to Feb. 2, which are fair. Diurnal regulation. Seasonal storage on East Creek at Pittsford and Chittenden.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	353	1,070	512	320	195	1,490	755	223	202	115	77
2	222	464	550	1,100	280	191	2,030	705	355	213	107	64
3	218	421	448	920	236	204	2,480	822	911	234	127	76
4	194	335	667	769	217	302	2,280	1,130	695	297	110	110
5	213	318	536	466	259	2,110	1,890	980	450	201	85	115
6	166	251	571	412	224	3,860	1,530	782	364	240	125	129
7	228	266	863	426	191	2,100	1,230	730	740	213	100	100
8	165	233	658	775	171	1,020	1,070	682	477	148	92	76
9	182	239	470	782	161	782	1,340	551	311	234	95	169
10	176	210	270	512	202	571	1,570	731	334	202	102	220
11	180	186	305	419	195	441	1,650	1,510	340	167	68	114
12	171	197	281	366	202	395	3,620	909	324	186	66	147
13	189	247	246	341	208	369	4,920	658	671	185	114	148
14	144	465	262	309	197	388	2,930	624	637	232	91	179
15	128	371	289	363	197	444	2,090	535	918	230	102	116
16	169	220	274	350	199	459	1,970	477	584	184	100	61
17	256	210	270	320	193	459	2,880	449	376	198	82	192
18	417	219	322	290	168	956	2,980	409	388	196	70	319
19	301	259	300	270	154	994	2,280	384	755	176	66	160
20	237	255	270	260	154	645	2,010	299	1,730	165	102	170
21	171	192	297	240	164	501	1,810	366	1,160	122	83	172
22	166	453	292	280	170	453	1,260	402	950	172	85	166
23	618	610	261	310	179	326	1,100	606	682	154	91	142
24	499	380	208	571	183	299	1,100	440	482	164	93	148
25	765	313	520	551	175	267	2,040	371	455	157	78	173
26	543	262	446	426	166	364	2,340	321	409	86	62	128
27	390	462	331	385	175	1,000	1,130	324	347	556	98	176
28	582	382	353	326	187	2,280	1,130	328	332	299	104	166
29	462	383	310	448		1,810	892	304	303	266	110	155
30	460	888	298	388		1,270	836	244	254	223	106	299
31	360		319	360		863		250		169	88	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	765	128	294	0.958	1.10
November	888	186	334	1.09	1.22
December	1,070	208	408	1.33	1.53
January	1,100	240	460	1.50	1.73
February	320	154	197	.642	.67
March	3,860	191	849	2.77	3.19
April	4,920	836	1,938	6.31	7.04
May	1,510	244	583	1.90	2.19
June	1,730	223	565	1.84	2.05
July	556	86	209	.681	.79
August	127	62	94.1	.307	.35
September	319	61	149	.485	.54
The year	4,920	61	507	1.65	22.40

Otter Creek at Middlebury, Vt.

Location.- Water-stage recorder 150 feet above highway bridge at Middlebury, Addison County, 3½ miles below Middlebury River. Prior to Oct. 18, 1933, a chain gage on railroad bridge about 1,800 feet upstream, at present datum, was used.

Drainage area.- 628 square miles.

Records available.- April 1903 to May 1907, October 1910 to January 1920, October 1928 to September 1934.

Average discharge.- 18 years (1903-6, 1910-19, 1928-34), 942 second-feet.

Extremes.- Maximum discharge during year, 4,300 second-feet Apr. 18 (gage height, 5.81 feet); minimum, 130 second-feet Aug. 20 (gage height, 0.90 foot).
1903-1907, 1910-20, 1928-34: Maximum discharge, 10,100 second-feet Mar. 30, 1913 (gage height, 11.07 feet, referred to the chain gage); minimum, 93 second-feet Mar. 5, 1929.
Maximum known discharge, 13,600 second-feet Nov. 4, 1927 (gage height, 13.3 feet, referred to latest datum of chain gage).

Remarks.- Records good except those estimated by hydrographic comparison for periods of ice effect, Dec. 10-12, 14-15, 27-31, Jan. 17-22, Jan. 29 to Mar. 4, which are fair. Small seasonal storage in Chittenden Reservoir, on East Creek.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	305	706	1,480	573	540	370	2,590	2,440	440	496	345	207
2	268	657	1,430	1,480	480	400	3,300	2,180	405	433	279	192
3	285	706	1,020	1,660	450	410	3,630	1,890	713	440	243	148
4	305	671	935	1,340	420	850	3,520	1,840	1,140	387	259	180
5	285	587	1,140	1,060	400	2,460	3,520	1,790	980	433	231	225
6	305	531	1,100	920	420	2,750	3,520	1,660	808	440	195	225
7	305	489	1,220	868	350	2,590	3,410	1,430	980	468	210	267
8	285	496	1,300	1,100	320	2,490	3,300	1,300	1,100	399	219	267
9	305	454	1,100	1,480	300	2,490	3,190	1,140	808	320	213	249
10	325	454	640	1,300	360	2,440	3,080	1,140	629	399	222	243
11	305	426	570	1,060	360	2,280	2,970	1,560	650	369	234	363
12	285	375	550	852	370	2,080	3,190	1,740	650	320	195	320
13	250	363	510	741	370	1,790	3,520	1,560	838	320	160	275
14	250	615	480	671	380	1,480	3,300	1,260	1,180	405	172	275
15	235	770	470	650	380	1,220	3,410	1,100	1,430	426	210	310
16	220	622	468	699	380	1,100	3,630	958	1,430	387	195	271
17	250	517	503	650	370	1,060	4,180	875	1,180	375	188	231
18	510	489	538	610	360	1,430	4,300	792	868	345	188	340
19	580	440	606	530	320	1,560	4,180	720	845	305	158	468
20	496	426	566	540	320	1,560	4,180	685	1,610	335	138	340
21	461	447	524	550	320	1,480	4,180	615	1,980	335	170	259
22	363	629	538	540	330	1,300	4,070	685	1,980	267	201	249
23	531	868	538	510	340	1,060	3,850	815	1,840	249	182	246
24	972	905	489	830	340	838	3,630	905	1,480	259	180	237
25	972	720	552	1,140	340	741	3,410	762	1,060	259	172	275
26	1,140	594	860	1,020	330	699	3,190	650	882	255	155	279
27	1,020	580	700	868	340	1,160	3,080	580	770	267	148	259
28	898	852	620	762	340	2,130	2,970	573	685	720	175	275
29	950	755	580	690		2,030	2,860	615	636	629	219	320
30	822	980	550	620		2,030	2,640	524	573	489	225	283
31	778		550	540		2,130		440		440	210	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,140	220	492	0.783	0.90
November	980	363	604	.962	1.07
December	1,480	468	746	1.19	1.37
January	1,660	510	866	1.38	1.59
February	540	300	369	.588	.61
March	2,750	370	1,562	2.49	2.87
April	4,300	2,590	3,460	5.51	6.15
May	2,440	440	1,136	1.81	2.09
June	1,980	405	1,019	1.62	1.81
July	720	249	386	.615	.71
August	345	138	203	.323	.37
September	468	148	269	.428	.48
The year	4,300	138	926	1.47	20.02

Winooski River at Montpelier, Vt.

Location.- Water-stage recorder three-eighths of a mile above mouth of Dog River and 1 mile downstream from depot in Montpelier, Washington County. Zero of gage is 499.97 feet above mean sea level.

Drainage area.- 420 square miles.

Records available.- May 1909 to September 1923, August 1928 to September 1934.

Average Discharge.- 15 years (1914-23, 1928-34), 567 second-feet.

Extremes.- Maximum discharge during year, 13,600 second-feet Apr. 12 (gage height, 13.91 feet); minimum, 19 second-feet Sept. 4 (gage height, 2.64 feet).

1909-23, 1928-34: Maximum discharge, 20,200 second-feet Apr. 7, 1912 (gage height, about 16.7 feet, present datum); minimum, 6 second-feet Sept. 30, 1921 (gage height, 2.58 feet).

Maximum discharge known, 57,000 second-feet Nov. 3, 1927 (gage height, 27.1 feet).

Remarks.- Records good. Stage-discharge relation affected by ice Dec. 12 to Mar. 31. Complete storage on 24 square miles and considerable diurnal fluctuation caused by several small plants above.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	301	823	120	140	160	2,760	1,020	154	113	153	112
2	90	250	439	210	180	170	3,680	916	136	132	94	69
3	54	220	343	270	140	150	4,080	796	161	192	152	62
4	86	231	333	280	120	200	3,090	950	171	171	172	51
5	80	166	287	230	100	500	2,600	836	228	128	174	158
6	105	160	266	200	120	1,050	2,320	730	221	183	144	166
7	168	149	338	200	150	860	1,960	796	313	162	178	103
8	109	138	387	230	110	660	2,110	757	191	173	140	63
9	119	123	213	260	130	550	2,760	583	144	137	146	357
10	76	143	132	240	110	470	3,310	910	130	180	98	376
11	115	130	195	200	70	360	3,310	950	199	177	88	188
12	103	106	200	210	70	310	6,190	652	212	176	56	146
13	86	101	180	190	150	300	6,780	522	268	198	102	118
14	60	123	170	160	120	370	2,870	492	387	282	127	83
15	69	158	180	190	140	360	2,320	546	353	252	153	71
16	98	153	180	220	110	360	2,580	457	364	178	116	78
17	70	138	160	260	120	350	5,610	359	304	193	107	449
18	160	125	110	240	110	800	3,360	305	216	176	86	603
19	182	123	160	270	140	900	2,600	271	246	164	51	297
20	115	120	200	240	140	720	2,700	266	672	164	104	187
21	86	118	220	180	150	640	2,160	262	376	266	122	140
22	86	149	200	150	160	500	1,820	328	252	140	126	163
23	252	287	180	160	170	380	1,440	547	189	159	140	85
24	322	209	140	190	140	360	1,480	397	112	152	148	132
25	239	160	150	210	120	380	3,280	317	186	152	150	127
26	242	125	160	230	110	320	1,960	297	230	143	78	101
27	206	192	200	210	120	880	1,550	299	174	148	54	86
28	451	216	150	180	140	2,000	1,400	225	146	380	124	86
29	330	213	120	150		1,800	1,140	228	182	388	147	81
30	279	710	80	180		1,900	1,020	190	158	215	128	118
31	246		60	180		1,700		172		154	125	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	451	47	154	0.367	0.42
November	710	101	185	.440	.49
December	823	60	224	.533	.61
January	280	120	208	.495	.57
February	180	70	127	.302	.31
March	2,000	150	660	1.57	1.81
April	6,780	1,020	2,801	6.67	7.44
May	1,020	172	528	1.26	1.45
June	672	112	236	.562	.63
July	388	113	188	.448	.52
August	178	51	121	.288	.33
September	603	51	162	.386	.43
The year	6,780	47	465	1.11	15.01

Winooski River near Essex Junction, Vt.

Location.- Water-stage recorder half a mile below mouth of Muddy Brook, 2 miles southwest of Essex Junction, Chittenden County.

Drainage area.- 1,070 square miles.

Records available.- October 1928 to September 1934.

Extremes.- Maximum discharge during year, 31,600 second-feet Apr. 13 (gage height, 17.32 feet); minimum mean daily discharge, 95 second-feet Sept. 16.
1928-34: Maximum discharge, 34,600 second-feet Apr. 19, 1933; minimum mean daily discharge, that of Sept. 16, 1934.
Maximum discharge known, 116,000 second-feet Nov. 4, 1927 (gage height 50.4 feet, from flood marks).

Remarks.- Records good. Discharge estimated, owing to ice effect Dec. 11 to Mar. 31 and for period of no record Aug. 9 to Sept. 10. Considerable diurnal regulation at low stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	119	997	3,140	620	410	250	8,690	2,740	480	282	484	100
2	289	1,140	1,910	1,080	520	340	12,200	2,950	398	393	296	100
3	272	948	1,050	1,000	490	480	16,500	2,720	228	340	263	100
4	268	1,080	1,250	890	440	890	8,650	2,650	404	234	373	140
5	266	793	1,070	760	300	2,730	8,670	2,530	416	232	208	120
6	286	727	1,040	700	410	3,250	6,430	2,330	513	193	360	110
7	128	640	1,330	820	380	3,180	4,850	2,200	622	198	262	300
8	125	546	1,260	1,030	380	2,000	4,850	2,300	561	200	326	120
9	384	506	738	970	360	1,530	5,510	1,770	335	400	388	500
10	272	482	477	890	370	1,200	8,030	2,030	230	334	260	1,000
11	534	479	400	810	330	1,130	8,450	2,990	407	280	140	545
12	398	202	440	710	220	1,030	14,200	2,000	434	240	100	400
13	302	496	380	730	320	880	28,000	1,560	518	354	280	361
14	201	596	470	480	340	1,030	9,710	1,420	695	230	230	235
15	136	706	360	560	330	1,030	5,950	1,150	1,080	236	200	218
16	223	487	440	530	300	1,040	5,730	990	1,100	316	180	95
17	601	462	440	620	340	1,130	14,600	1,210	542	293	200	524
18	597	368	500	620	290	2,250	11,600	1,020	601	382	100	1,220
19	456	244	470	610	200	2,500	7,590	552	842	292	100	938
20	626	490	460	640	300	1,910	7,590	502	996	235	240	500
21	266	439	500	590	310	1,440	6,190	800	1,280	328	220	558
22	158	691	490	550	350	1,250	4,450	693	1,050	198	200	321
23	901	979	440	480	430	880	3,670	1,180	360	357	220	182
24	1,040	978	540	650	360	970	3,950	1,130	368	262	180	305
25	814	632	710	700	280	930	6,190	917	517	254	100	351
26	718	525	620	740	220	900	5,040	702	528	230	100	283
27	704	760	600	620	260	2,850	3,580	358	570	203	220	295
28	1,120	710	480	570	270	12,000	3,400	694	366	288	200	228
29	1,150	659	460	560		6,800	2,990	712	372	876	180	229
30	950	1,150	440	530		5,400	2,540	318	310	618	180	176
31	744		450	570		4,200		429		382	180	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,150	119	485	0.453	0.52
November	1,150	202	664	.621	.69
December	3,140	360	753	.704	.81
January	1,080	350	691	.646	.74
February	520	200	359	.317	.33
March	12,000	250	2,174	2.03	2.34
April	28,000	2,540	7,923	7.40	8.26
May	2,990	318	1,469	1.37	1.58
June	1,280	228	571	.534	.60
July	876	193	312	.292	.34
August	484	100	225	.210	.24
September	1,220	95	352	.329	.37
The year	28,000	95	1,327	1.24	16.82

Dog River at Northfield, Vt.

Location.- Water-stage recorder at highway bridge at Norwich University, Northfield, Washington County, 1 mile above Union Brook.

Drainage area.- 52 square miles.

Records available.- May 1909 to October 1920, October 1928 to September 1934.

Average discharge.- 15 years (1911-20, 1928-34), 79.7 second-feet.

Extremes.- Maximum discharge during year, 3,090 second-feet Apr. 12 (gage height, 7.66 feet); minimum discharge, 2.3 second-feet Aug. 20-24.
1910-20, 1928-34: Maximum discharge, 3,400 second-feet Mar. 25, 1913 (gage height, 8.50 feet); minimum discharge (estimated), 2.0 second-feet several times during August, September 1929.
Maximum known discharge, 8,000 second-feet Nov. 3, 1927 (gage height, 10.9 feet)

Remarks.- Records good except those estimated, Dec. 27 to Jan. 12, Jan. 30 to Mar. 15, which are fair. Stage-discharge relation affected by ice Feb. 19.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	33	71	20	26	15	300	104	21	9.8	4.3	3.0
2	5.9	27	40	27	24	15	616	93	21	9.8	3.9	2.9
3	6.3	26	44	48	23	20	587	91	21	9.4	5.8	2.9
4	6.3	22	40	39	23	30	440	100	20	9.4	8.2	3.2
5	6.3	18	34	26	22	50	395	84	18	8.5	7.6	4.3
6	12	16	40	25	21	100	326	74	19	8.5	6.1	4.3
7	10	15	41	27	20	150	260	81	31	8.5	5.3	4.3
8	8.6	14	35	32	19	95	291	75	20	7.9	4.7	4.5
9	7.6	13	25	33	19	80	461	65	16	6.7	4.1	21
10	7.6	13	17	33	18	65	505	106	18	6.1	4.1	11
11	7.2	12	21	30	18	60	500	91	18	5.8	3.9	7.6
12	6.8	12	20	27	18	55	1,410	72	16	5.8	3.7	6.4
13	6.9	13	17	26	18	50	833	65	31	5.8	3.5	5.5
14	6.9	18	18	28	17	45	455	59	35	7.9	3.2	5.3
15	6.6	14	18	23	17	45	368	56	33	6.9	3.4	5.1
16	6.3	11	18	25	16	43	513	52	28	6.4	3.5	5.3
17	7.5	11	19	25	15	42	926	48	22	5.8	3.4	27
18	9.9	12	21	24	15	128	500	46	17	5.4	2.9	19
19	8.8	13	20	26	15	91	395	44	32	5.5	2.6	11
20	8.2	13	19	26	15	76	377	41	56	6.7	2.4	8.2
21	7.8	12	19	25	15	59	278	41	34	6.1	2.3	7.0
22	7.8	21	19	26	15	50	224	41	26	5.1	2.3	5.8
23	14	26	18	27	15	45	207	41	19	4.7	2.4	6.1
24	14	17	19	29	16	41	224	37	15	4.3	2.8	6.4
25	18	16	27	29	15	41	310	35	14	4.3	6.1	6.1
26	15	15	25	28	15	40	202	34	13	4.5	3.9	5.8
27	16	20	22	27	15	139	173	33	12	5.8	3.2	5.8
28	30	18	20	28	15	279	150	30	11	8.2	3.9	6.4
29	27	18	19	28		168	127	27	9.8	7.3	4.1	7.0
30	23	139	19	28		141	115	24	9.0	5.8	3.7	9.8
31	24		19	26		145		22		4.7	3.2	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	30	5.5	11.2	0.215	0.25
November	139	11	20.9	.402	.45
December	71	17	25.9	.498	.57
January	48	20	28.1	.540	.62
February	26	15	17.8	.342	.36
March	279	15	77.5	1.49	1.72
April	1,410	115	416	8.00	8.93
May	106	22	58.5	1.12	1.29
June	56	9.0	21.9	.421	.47
July	9.8	4.3	6.69	.129	.15
August	8.2	2.3	4.02	.077	.09
September	27	2.9	7.60	.146	.16
The year	1,410	2.3	57.7	1.11	15.06

Mad River near Moretown, Vt.

Location.- Water-stage recorder at highway bridge 2.4 miles below Moretown, Washington County.

Drainage area.- 139 square miles.

Records available.- November 1928 to September 1934.

Extremes.- Maximum discharge during year, 8,720 second-feet Apr. 12 (gage height, 10.20 feet); minimum, 5.8 second-feet Sept. 12 (gage height, 2.97 feet).
1928-34: Maximum discharge, that of Apr. 12, 1934; minimum, 1.4 second-feet Oct. 1, 1930.
Maximum known stage, about 20.5 feet Nov. 3-4, 1927.

Remarks.- Records good except those estimated, which are fair. Discharge estimated, for periods of no record, Oct. 1-12, and of ice effect, Dec. 11 to Feb. 23, Feb. 25-28, Mar. 4-9, 11-28. Considerable diurnal regulation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	273	468	110	90	74	1,420	435	55	29	23	13
2	57	215	425	180	90	104	1,480	486	53	49	23	7.0
3	40	282	376	270	90	134	1,290	472	46	31	36	14
4	26	217	208	210	85	170	939	472	49	17	121	14
5	40	154	168	130	85	380	895	415	49	35	55	24
6	33	126	242	90	85	1,000	725	367	53	21	47	33
7	33	108	302	100	85	800	610	394	122	24	40	25
8	20	101	191	120	85	500	626	312	62	33	29	9.9
9	33	88	136	130	85	300	864	245	50	35	28	221
10	48	85	56	130	80	168	1,010	504	56	25	25	98
11	40	70	45	120	85	170	1,080	415	62	24	12	52
12	35	72	40	105	110	170	4,070	295	54	17	16	33
13	38	74	40	100	95	150	2,180	240	136	19	31	28
14	29	151	40	120	85	165	1,070	212	212	23	18	30
15	29	95	40	135	80	170	868	188	245	10	18	22
16	38	77	55	130	80	175	1,260	165	152	30	14	22
17	33	74	60	115	80	200	2,780	146	115	31	19	278
18	132	90	70	95	80	310	1,480	137	83	20	16	243
19	72	85	80	100	85	280	1,220	121	144	17	9.2	77
20	55	79	70	110	80	250	1,240	108	348	17	19	58
21	47	67	70	100	70	200	859	104	172	20	11	48
22	41	235	80	95	80	160	651	150	124	11	13	40
23	244	240	80	110	70	140	618	194	85	27	15	40
24	154	117	75	125	59	150	775	126	70	18	14	41
25	141	120	70	110	60	150	2,050	104	66	14	13	37
26	111	120	110	100	60	150	634	92	53	14	8.8	34
27	108	130	100	100	60	1,100	546	86	50	17	22	27
28	211	86	95	95	60	980	486	81	49	137	19	29
29	168	127	85	95		851	408	72	46	69	17	32
30	136	675	75	95		593	374	59	35	39	14	50
31	152		70	90		531		61		27	19	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	244	20	77.0	0.554	0.64
November	675	67	148	1.06	1.18
December	468	40	130	.935	1.08
January	270	90	120	.863	.99
February	110	59	80.0	.576	.60
March	1,100	74	344	2.47	2.85
April	4,070	374	1,150	8.27	9.23
May	504	59	234	1.68	1.94
June	348	35	96.5	.694	.77
July	137	10	29.0	.209	.24
August	121	8.8	24.7	.178	.21
September	278	7.0	56.0	.403	.45
The year	4,070	7.0	207	1.49	20.18

Lamoille River at Johnson, Vt.

Location.- Water-stage recorder at falls 0.9 mile above original location at bridge in Johnson, Lamoille County, and 1 1/8 miles above mouth of Gihon River.

Drainage area.- 289 square miles.

Records available.- July 1910 to December 1913, September 1928 to September 1934.

Extremes.- Maximum discharge during year, 7,240 second-feet Apr. 13 (gage height, 13.22 feet); minimum, 16 second-feet Oct. 2 (gage height, 1.04 feet).
1910-13, 1928-34: Maximum discharge recorded, about 11,700 second-feet Apr. 8, 1912; minimum, 15 second-feet Aug. 20, 1933.

Remarks.- Records good except those estimated and those above 4,500 second-feet, which are fair. Discharge estimated for periods of no record and of ice effect, Nov. 18 to Mar. 17. Slight diurnal fluctuation at low stages caused by power plant above.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	234	1,040	110	150	110	1,600	741	222	104	168	57
2	90	262	471	150	130	100	2,440	741	173	120	159	38
3	79	374	332	250	140	120	3,750	698	99	136	120	28
4	83	276	340	260	120	110	2,860	471	88	106	264	62
5	84	155	286	200	110	350	2,360	382	146	94	198	70
6	92	209	279	190	120	600	2,180	515	148	105	128	45
7	31	166	268	230	140	320	2,000	720	144	153	148	60
8	68	138	271	250	110	600	2,120	785	150	94	138	124
9	148	181	252	200	120	430	2,620	552	166	117	155	201
10	158	143	190	190	100	370	3,460	593	84	135	142	300
11	139	77	210	200	110	340	3,920	698	103	92	112	231
12	207	71	210	210	90	360	4,690	507	137	91	47	193
13	181	171	200	190	130	310	5,840	408	188	100	106	180
14	141	212	150	150	120	350	2,740	370	264	139	154	145
15	45	213	100	160	120	340	2,000	389	336	299	160	131
16	73	174	140	180	120	310	2,380	348	480	228	118	80
17	151	160	160	190	100	230	5,220	144	461	179	104	241
18	118	150	100	210	80	435	3,750	179	288	176	110	432
19	100	150	130	210	100	666	2,720	186	279	144	60	277
20	150	200	120	180	110	602	2,780	174	448	138	99	288
21	139	240	150	140	130	499	2,010	157	432	88	179	270
22	94	190	150	160	110	467	1,420	136	304	82	112	148
23	291	330	160	190	100	425	1,240	361	232	107	114	156
24	386	390	130	130	100	319	1,570	290	125	126	91	140
25	194	280	140	90	80	231	2,460	241	181	134	103	172
26	191	150	200	110	130	288	1,740	244	224	139	125	137
27	248	250	190	150	110	523	1,320	204	208	91	93	132
28	337	350	200	160	120	1,330	1,240	240	145	420	98	145
29	335	240	180	190		1,390	970	194	129	811	41	217
30	271	500	140	180		1,130	808	110	124	318	60	146
31	276		100	170		1,020		129		216	64	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	386	31	160	0.554	0.64
November	500	71	221	.765	.85
December	1,040	100	226	.782	.90
January	260	90	181	.626	.72
February	150	80	114	.394	.41
March	1,390	100	490	1.70	1.96
April	5,840	808	2,540	8.79	9.81
May	785	110	384	1.33	1.53
June	480	84	217	.751	.84
July	811	82	170	.588	.68
August	264	41	122	.422	.49
September	432	28	162	.561	.63
The year	5,840	28	414	1.43	19.46

Lamoille River near Milton, Vt.

Location.- Water-stage recorder 2½ miles north of Milton, Chittenden County.

Drainage area.- 692 square miles.

Records available.- August 1929 to September 1934.

Extremes.- Maximum discharge during year, 16,600 second-feet Apr. 13 (gage height, 10.27 feet); minimum, 65 second-feet Aug. 19 (gage height 0.82 foot).
1929-34: Maximum discharge, that of Apr. 13, 1934; minimum, 49 second-feet July 30, 1933 (gage height, 0.69 foot).

Remarks.- Records excellent except those estimated, which are fair. Discharge estimated for periods of no record and of ice effect, Nov. 30, Dec. 1, Dec. 20 to Apr. 1, and Sept. 23-30. Diurnal regulation from plants above.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	636	1,750	470	440	310	4,100	1,780	316	228	324	108
2	186	678	1,220	550	420	320	6,320	1,900	352	296	288	108
3	197	722	990	1,240	400	330	7,160	1,780	316	288	264	108
4	197	850	1,000	950	350	290	7,410	1,600	308	239	242	128
5	190	622	890	840	360	820	5,400	1,290	270	274	235	150
6	168	456	980	750	360	1,550	4,720	1,290	278	264	328	167
7	180	456	1,160	700	350	2,000	4,180	1,420	304	236	262	158
8	158	402	870	850	350	1,700	4,180	1,840	316	197	242	152
9	138	376	5 592	1,030	340	1,000	4,360	1,420	304	288	237	293
10	250	386	418	800	300	900	5,700	1,270	274	267	246	692
11	292	324	430	660	300	830	6,740	1,720	308	260	225	483
12	281	301	312	580	300	800	9,360	1,330	296	211	178	392
13	312	312	366	540	300	780	15,000	1,040	438	174	180	328
14	281	492	392	530	320	760	8,690	860	870	197	161	281
15	222	434	402	470	270	740	4,360	814	1,470	164	132	264
16	267	400	362	460	290	720	3,970	851	1,420	376	170	158
17	194	371	362	480	290	710	8,430	618	1,230	352	199	209
18	490	352	412	470	290	1,050	9,950	506	760	281	160	804
19	499	338	392	450	310	1,500	6,460	514	608	253	107	587
20	333	357	370	420	280	1,400	5,710	483	1,020	270	127	486
21	328	381	360	400	300	1,200	4,640	381	1,110	270	165	434
22	308	808	370	440	310	1,100	3,230	434	814	179	233	386
23	577	955	380	420	310	950	2,630	699	587	248	186	345
24	890	657	360	530	330	800	2,960	690	486	225	181	355
25	841	573	430	800	280	700	4,000	629	392	200	154	370
26	601	559	610	710	290	650	3,640	520	456	197	145	320
27	526	478	540	640	310	1,300	2,560	495	418	186	175	315
28	700	412	500	560	300	3,200	2,560	483	392	190	162	340
29	850	566	490	510		3,400	2,170	456	300	624	152	375
30	664	1,000	460	480		2,850	1,840	376	288	714	128	420
31	559		450	450		2,650		338		392	126	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	890	138	383	0.553	0.64
November	1,000	301	522	.754	.84
December	1,750	312	601	.868	1.00
January	1,240	400	619	.895	1.03
February	440	270	323	.467	.49
March	3,400	290	1,204	1.74	2.01
April	15,000	1,840	5,421	7.83	8.74
May	1,900	338	975	1.41	1.63
June	1,470	270	556	.803	.90
July	714	164	275	.397	.46
August	328	107	198	.286	.33
September	804	108	323	.467	.52
The year	15,000	107	947	1.37	18.59

Missisquoi River near North Troy, Vt.

Location.- Water-stage recorder just above Big Falls, 1½ miles below mouth of Jay Branch, and 2½ miles above North Troy, Troy County.

Drainage area.- 131 square miles.

Records available.- August 1931 to September 1934.

Extremes.- Maximum discharge during year, 3,400 second-feet Apr. 17 (gage height, 8.20 feet); minimum, 10 second-feet Aug. 22 (gage height, 0.81 foot).
1931-34: Maximum discharge, about 7,200 second-feet Oct. 7, 1932 (gage height, 12.26 feet); minimum, that of Aug. 22, 1934.

Remarks.- Records excellent except those estimated and those above 2,000 second-feet, which are fair. Discharge estimated for periods of no record and of ice effect, Nov. 13 to Mar. 29, Mar. 31 to Apr. 10, Apr. 20-24, and May 2-21. Some diurnal regulation from small power plant above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	260	530	170	100	60	860	568	53	49	25	16
2	43	223	420	280	95	60	1,550	550	44	65	23	19
3	38	322	300	250	90	100	1,200	470	46	50	26	19
4	33	300	240	160	90	400	1,000	380	56	31	30	18
5	29	172	200	140	95	700	930	350	43	34	29	38
6	30	120	240	140	85	600	900	350	42	31	30	43
7	32	99	220	160	80	500	890	450	44	39	29	28
8	32	95	200	250	75	400	880	560	47	41	25	24
9	37	87	150	240	70	340	920	400	32	38	21	223
10	48	83	160	150	65	250	1,040	450	91	30	21	125
11	60	72	130	120	65	200	1,700	380	71	31	17	67
12	55	73	100	110	65	170	1,790	330	55	28	19	46
13	48	80	90	90	75	140	2,480	250	79	27	18	31
14	32	230	80	90	70	120	945	250	149	25	17	30
15	31	200	75	80	65	105	798	220	297	28	17	20
16	41	150	75	70	70	100	1,140	200	178	32	17	27
17	65	110	80	70	70	95	2,990	180	107	32	17	63
18	173	100	110	65	60	330	1,830	160	79	27	15	130
19	110	90	160	65	55	480	1,360	140	72	23	14	78
20	87	85	140	65	60	330	1,000	120	205	32	17	51
21	64	80	120	65	65	200	600	110	122	30	15	42
22	60	150	100	70	65	150	500	103	87	26	14	24
23	268	270	100	90	60	120	480	448	63	27	17	37
24	156	200	110	150	60	95	700	181	58	23	13	43
25	133	130	180	130	60	85	1,180	118	131	20	15	34
26	115	148	220	120	60	80	586	96	86	19	15	28
27	113	180	170	100	65	360	643	88	65	18	15	25
28	296	150	130	100	65	1,450	568	80	53	42	13	31
29	214	140	120	130		1,240	401	69	47	39	16	29
30	142	600	110	110		798	408	58	36	30	27	36
31	146		110	110		660		68		26	23	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	296	29	89.1	0.680	0.78
November	600	72	166	1.27	1.42
December	530	75	167	1.27	1.46
January	280	65	127	.969	1.12
February	100	55	71.4	.545	.57
March	1,450	60	346	2.64	3.04
April	2,990	401	1,076	8.21	9.16
May	568	58	264	2.02	2.33
June	297	32	84.6	.646	.72
July	65	18	32.0	.244	.28
August	30	13	19.7	.150	.17
September	223	16	47.5	.363	.40
The year	2,990	13	207	1.58	21.45

MISSISQUOI RIVER NEAR RICHFORD, VT.

Location.- Water-stage recorder 1 2/3 miles above mouth of Trout River, 3 miles south of Richford, Franklin County, and 3¾ miles below mouth of North Branch.

Drainage area.- 445 square miles.

Records available.- May 1909 to November 1910, July 1911 to September 1923, October 1928 to September 1934.

Average discharge.- 14 years (1911-19, 1928-34), 916 second-feet.

Extremes.- Maximum discharge during year, 8,090 second-feet Apr. 12-13; maximum gage height, 14.20 feet (affected by ice) Apr. 2; minimum discharge, 38 second-feet Aug. 24 to 29 (gage height, 2.21 feet).
1909-10, 1911-23, 1928-34: Maximum discharge, 13,000 second-feet Apr. 7, 1923 (gage height, 14.38 feet); minimum, 8 second-feet July 14, 1911.
Maximum discharge known, 45,000 second-feet, flood of November 1927 (gage height, 23.1 feet).

Remarks.- Records good except those estimated for periods of ice effect Nov. 15 to Dec. 2, Dec. 10 to Apr. 6, which are fair. Slight diurnal regulation at low stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	614	1,400	600	340	250	3,800	1,500	182	263	89	43
2	118	675	1,240	820	340	250	5,600	1,370	165	278	81	49
3	123	860	1,020	780	320	360	5,150	1,220	154	225	93	49
4	109	890	860	700	300	900	4,050	1,080	138	182	123	48
5	98	725	800	600	330	1,600	3,750	955	135	143	109	66
6	98	526	830	540	300	2,300	3,600	865	133	133	113	79
7	83	432	860	600	290	2,050	3,620	1,160	133	133	102	75
8	83	382	692	720	290	1,750	3,620	1,370	130	138	96	83
9	87	361	526	690	280	1,450	3,730	955	128	123	96	275
10	92	340	500	600	280	1,180	4,040	810	363	113	87	491
11	168	289	470	540	270	1,000	4,780	925	384	102	77	300
12	171	332	440	510	280	880	5,770	755	267	98	71	194
13	139	356	410	490	300	760	6,920	605	340	89	66	148
14	109	628	360	490	290	700	5,510	552	620	98	55	123
15	111	590	300	470	280	680	3,620	514	955	85	46	107
16	107	480	300	460	290	620	3,440	489	838	85	44	96
17	133	420	300	450	290	600	6,350	414	782	79	44	120
18	411	380	360	430	260	1,120	5,900	380	524	73	46	236
19	403	350	410	400	240	1,500	4,780	350	464	73	44	263
20	316	330	380	380	240	1,360	4,150	311	700	71	46	203
21	256	320	370	360	260	1,100	3,100	285	675	89	43	157
22	217	600	350	350	280	920	2,060	604	782	100	40	128
23	580	700	340	380	280	750	1,660	925	505	79	40	121
24	603	590	380	500	260	570	2,240	675	359	81	38	111
25	576	460	490	450	250	470	3,100	464	423	79	38	116
26	488	470	670	430	250	400	2,250	367	436	71	38	113
27	450	530	620	400	260	1,500	1,740	315	315	69	38	98
28	771	520	570	400	270	3,000	1,780	281	253	67	38	98
29	830	500	510	450		2,860	1,370	246	256	104	40	96
30	608	1,500	460	420		2,680	1,160	219	225	121	40	113
31	516		430	370		2,460		191		98	40	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	830	83	289	0.649	0.75
November	1,500	289	538	1.21	1.35
December	1,400	300	569	1.28	1.48
January	820	350	509	1.14	1.31
February	340	240	283	.636	.66
March	3,000	250	1,226	2.76	3.18
April	6,920	1,160	3,755	8.44	9.42
May	1,370	191	675	1.52	1.75
June	955	128	392	.881	.98
July	278	67	114	.256	.30
August	123	38	63.3	.142	.16
September	491	43	140	.315	.35
The year	6,920	38	711	1.60	21.69

Lake Memphremagog at Newport, Vt.

Location.- Chain gage on concrete highway bridge in Newport, Orleans County. Zero of gage is 673.15 feet above mean sea level.

Records available.- May 1931 to September 1934.

Extremes.- Maximum gage height recorded, 10.92 feet Apr. 20; minimum, 6.79 feet Oct. 16, 17.
1931-34: Maximum gage height recorded, 12.92 feet Apr. 20, 1933; minimum, that of Oct. 16, 17, 1933.

Gage height, in feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.06	7.06	7.10	7.36	7.74	7.75	8.68	10.64	9.72	9.57	9.59	7.68
2	7.06		7.14	7.32	7.74	7.75	8.87	10.65	9.66	9.53	8.57	7.67
3	7.06	6.96	7.20	7.32	7.74	7.75	9.24	10.65	9.60	9.49	8.54	7.67
4	7.06	6.96	7.27	7.32	7.74	7.75	9.55	10.65	9.56	9.46	8.51	7.67
5	7.07	6.98	7.28	7.54	7.74	7.72	9.72	10.64	9.54	9.43	8.48	7.65
6	7.07	6.98	7.30	7.60	7.74	7.72	9.82	10.64	9.51	9.38	8.46	7.62
7	7.05	6.98	7.30	7.60	7.74	7.72	9.87	10.64	9.48	9.36	8.45	7.58
8	7.02	6.98	7.30	7.60	7.74	7.74	9.91	10.63	9.44	9.33	8.41	7.56
9	6.98	7.00	7.30	7.64	7.74	7.78	9.96	10.62	9.43	9.31	8.39	7.56
10	6.98	7.06	7.30	7.66	7.74	7.82	10.07	10.62	9.54	9.24	8.37	7.56
11	6.96	7.04	7.30	7.68	7.74	7.82	10.14	10.60	9.48	9.19	8.35	7.56
12	6.90	7.02	7.30	7.68	7.74	7.84	10.38	10.57	9.50	9.15	8.35	7.56
13	6.86	7.04	7.31	7.72	7.74	7.87	10.62	10.53	9.48	9.10	8.29	7.55
14	6.83	7.04	7.31	7.72	7.74	7.92	10.68	10.46	9.47	9.09	8.26	7.56
15		7.04	7.31	7.74	7.75	7.92	10.75	10.38	9.50	9.08	8.22	7.58
16	6.79	7.00	7.31	7.74	7.75	7.96	10.76	10.27	9.56	9.03	8.19	7.59
17	6.79	6.98	7.32	7.74	7.75	7.98	10.81	10.17	9.57	8.98	8.16	7.61
18	6.84	6.98	7.33	7.74	7.75	7.98	10.88	10.12	9.58	8.94	8.12	7.62
19	6.84	6.98	7.33	7.74	7.75	7.98	10.91	10.08	9.59	8.85	8.09	7.60
20	6.84	6.98	7.33		7.75	7.98	10.92	10.06	9.64	8.82	8.05	7.55
21		6.98	7.34	7.74	7.75	7.99	10.90	10.02	9.64	8.90	8.01	7.53
22	6.82	6.96	7.34	7.74	7.75	7.99	10.82	10.00	9.64	8.91	7.98	7.50
23	6.82	6.96	7.34	7.74	7.75	7.99		9.98	9.63	8.85	7.93	7.48
24	6.90	6.96	7.34	7.74	7.75	7.99		9.97	9.62	8.81	7.91	7.45
25	7.00	6.96	7.34	7.74	7.75	8.00	10.48	9.94	9.60	8.79	7.89	7.42
26	6.98	6.96	7.34	7.74	7.75	8.00	10.48	9.91	9.60	8.77	7.84	7.39
27		6.96		7.74	7.75	8.02	10.52	9.87	9.59	8.75	7.80	7.33
28	6.96	6.96	7.34	7.74	7.75	8.11	10.54	9.83	9.59	8.74	7.75	7.37
29	6.99	6.96	7.34	7.74		8.18	10.68	9.79	9.58	8.73	7.73	7.37
30	7.00	7.00	7.34	7.74		8.28	10.62	9.76	9.58	8.69	7.71	7.37
31	7.02		7.34	7.74		8.42		9.75		8.63	7.69	

Note.- No record Oct. 15, 21, 27, Nov. 2, Dec. 27, Jan. 20, Apr. 23, 24. Records taken from top of ice Nov. 12 to Apr. 10.

Clyde River at Newport, Vt.

Location.- Water-stage recorder just below plant of Newport Electric Light Co., Newport, Orleans County, 1¾ miles above mouth.

Drainage area.- 140 square miles.

Records available.- May 1909 to September 1924, November 1928 to September 1934.

Average discharge.- 15 years (1909-19, 1929-34), 242 second-feet.

Extremes.- Maximum discharge during year, 1,500 second-feet Apr. 19 (gage height, 4.27 feet); minimum (regulated), about 1 second-foot July 8 (gage height, 1.24 feet).

1909-24, 1928-34: Maximum discharge, 2,780 second-feet Apr. 19, 1933 (gage height, 5.19 feet). Practically no flow at various times when water was held back by dams.

Remarks.- Records good. Some diurnal regulation caused by power plant above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	142	166	*100	112	59	385	824	118	129	*85	80
2	82	140	168	104	108	73	493	758	109	125	80	73
3	84	136	166	105	97	50	668	713	100	120	85	60
4	86	141	174	109	98	69	731	695	103	103	80	69
5	74	126	177	106	103	118	749	686	85	101	75	63
6	74	134	168	109	96	129	749	660	85	88	80	64
7	83	130	163	110	106	76	731	634	80	95	90	68
8	80	130	155	112	112	142	722	607	78	69	87	70
9	76	118	150	114	104	206	722	565	81	93	86	80
10	76	113	141	113	78	218	740	541	75	84	87	69
11	73	111	121	117	86	237	786	524	80	81	88	70
12	71	92	122	114	85	218	934	486	80	79	77	78
13	73	96	122	110	90	230	1,190	486	79	78	91	83
14	77	98	120	111	82	228	1,260	419	73	80	94	83
15	75	98	113	106	79	205	1,180	426	79	74	92	86
16	69	97	112	110	80	200	1,060	372	85	82	94	81
17	81	99	113	113	62	192	1,080	167	104	82	81	84
18	71	107	122	102	74	192	1,280	88	127	77	73	86
19	72	85	116	105	78	188	1,440	140	145	77	86	77
20	76	94	111	103	80	200	1,430	188	152	79	87	83
21	86	92	116	84	65	196	1,420	173	153	82	84	80
22	85	95	110	93	62	224	1,360	180	155	63	67	113
23	126	103	95	81	86	177	1,200	205	151	*80	55	99
24	134	107	108	81	65	177	1,070	196	141	90	56	97
25	157	134	94	95	75	169	1,120	192	152	80	58	95
26	152	87	104	99	81	158	1,380	196	141	85	65	87
27	153	87	97	105	79	177	1,460	184	149	80	67	86
28	156	111	98	102	73	214	1,300	169	151	80	82	84
29	146	118	*100	100		237	1,090	161	143	80	69	87
30	149	151	*90	98		279	914	137	137	85	64	81
31	152		*110	109		326		128		85	84	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	157	69	97.5	0.696	0.80
November	151	85	112	.800	.89
December	177	90	127	.907	1.05
January	117	81	104	.743	.86
February	112	62	85.6	.611	.64
March	326	50	179	1.28	1.48
April	1,460	385	1,021	7.29	8.13
May	824	88	384	2.74	3.16
June	155	73	113	.807	.90
July	129	63	86.6	.619	.71
August	94	55	79.6	.564	.65
September	113	60	80.5	.575	.64
The year	1,460	50	205	1.46	19.91

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Discharge measurements of streams in the St. Lawrence River Basin made at points other than regular gaging stations during the year ending September 30, 1934, are listed in the following table:

Miscellaneous discharge measurements in the St. Lawrence River drainage basin during the year ending September 30, 1934

Date	Stream	Tributary to or diverting from-	Locality	Discharge
				Sec.-ft.
May 23	White Pigeon River	St. Joseph River	Mattville, Mich.	210
Jan. 24	Tittabawassee River	Saginaw River	Sanford, Mich.	1,960
Jan. 26	....do.....	....do.....	....do.....	705
Mar. 8	....do.....	....do.....	....do.....	1,960
May 3	Pine River...	Tittabawassee River	Midland, Mich.	279
Oct. 16	Middle River Rouge	River Rouge...	Detroit, Mich.	1.68
Mar. 16	....do.....	....do.....	....do.....	6.32
May 11	....do.....	....do.....	....do.....	15.2
June 27	....do.....	....do.....	....do.....	5.10
Sept.13	....do.....	....do.....	....do.....	5.87
Oct. 16	Lower River Rouge	....do.....	Dearborn, Mich.	1.96
Mar. 16	....do.....	....do.....	....do.....	4.40
May 10	....do.....	....do.....	....do.....	3.13
June 27	....do.....	....do.....	....do.....	2.23
Sept.12	....do.....	....do.....	....do.....	1.07
Jan. 4	Miami & Erie Canal	Jennings Creek	Delphos, Ohio	17.8
Apr. 2	....do.....	....do.....	....do.....	17.6
June 6	....do.....	....do.....	....do.....	8.81
July 19	....do.....	....do.....	....do.....	6.35
Aug. 15	....do.....	....do.....	....do.....	5.35
June 5	....do.....	Maumee River	Independence Dam near Defiance, Ohio.....	33.1
July 20	....do.....	....do.....	....do.....	39.2
May 11	Big Creek....	Cuyahoga River	Valley St. and Jennings Road, Cleveland, Ohio	8.00
July 26	....do.....	....do.....	....do.....	8.99
May 25	Seneca River	Lake Ontario	Jacks Reef, N. Y.	1,460

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