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Water-Supply Paper 924

SURFACE WATER SUPPLY *of the* UNITED STATES 1941

PART 4
ST. LAWRENCE RIVER BASIN

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In cooperation with the States of
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SURFACE WATER SUPPLY OF ST. LAWRENCE RIVER BASIN, 1941

SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1941. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 9,120 gaging stations in the United States and also at many gaging stations in Alaska and Hawaii. In July 1941, 4,850 gaging stations were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made at many other points.

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

DEFINITION OF TERMS

The units in which stream-flow data are presented in this report and other terms used herein are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

"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 draining from it in a given period were uniformly distributed on its surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

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

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

"Stage-discharge relation" is an abbreviation for the term "relation between gage height and discharge."

"Control" is a term used to designate a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural section, a reach of the channel, or an artificial structure.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurement of discharge, and general information used to supplement the records of stage 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. Typical structures in use at gaging stations are shown on plate 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily mean gage height to these rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements are used in applying the gage heights to the rating tables.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources, which necessitates the use of the "slope method" in which the slope or fall in a reach of the stream is a factor in the determination of discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage, and for them the rate of change of stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, which makes it impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for stations in the same or nearby basins. The days included in the periods of ice effect and the days during the winter period on which discharge measurements were made are indicated in the table by symbols referring to footnotes.

For most of the gaging stations on streams in the area covered by this report the data presented 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. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude determined from the best available maps, and information in regard to 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. Under "Extremes" are given 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 (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage

A. LITTLE WOLF RIVER AT ROYALTON, WIS.

B. BLACK RIVER NEAR BOONVILLE, N. Y.

GAGING-STATION STRUCTURES

recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given below the table of monthly discharge for some stations. This supplementary information is generally omitted for stations having drainage areas of less than 10 square miles or more than 10,000 square miles or if the peak discharges usually exceed the corresponding mean discharges for the day by less than 10 percent.

For stations equipped with nonrecording gages, the table of daily discharge gives the discharge in second-feet corresponding to once-daily readings of the gage or the mean of twice-daily readings. For flashy floods the daily mean discharge is determined from gage-height graphs based on gage readings made once or twice daily or oftener, as stated in the station description. For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing as an essential element a curve representing the stage-discharge relation at the station.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge and not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For a few of the more important lakes and reservoirs a table showing daily contents is given. A skeleton table of capacity at given stages is usually given in the first report in which data for a station are published but is omitted from succeeding reports.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily on (1) the permanency of the stage-discharge relation and (2) the accuracy of observations 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 or a higher percent.

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "run-off in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless

satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Figures of second-feet per square mile and run-off in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

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

The table of monthly discharge presents in summary the distribution of the flow past the station. The table of daily discharge affords opportunity for more detailed studies of the variation in flow. As further observations in each succeeding year may be expected to throw new light on data previously published, it should be borne in mind that such data are subject to revision in succeeding water-supply papers.

PUBLICATIONS

The results of stream-flow measurements are now published annually in 14 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

Part 1. North Atlantic slope basin (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi Rivsr).
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. Pacific slope basins in Washington and upper Columbia River Basin.
13. Snake River Basin.
14. Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be obtained or consulted as explained 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:

East of the Mississippi River:
Albany, N. Y., 526 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 5 North Rhodes Center.
Augusta, Maine, Statehouse.
Baton Rouge, La., 124 Geology Building, Louisiana State University.
Boston, Mass., 945 Post Office Building.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., House G, Dawson Row, University of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., Engineering Building, University of Maryland.
Columbia, S. C., 119 United States Courthouse.
Columbus, Ohio, 404 Engineering Experiment Station, Ohio State University.
Harrisburg, Pa., 490 Education Building.
Hartford, Conn., 225 Capitol Building, 410 Asylum Street.
Indianapolis, Ind., 511 Board of Trade Building.
Jackson, Miss., 208 Millsaps Building.

Louisville, Ky., 652 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
Ocala, Fla., 302 Post Office Building.
St. Paul, Minn., 808 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Urbana, Ill., 14 Post Office Annex, Elm Street.

West of the Mississippi River:
Austin, Tex., 302 West 15th Street.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 230 Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 40S Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 1404 Statehouse.
Los Angeles, Calif., G-31 United States Post Office and Courthouse.
Oklahoma City, Okla., 303 Capitol Office Building.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
St. Louis, Mo., 926 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 625 Market Street Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 1100 Washington Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

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

Records of flow of streams in the United States have been published in the reports tabulated as follows:

Stream-flow data in reports of the Geological Survey

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

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information...	1884 to Sept. 1890
12th A, pt. 2	....do.....	1884 to June 30, 1891.
13th A, pt. 3	....do.....	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871-93)..	1888 to Dec. 31, 1893.
B 131.....	Descriptions, measurements, gage heights, and ratings.	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140.....	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11.....	Gage heights (also gage heights for earlier years).	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895-96.
W 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River and Missouri River and tributaries above Kansas River.	1897.
W 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River and Missouri River and tributaries.	
W 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years).	1898.
W 35 to 39...	Descriptions, measurements, gage heights, and ratings.	1899.
21st A, pt. 4	Monthly discharge.....	1899.
W 47 to 52...	Descriptions, measurements, gage heights, and ratings.	1900.
22d A, pt. 4	Monthly discharge.....	1900.
W 65, 66.....	Descriptions, measurements, gage heights, and ratings.	1901.
W 75.....	Monthly discharge.....	1901.

Note.- Reports containing records for years after 1901 are given in table on page 6.

The table on the following page gives, by years and drainage basins, the numbers of the papers on surface water supply published from 1899 to 1941. The data for any particular station will, in general, be found in the reports covering the years during

Numbers of water-supply papers containing results of stream measurements, 1899-1941

(For basins included see p. 4)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1899 a...	35	b35, 36	36	36	36	c36, 37	37	37	d37, 38	38, e39	38, f39	38	38	38
1900 g...	47, h48	48	48, 149	49	49	49, j50	50	50	50	51	51	51	51	51
1901.....	65, 75	65, 75	65, 75	65, 75	k65, 66, 75	66, 75	k65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902.....	82	b82, 83	83	m82, 83	k83, 85	84	k83, 84	84	85	85	85	85	85	85
1903.....	97	b97, 98	98	97	k98, 99, n100	99	k98, 99	99	100	100	100	100	100	100
1904.....	o124, p125, q126	q126, 127	128	129	k128, 130	130, r131	k128, 131	132	133	133, s134	134	135	135	135
1905.....	o165, p166, q167	q167, 168	169	170	171	172	k169, 173	174	175, t177	176, s177	177	178	178	u177, 178
1906.....	o201, p202, q203	q203, 204	205	206	207	208	k205, 209	210	211, t213	212, s213	213	214	214	214
1907-8...	241	242	243	244	245	246	247	248	249	250, s251	251	252	252	252
1909.....	261	262	263	264	265	266	267	268	269	270, s271	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
1935.....	781	782	783	784	785	786	787	788	789	790	791	792	793	794
1936.....	801	802	803	804	805	806	807	808	809	810	811	812	813	814
1937.....	821	822	823	824	825	826	827	828	829	830	831	832	833	834
1938.....	851	852	853	854	855	856	857	858	859	860	861	862	863	864
1939.....	871	872	873	874	875	876	877	878	879	880	881	882	883	884
1940.....	891	892	893	894	895	896	897	898	899	900	901	902	903	904
1941.....	921	922	923	924	925	926	927	928	929	930	931	932	933	934

a Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in 21st Annual Report, part 4.
b James River only.
c Gallatin River.
d Green and Gunnison Rivers and Colorado River above Gunnison River.
e Mojave River only.
f Kings and Kern Rivers and south Pacific slope basins.
g Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Monthly discharge for 1900 in 22d Annual Report, part 4.
h Wissahickon and Schuylkill Rivers to James River.
i Scioto River.
j Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
k Tributaries of Mississippi River from east.
m Lake Ontario and tributaries to St. Lawrence River proper.
n Hudson Bay only.
o New England rivers only.
p Hudson River to Delaware River, inclusive.
q Susquehanna River to Yadkin River, inclusive.
r Platte and Kansas Rivers.
s The Great Basin in California, except Truckee and Carson River Basins.
t Below mouth of Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, 503, which contain records for the Ohio River Basin for those years.

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, the streams and points of measurement listed appearing in the same relative order as the streams and gaging stations in the body of the report. An index of the records obtained prior to 1904 has been published in Water-Supply Paper 119.

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 6), contains a summary of yearly discharge at gaging stations in the area covered by that report. Gaging stations at which 10 or more complete years of record have been collected are represented. These summaries are available also as separate reprints.

From time to time reports have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which have been revised), as well as some records not contained in the annual series of water-supply papers. The following table gives the numbers and titles of these reports, arranged in alphabetical order by States and drainage basins.

Reports containing compilation of discharge by States and drainage basins

Water-Supply Paper	Year ending	State or drainage basin and title
		STATE
107	1903	Alabama, Water powers of, with an appendix on stream measurements in Mississippi.
298	1912	California, Water resources of, part 1, Stream measurements in Sacramento River Basin.
299	1912	California, Water resources of, part 2, Stream measurements in San Joaquin River Basin.
300	1912	California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific coast river basins.
447	1918	California, southern, Surface water supply of Pacific slope of.
597-E	1927	California, Surface water supply of Sacramento River Basin.
636-D	1927	California, Surface water supply of San Joaquin River Basin.
636-E	1927	California, southern, Surface water supply of Pacific slope basins in.
637-A	1927	California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in.
74	1900	Colorado, Water resources of.
197	1905	Georgia, Water resources of.
415	1915	Massachusetts, Surface waters of.
230	1906	Nebraska, Surface water supply of.
370	1910	Oregon, Surface water supply of.
850	1937	Texas, Summary of records of surface waters of.
424	1916	Vermont, Surface waters of.
492	1919	Washington, Summary of hydrometric data in.
870	1935	Washington, Summary of records of surface waters of.
469	1921	Wyoming, Surface waters of, and their utilization.
		DRAINAGE BASIN
395	1914	Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization.
617	1927	Colorado River, upper (Colo., Utah), and its utilization.
517	1920	Great Salt Lake Basin, Water powers of.
618	1926	Green River (Utah, Wyo.) and its utilization.
198	1906	Kennebec River Basin (Maine), Water resources of.
491	1917	Milk River. (See St. Mary and Milk Rivers.)
536	1920	New-Kanawha River Basin (N. C., Va., W. Va.), Surface Water Supply of.
279	1909	Penobscot River Basin (Maine), Water resources of.
192	1906	Potomac River Basin (D. C., Md., W. Va.)
358	1913	Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of, 1888-1913.
491	1917	St. Mary and Milk Rivers (Mont., Canada), Water supply of.
109	1904	Susquehanna River Basin (Pa., Md.,), Hydrography of.

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

State reports containing compilation of records of discharge

State	Year ending	Report	Issued by
Alabama.....	1915	Bull. [illegible], Water powers of Alabama....	Geological Survey of Alabama.
Arkansas....	1928	Stream-gaging Report 1.....	Arkansas Geological Survey.
Connecticut.	1926	Bull. 44, Water resources of Connecticut.	State Geological and Natural History Survey.
Do.....	1933[a]	5th biennial report.....	Connecticut State Water Commission.
Georgia.....	1906	Bull. 16, Water powers of Georgia....	Geological Survey of Georgia.
Do.....	1920[b]	Bull. 38, Water powers of Georgia....	Do.
Illinois....	1911	Water resources of Illinois.....	Rivers and Lakes Commission.
Do.....	1934	Stream-flow data of Illinois.....	Division of Waterways.
Indiana.....	1927	Pub. 72, Surface water supply of Indiana.	Department of Conservation.
Do.....	1930[c]	Pub. 112, Surface water supply of Indiana.	Do.
Iowa.....	1932	Stream-flow records of Iowa.....	Iowa State Planning Board.
Kansas.....	1919	Surface waters of Kansas.....	Kansas Water Commission.
Do.....	1924[d]	....do.....	Do.
Do.....	1928[e]	....do.....	Kansas State Board of Agriculture.
Do.....	1935[f]	Stream-flow data of Kansas.....	Do.
Do.....	1939[g]	....do.....	Do.
Kentucky....	1920	Surface waters of Kentucky.....	Kentucky Geological Survey.
Maryland....	1937	Flow data and draft storage curves for major streams in Maryland.	State Planning Commission and Water Resources Commission.
Minnesota...	1912	Water-resources investigation of Minnesota.	State Drainage Commission.
Missouri....	1926	Vol. 20, 2d series, Water resources of Missouri.	Missouri Geological Survey and Water Resources.
Do.....	1939[h]	Vol. 26, 2d series, Surface waters of Missouri.	Do.
Nebraska....	1914	1st hydrographic report.....	Bureau of Water Power, Irrigation, and Drainage.
Do.....	1928[i]	2d hydrographic report.....	Do.
New Jersey..	1928	Bull. 33, Surface water supply of New Jersey.	Department of Conservation and Development.
Do.....	1934[j]	Special Report 5, Surface water supply of New Jersey.	State Water Policy Commission.
New Mexico..	1925	Surface water supply of New Mexico...	Office of the State Engineer.
North Carolina.	1923	Bull. 34, Discharge records of North Carolina streams.	Department of Conservation and Development.
Do.....	1936[k]	Bull. 39, Discharge records of North Carolina streams.	Do.
North Dakota	1920	Report to Governor of North Dakota on flood control.	State chief engineer.
Do.....	1927[l]	Surface water in North Dakota.....	State Planning Board.
Ohio.....	1921[m]	Bull. 73, Ohio stream flow.....	Engineering Experiment Station, Ohio State University.
Do.....	1939[n]	Bull. 200, Compilation of stream-flow records of Ohio.	Department of Agriculture, Division of Conservation and Natural Resources.
Oregon.....	1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do.....	1924[o]	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	1930[p]	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	1936[q]	Bull. 9, Water resources of the State of Oregon.	Do.
Pennsylvania	1911	Report of the Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do.....	1932[r]	Stream-flow records of Pennsylvania..	Department of Forests and Waters.
Tennessee...	1924	Bull. 34, Water resources of Tennessee.	Department of Education.
Do.....	1930[s]	Bull. 40, Surface waters of Tennessee.	Do.
Utah.....	1905	5th biennial report, State Engineer..	Office of the State Engineer.
Do.....	1910	7th biennial report, State Engineer..	Do.
Do.....	1916	10th biennial report, State Engineer.	Do.
Virginia....	1927	Bull. 31, Water resources of Virginia.	Conservation Commission.
Washington..	1933	Bull. 5, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.
Wisconsin...	1914	1st report of Railroad Commission of Wisconsin to Legislature on water powers.	Railroad Commission of Wisconsin.
Do.....	1923[t]	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

a Includes records of monthly discharge in second-feet per square mile for years 1912-33.
b Includes records for years 1907-18.
c Includes records for years 1927-30.
d Includes records for years 1919-24.
e Includes records for years 1924-28.
f Includes records for years 1928-35.
g Includes records for years 1935-39.
h Includes records for years 1927-39.
i Includes records for years 1914-28.
j Includes records for years 1928-34.
k Includes records for years 1889-1936; records of daily and monthly discharge are not included.
l Includes records for years 1882-1937.
m Includes all available records prior to 1921.
n Includes records for years 1902-39.
o Includes records for years 1914-24.
p Includes records for years 1924-30.
q Includes records for years 1930-36.
r Includes records for years 1928-32.
s Includes average weekly discharge for years 1920-30.
t Includes records for years 1914-23.

Note.- In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: California, Colorado, Connecticut, Idaho, Indiana, Missouri, Montana, Nebraska, New Mexico, New York (also New York City Board of Water Supply), North Dakota, Oregon, Pennsylvania, Nevada, Washington, and Wyoming.

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

Water-Supply Paper	Title
88	The Passaic flood of 1902.
92	The Passaic flood of 1903.
96	Destructive floods in the United States in 1903.
147	Destructive floods in the United States in 1904.
162	Destructive floods in the United States in 1905.
334	The Ohio Valley flood of March-April 1913.
426	Southern California floods of January 1916.
487	The Arkansas River flood of June 3-5, 1921.
488	The floods in central Texas in September 1921.
520-G	Some floods in the Rocky Mountain region.
636-C	The New England flood of November 1927.
771	Floods in the United States, magnitude and frequency.
773-E	The New York State flood of July 1935.
796-B	Flood on Republican and Kansas Rivers, May and June 1935.
796-C	Flood in La Canada Valley, Calif., January 1, 1934.
796-G	Major Texas floods of 1935.
798	The floods of March 1936, Part 1, New England Rivers.
799	The floods of March 1936, Part 2, Hudson River to Susquehanna River region.
800	The floods of March 1936, Part 3, Potomac, James, and upper Ohio Rivers.
816	Major Texas floods of 1936.
836-A	Stages and flood discharges of the Connecticut River at Hartford, Conn.
838	Floods of Ohio and Mississippi Rivers, January-February 1937.
842	Floods in Canadian and Pecos River Basins of New Mexico, May and June 1937.
843	Floods of Decsmber 1937 in northern California.
844	Floods of March 1938 in southern California.
847	Maximum discharges at stream-measurement stations through September 1938.
867	Hurrican floods of September 1938.
869	Flood of August 1935 in Muskingum River Basin, Ohio.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations for the area covered by this report at which records of discharge were collected during the water year October 1940 to September 1941 by agencies other than ths Geological Survey. The records for these stations are not contained in publications of the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Cayuga Lake outlet.....	Lock 1 (Mud lock), N. Y.....	1926-41	State Department of Public Works, Albany, N. Y.
Clyde River.....	Clyde, N. Y.....	1924-41	Do.
Indian River.....	Theresa, N. Y.....	1934-41	Central New York Power Corporation, Syracuse, N. Y.
New York Barge Canal†..	Brewerton, N. Y.....	1925-41	State Department of Public Works, Albany, N. Y.
Oneida River.....	Caughdenoy, N. Y.....	1929-41	Oswego River Watershed Corporation, Fulton, N. Y.
Oswegatchie River, East Branch of.	Browns Falls, N. Y.....	1934-41	Central New York Power Corporation, Syracuse, N. Y.
Oswego River.....	Lower Dam, Fulton, N. Y.....	1928-41	Oswego River Watershed Corporation, Fulton, N. Y.
Raquette River.....	Colton, N. Y.....	1934-41	Central New York Power Corporation, Syracuse, N. Y.
St. Regis River, West Branch of.	Parishville, N. Y.....	1934-41	Do.
Salmon River.....	Bennetts Bridge, near Altmar, N. Y.	1934-41	Do.
Saranac River.....	Kents Falls, N. Y.....	1934-41	System Properties, Inc., New York, N. Y.
Seneca River.....	Baldwinsville, N. Y.....	1928-41	Oswego River Watershed Corporation, Fulton, N. Y.
Do.....	Jacks Reef, near Baldwinsville, N. Y.	1933-41	State Department of Public Works, Albany, N. Y.

† Diversion around station on Oneida River at Caughdenoy, N. Y.

Note.- Records for the stations given in the above table are unpublished but are available at the office of the organization by which the station was operated. In addition to the records listed in the above table, the Soil Conservation Service (beginning in 1940) has collected records of run-off from three areas of less than 5 acres each near East Lansing, Mich.

COOPERATION

The work in the Several States was done under cooperative agreements with the organizations listed below.

Illinois: Department of Public Works and Buildings, W. A. Rosenfield, director, through Division of Waterways, Carter Jenkins, chief engineer.

Indiana: Department of Public Works, V. M. Simmons, administrative officer, prior to July 1, 1941; Department of Conservation, F. H. Wallace, acting commissioner, and State Highway Commission, J. D. Adams, chairman, thereafter.

Michigan: Michigan Stream Control Commission, P. J. Hoffmaster, chairman, and M. P. Adams, executive secretary-engineer.

Minnesota: State Department of Conservation, Division of Water Resources and Engineering, W. S. Olson, director.

New York: State Department of Conservation, Lithgow Osborne, commissioner; State Department of Public Works, A . W. Brandt, superintendent; State Water Power and Control Commission, Lithgow Osborne, chairman; Board of Black River District, E. S. Cullings, chief engineer; Commission for the Improvement of Oswegatchie River and the Hydraulic Power Thereon, J. J. Wallace, chairman; Buffalo Sewer Authority, D. H. McCarriagher, chairman; Water Department, city of Auburn, A. J. Adams, chief engineer; and Department of Public Works, village of Lancaster, Harold J. Huber, superintendent.

Ohio: State Cooperative Topographic Survey, W. E. Owens, inspector-director.

Vermont: State of Vermont, William H. Wills, Governor.

Wisconsin: Public Service Commission of Wisconsin, George P. Steinmetz, chief engineer.

Financial assistance was furnished by the Corps of Engineers, United States Army, in the operation of 32 gaging stations, of which 4 were in Michigan, 10 in New York, 14 in Ohio, 1 in Vermont, and 3 in Wisconsin.

Financial assistance was also furnished by the Fish and Wildlife Service, United States Department of the Interior, and by the United States Department of State.

Full cooperation exists between the Geological Survey, United States Department of the Interior, and the Dominion Water and Power Bureau, Department of Mines and Resources, Canada. On waters adjacent to the international boundary certain stations are maintained jointly by the United States and Canada under the terms of the Boundary Waters Treaty of 1909, and others are maintained under a subsequent agreement between the two Governments. The records from all these stations are obtained in such a manner as to be equally acceptable and available in both countries. These stations are designated international gaging stations.

Assistance in collecting records was also rendered by the following municipalities, organizations, corporations, and individuals:

Michigan: City of Allegan and the Michigan Gas & Electric Co.

New York: City of Syracuse, F. J. McArdell, city enginssr; the Central New York Power Corporation; International Paper Co.; Cornell University; New York & Pennsylvania Co.; Associated Gas & Electric System; Rochester Gas & Electric Corporation; and Deer River Power Co.

Wisconsin: Wisconsin Michigan Power Co. and Wisconsin Public Service Corporation.

The stream-gaging work was conducted by the water resources branch of the Geological Survey, Glenn L. Parker, chief hydraulic engineer, Carl G. Paulsen, assistant chief hydraulic engineer, and Rudolph G. Kasel, chief of the division of surface waters. The data for the stations in the several States were collected and prepared for publication under the supervision of district engineers as follows: In Illinois, J. H. Morgan; in Indiana and lower peninsula of Michigan, H. E. Grosbach until Sept. 15, 1941, succeeded by D. M. Corbett; in Minnesota, P. R. Speer; in New York, A. W. Harrington; in Ohio, C. V. Youngquist; in Vermont, H. B. Kinnison; in Wisconsin, F. C. Christopherson. The data for stations in the upper peninsula of Michigan were collected under the direction of F. C. Christopherson and prepared for publication under the direction of D. M. Corbett.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, in charge, and M. C. Boyer, associate engineer, section of reports.

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ST. LAWRENCE RIVER MAIN STEM

Niagara River at Buffalo, N. Y.

Location.- Water-stage recorder at south pier of U. S. Lighthouse slip, lat. 42°52'40", long. 78°53'25", at head of Niagara River at Buffalo. Elevation of reference point is 590.22 feet above the mean tide level at New York City. All gage readings have been reduced to elevations above the mean tide level at New York City.

Drainage area.- 263,500 square miles.

Records available.- January 1905 to September 1941 (prior to October 1935 monthly discharge only).

Average discharge.- 36 years, 190,200 second-feet (not including diversions from Lakes Michigan and Erie).

Extremes.- Maximum daily discharge during year, 228,000 second-feet Sept. 30, 1941, corresponding to an elevation of 573.71 feet on the Buffalo gage; minimum daily, 154,000 second-feet Jan. 24, corresponding to an elevation of 570.00 feet on the Buffalo gage.
1905-41: Maximum monthly mean discharge, 242,000 second-feet May 1929, corresponding to an elevation of 574.14 feet on the Buffalo gage; minimum monthly discharge, 117,000 second-feet February 1936, corresponding to an elevation of 569.48 feet on the Buffalo gage.

Remarks.- Records do not include flow diverted from Lake Michigan by Chicago Sanitary & Ship Canal and from Lake Erie by Welland Canal in Ontario, and Black Rock and New York State Barge (old Erie) Canals at Buffalo.

Cooperation.- Records of daily discharge furnished by Corps of Engineers, U. S. Army.

Discharge, in thousands of second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	185	179	180	176	178	170	170	179	181	169	184	180
2	187	200	198	188	180	172	172	176	180	188	182	170
3	188	189	181	195	180	174	168	178	178	179	183	172
4	183	180	195	219	179	170	165	179	176	184	184	177
5	189	197	176	208	177	178	168	181	184	184	181	184
6	190	206	184	188	179	171	172	178	183	185	176	194
7	192	187	200	184	184	167	173	181	184	189	181	182
8	190	180	187	185	204	165	173	181	191	190	183	170
9	186	178	173	186	186	174	172	183	183	190	182	176
10	184	181	193	192	177	167	173	183	184	187	176	185
11	189	191	173	186	173	170	174	182	178	188	185	176
12	191	228	173	199	175	172	176	184	179	186	181	176
13	188	178	174	183	174	173	176	181	183	183	182	173
14	182	171	175	181	181	175	177	180	192	181	180	178
15	178	176	170	163	181	176	182	179	186	184	180	181
16	182	205	181	175	177	182	175	182	189	186	184	178
17	189	202	175	184	190	206	184	184	189	187	185	178
18	182	177	184	198	206	182	177	180	189	189	178	171
19	189	178	179	205	194	171	178	188	188	181	183	168
20	189	185	182	187	181	169	188	182	186	187	179	174
21	182	176	188	181	180	172	185	182	186	187	181	172
22	183	188	193	187	176	171	178	182	187	184	182	173
23	191	177	179	182	175	169	177	183	184	183	177	172
24	183	184	180	184	171	173	180	183	188	183	175	169
25	181	174	178	187	175	174	178	186	181	184	185	194
26	181	161	180	187	171	172	179	185	187	182	185	174
27	176	198	175	187	165	172	181	187	186	183	180	170
28	186	190	179	181	171	172	181	184	191	186	176	187
29	175	200	181	184	-	173	180	175	188	184	176	164
30	183	182	208	188	-	172	180	176	188	187	180	176
31	178	-	192	177	-	172	-	178	-	187	184	-

Month	Thousands of second-foot-days	Thousands of second-feet			Per square mile†	Run-off in inches
		Maximum	Minimum	Mean		
October	5,712	192	166	184	0.698	0.80
November	5,598	228	161	187	.710	.79
December	5,666	208	170	183	.694	.80
Calendar year 1940	66,662	228	141	182	.691	9.40
January	5,707	219	154	184	.698	.80
February	5,010	206	156	179	.679	.71
March	5,376	206	165	173	.657	.76
April	5,282	188	165	176	.668	.75
May	5,622	187	175	181	.687	.79
June	5,549	192	176	185	.702	.78
July	5,747	190	179	185	.702	.81
August	5,610	185	175	181	.687	.79
September	5,294	194	164	176	.668	.75
Water year 1940-41	66,183	228	154	181	.687	9.33

† Expressed in second-feet.

St. Lawrence River at Ogdensburg, N. Y.

Location.- Ogdensburg gage, lat. 44°41'55", long. 75°30'15". Oswego gage, lat. 43°27'45", long. 76°31'00". Reference point of the Ogdensburg gage is 251.02 feet above the mean tide level at New York City; reference point of the Oswego gage is 251.90 feet above the mean tide level at New York City. All gage readings have been reduced to elevations above the mean tide level at New York City.

Drainage area.- Above Ogdensburg gage, 298,100 square miles.

Records available.- January 1919 to September 1941 (prior to October 1935, monthly discharge only).

Average discharge.- 22 years, 217,700 second-feet (does not include diversion from Lake Michigan).

Extremes.- Maximum daily discharge during year, 241,000 second-feet Apr. 21, corresponding to an elevation of 245.19 feet on the Ogdensburg gage; minimum daily, 175,000 second-feet Feb. 9, 10, corresponding to an elevation of 242.19 feet on the Ogdensburg gage.

1919-41: Maximum monthly mean discharge, 289,000 second-feet June 1929, corresponding to an elevation of 247.23 feet on the Ogdensburg gage or 248.46 feet on the Oswego gage; minimum monthly discharge, 152,000 second-feet February 1936, corresponding to an elevation of 243.59 feet on the Ogdensburg gage.

Remarks.- Records do not include flow diverted from Lake Michigan by Chicago Sanitary Canal. Water diverted from Lake Erie and Niagara River by Black Rock and New York State Barge (old Erie) Canals, except that lost by seepage and evaporation, is discharged into Lake Ontario at Oswego and at several points between Niagara River and Irondequoit Bay.

Cooperation.- Records of daily discharge furnished by Corps of Engineers, U. S. Army.

Discharge, in thousands of second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	215	203	206	214	212	208	217	227	221	218	213	210
2	213	212	209	210	206	208	220	221	221	217	213	206
3	213	211	206	219	208	204	219	228	220	215	213	205
4	213	207	214	219	209	204	219	229	218	216	212	205
5	215	209	208	220	206	205	218	226	218	217	212	208
6	218	217	205	218	207	202	218	225	220	216	210	212
7	219	211	218	216	204	204	223	225	220	217	212	210
8	215	208	212	216	211	202	224	227	226	222	213	203
9	214	208	203	215	175	204	224	225	221	218	212	201
10	214	206	217	217	175	202	223	225	219	218	207	208
11	216	210	205	214	181	192	223	226	218	216	214	205
12	217	226	204	217	184	190	225	226	216	214	211	205
13	218	208	205	215	189	195	227	225	217	214	210	203
14	209	202	209	215	187	200	229	226	220	214	213	208
15	209	202	207	210	196	200	231	224	220	214	209	210
16	210	213	207	209	202	197	226	225	219	215	207	205
17	214	215	208	213	205	209	234	223	219	219	207	207
18	209	209	212	217	208	209	227	225	220	214	207	201
19	209	208	209	218	211	199	228	225	222	225	209	198
20	212	214	212	216	209	201	232	224	220	220	207	203
21	208	207	210	217	210	203	241	225	221	219	206	202
22	210	213	211	216	210	203	231	224	218	217	207	202
23	216	204	207	217	210	205	228	225	215	214	207	198
24	210	209	210	209	209	206	230	223	219	215	207	197
25	208	205	209	214	211	208	227	228	217	214	207	209
26	207	199	205	211	208	212	227	226	222	213	209	201
27	207	203	207	197	210	214	229	222	220	213	207	200
28	205	205	206	206	208	215	229	223	220	211	206	204
29	203	209	202	218	-	219	231	219	216	211	206	196
30	202	203	217	216	-	218	228	222	217	212	207	198
31	204	-	218	211	-	219	-	222	-	213	205	-

Month	Thousands of second-foot-days	Thousands of second-feet			Per square mile†	Run-off in inches
		Maximum	Minimum	Mean		
October	6,552	219	202	211	0.708	0.82
November	6,259	217	199	209	.701	.78
December	6,478	218	202	209	.701	.81
Calendar year 1940	77,201	239	173	211	.708	9.62
January	6,640	220	197	214	.718	.83
February	5,661	212	175	202	.678	.71
March	6,357	219	190	205	.688	.79
April	6,788	241	217	226	.758	.85
May	6,965	229	219	225	.755	.87
June	6,580	226	216	219	.735	.82
July	6,691	225	211	216	.725	.84
August	6,455	214	205	209	.701	.81
September	6,120	212	196	204	.684	.76
Water year 1940-41	77,576	241	175	213	.715	9.69

† Expressed in second-feet.

Pigeon River at Middle Falls, below International Bridge, Minn.

(International gaging station)

Location.- Water-stage recorder, lat. 48°00'44", long. 89°36'58", in NE¼ sec. 24, T 64 N., R. 6 E., 400 feet upstream from Middle Falls, 3⅛ miles upstream from mouth, and 5¾ miles downstream from International Bridge. Prior to October 1940, wier-weight gage at International Bridge, different datum.

Drainage area.- 604 square miles.

Records available.- October 1940 to September 1941. April 1924 to September 1940 at site at International Bridge, 5¾ miles upstream, published as Pigeon River at International Bridge, Minn. October 1923 to September 1932 in House Document 92, 73d Congress of the United States, 1st Session. June 1921 to September 1923 in reports of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Average discharge.- 18 years (1923-41), 469 second-feet.

Extremes.- Maximum discharge observed during year, 5,460 second-feet Apr. 14 (gage height, 8.41 feet); minimum recorded, 44 second-feet Oct. 23-28; minimum gage height recorded, 0.22 foot Oct. 24, 25.

1923-40: Maximum discharge observed, 11,000 second-feet May 5, 1934 (gage height, 7.6 feet, site and datum then in use), from rating table extended above 7,000 second-feet; minimum, 30 second-feet, Feb. 11 to Mar. 5, 1926.

Remarks.- Records excellent except those for period of ice effect or no gage-height record, which are fair.

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating tables, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 13						Apr. 14 to Sept. 30					
0.2	42	1.5	287	4.0	1,370	0.5	64	2.0	422	4.0	1,300
.4	59	2.0	443	5.0	2,120	.7	90	2.5	585	5.0	2,010
.6	81	2.5	606	6.0	3,030	1.0	144	3.0	780	6.0	2,920
1.0	152	3.0	e20	8.0	5,030	1.5	273	3.5	1,020	8.5	5,580

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		a110	95	80	65	55	95	2,440	517	469	158	103
2		a150	90	85	60	55	110	2,220	534	501	140	100
3		a130	90	e5	60	60	130	2,010	485	817	146	95
4		a110	85	80	60	55	150	1,810	406	1,100	144	103
5		a100	85	75	60	55	180	1,740	364	1,020	a180	197
6		a95	85	65	60	55	220	1,600	343	945	a190	200
7		a90	85	70	55	55	280	1,490	1,830	895	a150	170
8	50	87	75	70	55	55	400	1,420	2,440	820	a130	149
9		84	80	70	55	55	*589	1,330	1,810	780	a120	177
10		79	85	70	60	60	1,000	1,240	1,300	740	a120	364
11		363	85	75	60	60	1,600	769	970	720	a120	355
12		654	90	75	60	60	2,390	814	800	660	a110	305
13		443	80	75	65	60	4,430	1,100	660	620	a120	296
14		320	80	75	65	60	5,240	1,100	565	585	108	589
15		260	80	75	65	60	5,130	1,070	517	700	104	1,300
16	48	240	80	75	65	60	4,250	1,020	469	780	96	1,100
17	47	220	80	80	60	55	3,420	920	422	760	90	820
18	46	190	80	75	*55	55	3,420	845	391	740	89	680
19	52	200	80	75	55	50	3,420	820	422	700	89	1,350
20	48	260	85	75	55	*50	3,220	780	453	640	84	1,300
21	a46	300	e5	75	55	55	*2,620	720	438	585	82	995
22	a45	240	85	75	60	55	2,220	602	534	534	77	1,120
23	a44	190	85	75	60	60	1,930	550	585	376	74	1,210
24	a44	150	85	*75	55	60	1,970	517	585	245	72	1,040
25	a44	*120	90	70	55	60	2,350	279	550	195	96	895
26	a44	110	a90	65	55	70	2,350	240	534	174	122	780
27	a44	110	a85	65	55	65	2,050	251	517	170	136	720
28	a44	95	a90	65	55	70	1,740	355	485	167	126	820
29	a60	100	a85	65	-	70	2,050	517	453	210	115	820
30	a80	100	a85	65	-	80	2,530	485	438	200	106	740
31	*66	-	*80	65	-	85	-	453	-	177	103	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,552	-	44	50.1	0.083	0.10
November	5,700	654	79	190	.315	.35
December	2,620	95	75	84.5	.140	.16
Calendar year 1940	127,460	3,330	44	348	.576	8.01
January	2,265	85	65	73.1	.121	.14
February	1,645	65	55	58.8	.097	.10
March	1,860	85	50	60.0	.099	.11
April	61,484	5,240	95	2,049	3.39	3.78
May	31,507	2,440	240	1,016	1.68	1.94
June	20,857	2,440	343	695	1.15	1.28
July	18,025	1,100	167	581	.962	1.11
August	3,597	-	72	116	.192	.22
September	18,893	1,350	95	630	1.04	1.16
Water year 1940-41	170,005	5,240	44	466	.772	10.45

Peak discharge.- Nov. 11 (9:30 p.m.) 1,160 sec.-ft.; Apr. 14 (1:15 a.m.) 5,460 sec.-ft.; June 8 (3 a.m.) 1,280 sec.-ft.; Sept. 15 (1 a.m.) 1,330 sec.-ft.; Sept. 19 (7 p.m.) 1,560 sec.-ft.; Sept.23 (4 a.m.) 1,240 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of partly estimated gage-height record.

Note.- Stage-discharge relation affected by ice Nov. 14 to Dec. 25, Dec. 31 to Apr. 8, Apr. 10, 11.

Poplar River at Lutsen, Minn.

Location.- Water-stage recorder and concrete control, lat. 47°38', long. 90°42', in sec. 33, T. 60 N., R. 3 W., 350 feet upstream from concrete bridge on U. S. Highway 61 at Lutsen, and 1,650 feet upstream from mouth. Datum of gage is 697.89 feet above mean sea level.

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 1941.

Average discharge.- 14 years (1913-17, 1930-32, 1933-41), 109 second-feet.

Extremes.- Maximum discharge during year, 850 second-feet Apr. 14 (gage height, 4.94 feet, affected by ice); minimum, 11 second-feet Aug. 17, 18 (gage height, 2.23 feet).
1912-17, 1928-41: Maximum discharge observed, 1,390 second-feet Apr. 25, 1916, from rating curve extended above 750 second-feet; maximum gage height observed, 10.02 feet May 1, 1937, site and datum then in use; minimum discharge, 2.3 second-feet Dec. 3, 1939 (gage height, 1.73 feet).

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating table, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 11-13)

2.2	10	3.0	77	4.2	522
2.4	18	3.4	199	4.6	710
2.6	30	3.8	359	5.0	910

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	16S	b60	49	40	30	35	279	175	51	25	52
2	24	291	b60	b48	39	30	38	263	171	46	24	43
3	24	203	b55	b46	36	30	39	247	148	42	28	35
4	23	148	b55	b44	37	29	42	235	132	39	29	36
5	24	129	b55	b44	37	29	49	219	121	36	25	71
6	27	108	b55	b48	36	29	61	235	121	36	22	61
7	24	92	b60	b50	35	28	b75	255	247	44	20	48
8	22	S5	b60	b50	32	28	b90	247	307	46	20	46
9	21	79	b60	b50	32	29	*b120	231	239	47	20	S6
10	22	75	b60	b55	33	29	b170	215	199	61	18	96
11	22	137	b60	b55	33	29	b220	207	187	61	c20	75
12	22	379	b55	b55	34	30	b300	195	191	60	c20	60
13	21	b260	b55	52	35	b30	b500	187	175	49	c16	92
14	20	b220	b55	51	b34	30	bS00	219	151	40	14	255
15	20	b180	b55	52	36	31	b750	219	132	51	13	359
16	*18	b160	b60	53	36	b30	b650	203	116	75	12	271
17	18	151	b60	54	*36	b28	526	187	108	66	11	187
18	17	136	b60	b48	35	b32	556	175	101	56	12	144
19	18	132	b65	b48	33	*31	635	167	98	46	14	144
20	18	136	b65	b50	31	29	588	159	90	39	15	118
21	18	125	69	51	29	29	485	144	96	35	14	104
22	18	b110	71	47	29	29	*399	129	96	33	14	163
23	18	b110	69	*46	29	29	363	116	86	32	14	144
24	17	*b95	b65	44	28	29	359	106	79	39	15	118
25	16	b100	b65	45	28	29	347	98	72	44	51	101
26	16	b100	b60	44	27	29	339	104	66	37	66	85
27	16	b90	57	44	28	29	323	129	63	33	43	79
28	16	b75	56	44	29	29	311	155	63	33	33	88
29	45	b70	53	42	-	28	299	167	58	33	34	81
30	85	b65	*52	42	-	28	283	148	56	31	37	75
31	69	-	49	40	-	31	-	155	-	28	42	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	764	85	16	24.6	0.178	0.21
November	4,259	379	65	142	1.03	1.15
December	1,836	71	49	59.2	.429	.49
Calendar year 1940	30,098.3	448	7.5	82.2	.596	8.09
January	1,491	55	40	48.1	.349	.40
February	927	40	27	33.1	.240	.25
March	910	32	28	29.4	.213	.25
April	9,752	800	35	325	2.36	2.63
May	5,795	279	98	187	1.36	1.57
June	3,944	307	56	131	.949	1.06
July	1,369	75	28	44.2	.320	.37
August	741	66	11	23.9	.173	.20
September	3,317	359	35	111	.804	.90
Water year 1940-41	35,105	800	11	96.2	.697	9.48

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
c Backwater from debris on control; discharge computed on basis of one discharge measurement, gage heights, and engineer's notes.

Baptism River near Beaver Bay, Minn.

Location.- Water-stage recorder, lat. 47°20', long. 91°12', in sec. 15, T. 56 N., R. 7 W., 260 feet upstream from highway bridge and 6 miles northeast of village of Beaver Bay. Datum 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 1941.

Average discharge.- 11 years (1930-41), 156 second-feet.

Extremes.- Maximum discharge during year, 9,080 second-feet Apr. 13 (gage height, 8.01 feet), from rating curve extended above 2,600 second-feet; minimum, 6.9 second-feet Aug. 23 (gage height, 1.89 feet).
1928-29, 1930-41: Maximum discharge, 9,350 second-feet Aug. 9, 1939 (gage height, 8.11 feet, from rating curve extended above 2,600 second-feet; minimum daily, 0.3 second-foot Jan. 5, 6, 1940.

Remarks.- Records excellent except those for periods of ice effect, or no gage-height record, which are fair.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 13						Apr. 14 to Sept. 30					
2.1	13	3.0	100	5.0	2,400	1.8	5.1	2.8	82	4.5	1,410
2.2	16	3.5	275	6.0	4,230	1.9	7.1	3.2	160	5.0	2,320
2.4	27	4.0	680	7.0	6,480	2.0	10	3.6	312	6.0	4,230
2.6	44	4.5	1,500			2.4	37	4.0	630	7.0	6,480

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	560	65	51	30	20	44	335	270	31	11	241
2	38	634	60	50	30	22	55	312	274	28	9.3	181
3	33	430	55	50	30	22	60	279	225	26	9.6	138
4	29	331	55	50	28	20	70	253	187	22	10	135
5	33	275	55	48	30	20	95	233	155	21	10	158
6	33	234	55	46	30	19	170	257	174	20	9.3	127
7	33	a200	60	46	28	19	220	274	636	22	10	101
8	30	166	60	44	28	18	*240	257	806	22	17	118
9	28	149	60	42	26	20	340	241	516	32	14	298
10	26	140	60	40	26	20	480	211	370	42	13	284
11	26	736	60	40	26	22	700	190	370	35	26	222
12	25	a850	55	40	26	22	1,360	172	678	31	22	175
13	23	a650	55	38	28	22	6,610	155	516	26	17	419
14	23	a460	55	38	28	22	a5,290	166	384	22	14	2,300
15	22	a340	55	38	26	22	g3,360	158	288	47	12	2,600
16	21	260	55	38	26	20	a2,510	142	225	82	10	1,280
17	20	240	50	38	*26	19	a1,770	125	175	56	9.3	690
18	19	210	50	36	24	19	g1,140	113	140	48	9.0	433
19	19	198	51	34	22	*19	a986	102	127	39	9.0	384
20	19	198	52	32	20	20	a890	92	104	30	8.0	335
21	19	183	51	32	20	20	*792	85	99	25	7.4	284
22	19	170	51	30	22	19	678	73	117	20	7.4	261
23	19	160	51	*28	22	20	567	63	104	16	6.9	245
24	18	*140	52	28	22	20	a556	56	88	19	24	214
25	17	110	52	28	22	22	546	51	72	27	68	194
26	18	140	55	28	20	22	482	53	57	29	97	175
27	18	120	55	28	20	22	426	55	49	26	94	166
28	21	80	55	28	20	22	384	90	44	23	85	194
29	182	90	55	28	-	22	335	111	41	20	269	181
30	310	75	*55	30	-	26	329	104	38	17	245	172
31	262	-	52	30	-	32	-	177	-	13	257	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,447	310	17	46.7	0.343	0.40
November	8,529	850	75	284	2.09	2.33
December	1,707	65	50	55.1	.405	.47
Calendar year 1940	52,598.2	1,430	.4	143.7	1.06	14.38
January	1,157	51	28	37.3	.274	.32
February	706	30	20	25.2	.185	.19
March	654	32	18	21.1	.155	.18
April	31,485	6,610	44	1,050	7.72	8.61
May	4,985	335	51	161	1.18	1.36
June	7,329	806	38	244	1.79	2.00
July	917	82	13	29.6	.218	.25
August	1,410.2	269	6.9	45.5	.335	.39
September	12,705	2,600	101	424	3.12	3.48
Water year 1940-41	73,031.2	6,610	6.9	200	1.47	19.98

Peak discharge.- Nov. 10 (8:30 p.m.) 1,390 sec.-ft.; Apr. 13 (5 p.m.) 9,080 sec.-ft.; June 7 (9 p.m.) 954 sec.-ft.; Sept. 14 (6:15 p.m. and 11 p.m.) 4,130 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of partly estimated gage-height record.
g Computed from graph based on gage readings.
Note.- Stage-discharge relation affected by ice Nov. 16, 17, Nov. 22 to Dec. 18, Jan. 2 to Apr. 11.

Amnicon Lake near South Range, Wis.

Location.- Staff gage, lat. 46°29', long. 92°04', in sec. 12, T. 46 N., R. 14 W., in northwest corner of lake, 15 miles southwest of South Range. Datum of gage is 1,188.00 feet above mean sea level (State Highway Commission levels). Gage readings have been reduced to elevation above mean sea level.

Drainage area.- 5 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 1,197.92 feet June 7; minimum, 1,196.24 feet Aug. 23.
1937-41: Maximum elevation observed, 1,197.92 feet June 7, 1941; minimum, 1,196.04 feet Aug. 24, Oct. 3, 1936.

Remarks.- Lake has natural outlet.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	6.80					-	-	-	-	-	-
2	-	-					-	-	-	-	6.46	-
3	-	-					-	-	-	-	-	-
4	7.10	-					-	7.36	-	-	-	-
5	-	-					6.70	-	-	6.62	-	-
6	-	-	6.74				-	7.40	-	-	-	7.06
7	-	-					-	7.38	7.92	-	-	-
8	-	6.76					-	-	-	-	-	-
9	-	-					6.83	-	-	-	6.40	-
10	-	-					-	-	-	-	-	-
11	7.00	-					7.16	7.26	-	-	-	-
12	-	-					7.30	-	-	6.58	-	-
13	-	-					-	-	-	-	-	7.20
14	-	-					-	7.20	6.92	-	-	-
15	-	6.74					7.52	-	-	-	-	-
16	-	-					-	-	-	-	6.30	-
17	-	-					-	7.10	-	-	-	-
18	7.28	-					-	-	-	-	-	-
19	-	-					-	-	-	6.54	-	-
20	-	-					7.78	7.02	-	-	-	7.48
21	-	-					-	-	6.88	-	-	-
22	-	6.70					-	-	-	-	-	-
23	-	-					7.74	-	-	-	6.24	-
24	-	-					-	6.90	-	-	-	-
25	7.00	-					-	-	-	-	-	-
26	-	-					-	6.88	-	6.56	-	-
27	-	-					7.64	-	-	-	-	7.21
28	-	-					-	-	6.76	-	-	-
29	-	6.72					-	-	-	-	-	-
30	-	-					7.54	-	6.76	-	6.82	-
31	-	-					-	6.90	-	-	-	-

Note.- Add 1,190 feet to obtain elevation above mean sea level.

Montreal River near Saxon, Wis.

Location.- Water-stage recorder, lat. 46°32', long. 90°23', in NW¼ sec. 23, T. 48 E., R. 49 W., 2 miles upstream from mouth and 3½ miles north of Saxon, Wis.
Drainage area.- 281 square miles.
Records available.- September 1938 to September 1941.
Extremes.- Maximum discharge during year, 4,650 second-feet Aug. 31 (gage height, 6.25 feet); minimum discharge, 4 second-feet July 8 (gage height, 1.12 feet).
1938-41: Maximum discharge, 4,650 second-feet May 20, 1940, and Aug. 31, 1941; maximum gage height, 6.48 feet Mar. 26, 1939 (ice jam); minimum discharge, 2 second-feet Sept. 21, Oct. 8, 1939.
Revisions.- The maximum discharge for the water year 1938-39 has been revised to 4,200 second-feet Apr. 26, 1939 (gage height, 5.88 feet), and for the water year 1939-40, to 4,650 second-feet May 20, 1940 (gage height, 6.24 feet), superseding figures published in Water Supply Papers 874 and 894.
Remarks.- Records good except for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation caused by Saxon Falls power plant 1½ miles upstream. Flow regulated since Apr. 1, 1941, by new Gile Reservoir on West Branch Montreal River (capacity, 1.29 billion cubic feet).
Revisions.- Revised figures of discharge for high-water periods in the water years 1938-39 and 1939-40 are given herein. They supersede those published in Water Supply Papers 874 and 894:

Apr. 24, 1939....	2,720	Apr. 28, 1939....	2,650
25.....	3,380	May 20, 1940....	3,600
26.....	3,820	21.....	3,750
27.....	3,380	22.....	2,940

Month	Second-foot days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
April 1939.....	53,841	3,820	697	1,795	6.39	7.13
Water year 1938-39	171,282	3,820	18	469	1.67	22.65
Calendar year 1939	149,248	3,820	18	409	1.46	19.75
May 1940.....	34,854	3,750	298	1,124	4.00	4.61
Water year 1939-40	111,246	3,750	22	304	1.08	14.71

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	112	210	755	135	120	300	289	158	80	99	3,070
2	71	138	170	704	120	110	550	255	121	82	90	1,920
3	64	130	120	450	120	120	785	281	135	110	80	987
4	62	138	140	370	125	100	928	255	127	118	85	892
5	58	168	160	300	125	110	1,280	189	107	76	87	2,060
6	55	193	180	230	110	90	1,450	147	97	44	89	2,220
7	55	196	175	210	115	100	1,990	178	166	44	102	1,760
8	55	178	165	190	110	90	2,060	175	231	53	99	931
9	53	161	180	175	130	95	2,060	178	161	97	85	912
10	52	168	150	180	135	100	1,920	151	127	144	85	832
11	49	298	170	150	120	95	1,770	138	118	121	118	596
12	49	576	155	160	140	100	1,640	82	87	76	144	347
13	53	526	140	145	150	105	1,570	82	116	57	92	343
14	57	520	130	140	200	90	1,390	121	215	85	89	277
15	57	491	120	140	220	100	1,150	112	239	141	105	2,340
16	53	429	115	130	250	80	953	80	168	121	94	1,890
17	60	403	105	140	240	60	712	102	147	107	89	1,310
18	55	325	120	135	230	80	582	102	132	82	94	683
19	53	334	140	135	200	100	551	105	89	135	115	551
20	53	363	150	140	210	100	863	87	74	135	121	426
21	52	363	120	150	190	90	1,250	78	87	121	110	353
22	52	526	115	130	170	95	a1,500	76	110	110	115	302
23	53	508	140	*130	160	*93	a1,100	69	118	82	107	272
24	57	440	125	135	150	100	a600	65	94	112	89	251
25	52	353	190	130	145	100	a380	60	74	127	105	231
26	49	307	250	125	135	120	a300	40	80	132	158	215
27	80	247	370	125	*126	100	a275	67	94	107	185	208
28	49	204	500	125	120	80	268	87	175	85	154	208
29	49	220	560	125	-	80	268	87	138	118	400	208
30	71	240	628	120	-	100	289	87	71	124	1,570	211
31	127	-	656	120	-	150	-	118	-	112	2,670	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	1,829	127	49	59.0	0.210	0.24
November.....	9,255	576	112	308	1.10	1.23
December.....	6,649	656	105	214	.762	.88
Calendar year 1940.....	122,305	3,750	32	334	1.19	16.17
January.....	6,394	755	120	206	.733	.85
February.....	4,381	250	110	156	.555	.58
March.....	3,053	150	60	98.5	.351	.40
April.....	30,734	2,060	268	1,024	3.64	4.06
May.....	3,943	289	40	127	.452	.52
June.....	3,856	239	71	129	.459	.51
July.....	3,138	144	44	101	.359	.41
August.....	7,615	2,670	80	246	.875	1.01
September.....	26,806	3,070	208	894	3.18	3.55
Water year 1940-41.....	107,653	3,070	40	295	1.05	14.24

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Flambeau River near Ladysmith and weather records.
Note.- Stage-discharge relation affected by ice Nov. 29 to Dec. 29, Jan. 3 to Apr. 1.

Big Lake near Land O'Lakes, Wis.

Location.- Staff gage, lat. 46°11', long. 89°27', in lot 4, sec. 23, T. 43 N., R. 8 E., 15 miles west of village of Land O'Lakes.

Drainage area.- 32 square miles.

Records available.- June 1938 to September 1941 (fragmentary).

Extremes.- Maximum gage height observed during year, 6.52 feet Sept. 17; minimum, 4.40 feet Apr. 8.
1938-41: Maximum gage height observed, that of Sept. 17, 1941; minimum, 4.40 feet Apr. 13, 1940, and Apr. 8, 1941.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	5.36	5.56	5.76	5.82	6.30
2							-	5.40	5.56	5.76	5.82	6.28
3							-	5.40	5.58	5.76	5.82	6.26
4							-	5.40	5.62	5.76	5.82	6.26
5							-	5.40	5.66	5.76	5.82	6.24
6							-	5.40	5.70	5.76	5.82	6.24
7							-	5.40	5.72	5.76	5.82	6.24
8							4.40	5.40	5.72	5.76	5.82	6.20
9							-	5.40	5.74	5.76	5.82	6.18
10							-	5.40	5.74	5.76	5.82	6.16
11							-	5.40	5.76	5.76	5.82	6.14
12							4.50	5.40	5.76	5.76	5.82	6.12
13							-	5.40	5.78	5.76	5.82	6.10
14							-	5.40	5.78	5.76	5.82	6.34
15							-	5.40	5.76	5.76	5.82	6.46
16							-	5.40	5.76	5.76	5.82	6.50
17							-	5.40	5.76	5.76	5.82	6.52
18							-	5.40	5.76	5.76	5.82	6.50
19							5.00	5.38	5.76	5.76	5.82	6.48
20							-	5.38	5.76	5.76	5.84	6.44
21							-	5.38	5.76	5.78	5.84	6.40
22							-	5.36	5.76	5.78	5.84	6.36
23							-	5.36	5.76	5.80	5.84	6.32
24							-	5.36	5.76	5.80	5.84	6.26
25							-	5.36	5.76	5.82	5.84	6.22
26							5.30	5.38	5.76	5.82	5.84	6.16
27							-	5.42	5.76	5.82	5.86	6.12
28							-	5.52	5.76	5.82	5.88	6.10
29							-	5.54	5.76	5.82	6.00	6.06
30							5.32	5.56	5.76	5.82	6.20	6.06
31							-	5.56		5.82	6.32	

Manistique River at Germfask, Mich.

Location.- Water-stage recorder, lat. 46°14'00", long. 85°55'40", in SE¼ sec. 4, T. 44 N., R. 13 W., 1 mile south of Germfask and 1¼ miles upstream from Grays Creek.

Drainage area.- 341 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge during year, 868 second-feet Apr. 18 (gage height, 4.11 feet); minimum, 200 second-feet Aug. 19-23.
1938-41: Maximum discharge observed, 2,130 second-feet Apr. 1, 1938 (gage height, 8.50 feet, site and datum then in use); minimum observed, 184 second-feet Aug. 27, 29, 30, Sept. 6, 1938.

Remarks.- Records good.

Cooperation.- Observer's services and results of five discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 12		Dec. 13 to Sept. 30			
1.7	259	1.3	194	4.1	868
2.4	421	2.0	338		
3.1	599	3.0	575		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290	372	440	480	370	350	383	551	419	284	224	527
2	285	372	440	450	370	350	407	539	338	265	219	539
3	281	384	430	430	370	350	431	515	316	254	213	527
4	274	396	430	420	370	350	467	491	305	244	211	503
5	277	396	420	410	360	350	503	479	294	238	211	515
6	285	396	420	400	360	349	539	479	284	236	209	491
7	292	408	410	400	360	350	588	515	273	240	205	443
8	292	408	410	390	360	349	638	539	273	260	207	407
9	296	396	400	390	360	349	678	527	284	254	209	383
10	296	434	400	390	350	*360	732	515	273	244	209	407
11	292	471	400	390	350	349	786	491	273	238	217	431
12	294	496	400	390	350	360	813	467	269	219	236	419
13	303	458	390	390	*350	349	840	455	269	228	242	407
14	a310	430	390	380	350	349	840	443	294	221	224	395
15	a300	410	390	380	350	349	868	455	327	221	217	431
16	a300	400	390	*380	350	349	868	455	316	236	211	479
17	a300	420	370	380	350	349	868	455	294	268	207	527
18	292	440	380	380	350	350	868	443	273	273	205	527
19	319	471	*390	380	350	350	868	431	268	268	202	503
20	384	521	400	380	350	350	840	419	260	260	202	479
21	396	534	400	380	350	350	840	455	254	248	202	455
22	396	599	410	370	350	349	813	455	258	254	200	419
23	384	599	420	370	350	360	813	431	262	244	202	383
24	372	599	440	370	350	349	786	419	256	234	207	372
25	362	586	479	370	350	349	759	395	248	232	213	360
26	349	534	515	370	350	349	705	395	240	230	232	395
27	338	500	a560	370	350	349	678	467	238	232	244	407
28	336	*480	a600	370	350	349	638	503	246	238	228	395
29	338	470	a600	370	-	360	600	491	284	248	238	383
30	349	450	a560	370	-	360	575	467	284	242	407	383
31	362	-	510	370	-	360	-	443	-	232	503	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,946	396	274	321	0.941	1.08
November	13,830	599	372	461	1.35	1.51
December	13,954	600	370	450	1.32	1.52
Calendar year 1940	161,922	1,200	250	442	1.30	17.64
January	12,070	480	370	389	1.14	1.32
February	9,930	370	350	355	1.04	1.08
March	10,895	360	349	351	1.03	1.19
April	21,032	868	383	701	2.06	2.29
May	14,585	551	395	470	1.38	1.59
June	8,472	419	238	282	.827	.92
July	7,593	284	219	245	.718	.83
August	7,156	503	200	231	.677	.78
September	13,292	539	360	443	1.30	1.45
Water year 1940-41	142,755	868	200	391	1.15	15.56

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage, weather records, and records for other stations in the basin.
Note.- Stage-discharge relation affected by ice Nov. 14-18, Nov. 27 to Dec. 24, Dec. 31 to Mar. 5, Mar. 7, 18-21.

Manistique River near Blaney, Mich.

Location.- Water-stage recorder, lat. 46°05'05", long. 86°03'35", in NE¼ sec. 33, T. 43 N., R. 14 W., half a mile downstream from Duck Creek and 7 miles southwest of Blaney.

Drainage area.- 704 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge during year, 2,210 second-feet Apr. 11 (gage height, 13.18 feet); minimum, 234 second-feet Aug. 19-24; minimum gage height, 5.63 feet Aug. 23. 1938-41: Maximum discharge observed, 9,300 second-feet Apr. 1, 1938 (gage height, 19.42 feet); minimum, that of Aug. 19-24, 1941; minimum gage height, that of Aug. 23, 1941.

Remarks.- Records good except those for periods of ice effect, which are fair.

Cooperation.- Observer's services and results of seven discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 11				Apr. 12 to Sept. 30			
6.5	376	10.0	1,140	5.6	226	10.2	1,240
7.0	460	13.0	2,140	6.1	312	11.5	1,630
8.5	782			8.0	708	13.0	2,140

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	399	584	840	1,100	550	560	700	1,090	708	389	294	754
2	399	606	800	1,020	540	560	760	1,040	664	379	285	754
3	391	628	760	960	540	560	800	965	598	360	276	708
4	384	628	730	900	530	*560	880	915	554	350	268	664
5	391	628	710	860	530	560	1,040	869	522	340	259	686
6	384	628	700	840	520	560	1,140	846	491	331	250	686
7	407	628	680	820	520	560	1,320	892	470	340	250	642
8	416	628	670	*820	520	560	1,560	940	460	350	242	598
9	424	628	660	820	510	560	1,770	940	460	350	242	554
10	424	672	650	800	510	560	1,970	869	449	340	242	598
11	424	760	640	780	*520	560	*2,140	823	439	331	250	664
12	424	897	640	770	530	560	2,140	777	429	303	269	620
13	433	874	630	750	550	560	2,140	754	419	285	285	598
14	442	828	*630	740	570	560	2,140	708	460	285	276	598
15	451	800	620	720	580	560	2,140	708	522	276	259	664
16	451	780	620	700	580	560	2,110	754	512	294	250	754
17	451	820	620	680	580	520	2,080	731	480	312	242	892
18	451	860	620	670	580	450	2,040	708	439	340	242	892
19	479	897	620	660	580	470	2,010	686	419	340	234	823
20	650	921	630	640	580	520	1,970	664	399	331	234	777
21	694	1,020	640	630	580	560	1,940	708	389	322	234	731
22	672	1,140	670	620	580	570	1,940	754	409	312	234	686
23	650	1,260	700	620	580	570	1,900	708	399	312	234	620
24	628	1,260	740	610	570	570	1,870	664	429	294	234	598
25	584	1,200	800	600	570	580	1,800	620	379	285	259	576
26	562	1,090	960	590	570	580	1,630	620	369	285	285	620
27	540	*995	1,150	590	560	590	1,540	731	350	303	294	642
28	519	946	1,300	580	560	610	1,420	846	350	312	285	686
29	519	921	1,300	570	-	630	1,270	869	369	322	285	686
30	551	880	1,250	570	-	650	1,160	823	399	331	429	664
31	584	-	1,200	560	-	670	-	754	-	322	664	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,178	694	384	490	0.696	0.80
November	25,407	1,260	584	847	1.20	1.34
December	24,180	1,300	620	780	1.11	1.28
Calendar year 1940	311,386	4,070	376	851	1.21	16.47
January	22,590	1,100	560	729	1.04	1.20
February	15,490	580	510	553	.786	.82
March	17,500	670	450	565	.803	.93
April	49,320	2,140	700	1,644	2.34	2.61
May	24,776	1,090	620	799	1.13	1.30
June	13,736	708	350	458	.651	.73
July	10,026	389	276	323	.459	.53
August	8,585	664	234	277	.393	.45
September	20,435	892	554	681	.967	1.08
Water year 1940-41	247,223	2,140	234	677	.962	13.07

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 15-18, Nov. 30 to Apr. 4.

Manistique River near Manistique, Mich.

Location.- Water-stage recorder, lat. 46°01'50", long. 86°09'40", in SE¼ sec. 15, T. 42 N., R. 15 W., 1 mile downstream from West Branch of Manistique River and 6 miles northeast of Manistique.

Drainage area.- 1,100 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge during year, 4,210 second-feet Apr. 18 (gage height, 8.31 feet); minimum, 371 second-feet Aug. 23 (gage height, 1.01 feet).
1938-41: Maximum discharge observed, 9,720 second-feet Apr. 1, 1938 (gage height, 12.70 feet, site and datum then in use); minimum, that of Aug. 23, 1941.

Remarks.- Records good except those for periods of ice effect, which are fair.

Cooperation.- Observer's services and results of five discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 18

1.8	547	5.5	2,200
2.5	820	7.0	3,170
4.0	1,440	8.3	4,210

Apr. 19 to Sept. 30

1.0	371	2.5	820
1.6	530		

Note.- Same as preceding table above 2.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	566	940	1,350	1,850	920	810	1,150	1,980	1,310	650	488	940
2	566	960	1,250	1,650	910	810	1,200	1,830	1,220	635	475	1,020
3	566	980	1,200	1,550	900	810	1,300	1,730	1,100	620	462	1,020
4	547	1,000	1,150	1,450	890	810	1,400	1,580	1,020	605	448	980
5	547	1,020	1,100	1,350	880	*810	1,500	1,480	960	575	435	980
6	566	1,020	1,060	1,300	880	810	1,700	1,440	880	560	422	1,000
7	584	1,020	1,040	1,260	870	800	1,980	1,440	840	560	409	960
8	603	1,020	1,020	1,250	860	800	2,260	1,550	802	575	409	900
9	622	1,020	1,000	1,250	840	800	2,570	1,530	768	575	409	860
10	622	1,100	1,000	1,230	830	800	2,960	1,440	750	560	396	860
11	622	1,180	1,000	1,210	830	800	*3,330	1,350	732	545	409	940
12	622	1,390	990	1,200	830	790	3,570	1,310	698	530	422	940
13	622	1,440	990	1,180	840	790	3,730	1,220	680	502	435	900
14	661	1,350	1,000	*1,160	*860	790	3,890	1,180	665	488	435	900
15	680	1,320	980	1,140	870	810	4,050	1,140	820	475	422	940
16	680	1,300	980	1,120	870	810	4,050	1,180	860	502	409	1,060
17	680	1,400	*990	1,100	870	790	4,210	1,180	840	516	396	1,220
18	680	1,500	1,000	1,090	870	720	4,210	1,140	785	545	396	1,310
19	720	1,580	1,000	1,070	860	660	4,130	1,100	732	560	396	1,270
20	880	1,630	1,030	1,060	860	710	3,970	1,060	698	545	384	1,220
21	1,000	1,730	1,060	1,040	850	780	3,890	1,060	664	530	384	1,180
22	1,020	1,880	1,100	1,030	840	820	3,730	1,140	650	516	384	1,100
23	1,020	2,040	1,150	1,020	840	820	3,650	1,140	650	502	371	1,000
24	1,000	2,150	1,250	1,010	840	830	3,570	1,060	665	488	384	920
25	960	2,150	1,400	1,000	840	840	3,410	1,000	650	475	396	900
26	900	1,980	1,600	990	840	860	3,170	980	605	462	422	920
27	860	1,830	1,800	980	830	880	2,890	1,100	590	475	448	960
28	840	*1,730	2,000	960	820	910	2,700	1,350	575	516	462	1,020
29	820	1,550	2,150	950	-	950	2,440	1,440	590	530	462	1,060
30	860	1,450	2,150	940	-	1,000	2,200	1,440	620	545	516	1,060
31	900	-	2,000	930	-	1,050	-	1,350	-	516	768	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	22,816	1,020	547	736	0.669	0.77
November	42,660	2,150	940	1,422	1.29	1.44
December	38,790	2,150	980	1,251	1.14	1.31
Calendar year 1940	506,835	6,610	547	1,385	1.26	17.14
January	36,320	1,850	930	1,172	1.07	1.23
February	24,040	920	820	859	.781	.81
March	25,470	1,050	660	822	.747	.86
April	88,810	4,210	1,150	2,960	2.69	3.00
May	40,900	1,980	980	1,319	1.20	1.38
June	23,419	1,310	575	781	.710	.79
July	16,675	650	462	538	.489	.56
August	13,454	768	371	434	.395	.45
September	30,340	1,310	860	1,011	.919	1.03
Water year 1940-41	403,697	4,210	371	1,106	1.01	13.63

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 14-18, Nov. 29 to Apr. 6.

Holland Creek near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°03'00", in NW¼ sec. 34, T. 46 N., R. 14 W., 4⅝ miles west of Seney.

Drainage area.- 13 square miles (watershed indeterminate because of swamps).

Records available.- May 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 128 second-feet Apr. 10 (gage height, 1.68 feet); minimum observed, 1.5 second-feet Aug. 19.
1938-41: Maximum discharge observed, 572 second-feet Apr. 24, 1939 (gage height, 4.25 feet); minimum observed, 0.8 second-foot Aug. 24, 1939.

Remarks.- Records fair except those below 5 second-feet, which are poor. Gage read once daily except during winter when it was read about thrice weekly. No readings Sundays and holidays.

Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Jan. 6, Apr. 11, 12)

Oct. 1 to Apr. 10				Apr. 11 to Sept. 30			
0.4	5.0	1.0	50	0.29	1.5	0.7	31
.5	10	1.3	82	.3	2.0	.8	41
.6	16	1.7	128	.4	7.4	1.0	62
.8	32			.5	14	1.6	129
				.6	22		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	4.0	a12	a24	a6.9	a6.7	8.7	18	a13	4.0	2.5	17
2	2.5	5.0	b12	a23	a6.7	a6.5	9.8	15	12	4.0	2.5	15
3	1.7	5.0	a11	a21	b6.5	b6.4	13	14	9.3	3.5	a2.5	14
4	1.7	5.5	b11	19	a6.3	a6.2	18	a12	7.4	a3.5	2.5	14
5	2.1	5.0	a11	a18	6.1	b6.2	26	11	7.4	4.0	2.5	14
6	1.7	6.1	a11	17	a6.1	a6.1	46	12	6.2	a4.0	2.0	14
7	1.7	6.1	a11	a17	6.1	b6.1	43	13	6.2	4.0	2.0	a13
8	1.7	6.1	a11	16	a6.1	a6.1	71	17	a6.2	4.0	2.5	12
9	2.1	6.6	11	a16	a6.1	a6.1	93	12	6.2	4.0	2.0	12
10	1.7	9.2	a11	15	b6.1	6.1	128	12	6.2	3.5	a2.5	26
11	1.7	9.8	12	a14	a6.1	a6.1	123	a11	6.2	4.0	3.0	a24
12	2.1	20	*12	a14	6.1	6.1	100	10	6.2	3.5	2.0	22
13	2.1	15	13	13	a6.4	a6.3	a95	8.6	6.2	a3.5	2.0	20
14	2.1	a13	a12	a12	7.1	6.6	90	8.6	6.8	3.0	2.0	a21
15	2.5	12	a12	*12	*7.1	a6.9	84	8.6	a6.0	3.0	2.0	31
16	2.1	11	12	a11	a7.3	a7.0	64	9.9	5.1	4.0	2.0	41
17	2.1	a12	a12	10	b7.5	a7.0	70	9.3	5.6	3.5	a2.0	43
18	1.7	a13	b12	a10	a7.5	b7.0	58	a8.4	5.6	3.5	2.0	33
19	5.5	15	a11	a10	b7.5	a7.1	55	7.4	5.1	3.0	1.5	28
20	6.1	a16	11	10	a7.5	b7.1	a62	6.2	4.5	a3.0	2.0	23
21	5.5	18	a11	a9.7	a7.5	b7.1	70	6.8	5.1	3.0	2.0	a20
22	5.0	a20	a11	9.2	a7.5	a7.0	53	6.2	a5.1	3.0	2.0	15
23	5.0	22	12	a8.6	a7.4	a7.0	59	6.2	5.1	3.0	2.0	14
24	4.5	a19	a15	8.2	b7.4	b6.9	47	6.2	5.1	2.0	a2.0	12
25	4.5	*18	a20	a7.9	a7.3	a7.1	41	a5.8	4.0	3.0	3.0	15
26	4.0	a16	26	a7.7	b7.1	7.1	33	5.1	4.0	3.0	2.0	18
27	3.5	15	a29	b7.6	a7.0	*6.6	a29	19	4.5	3.0	2.0	18
28	3.5	a13	32	a7.4	b6.8	7.1	25	20	4.0	3.5	2.0	a17
29	4.5	12	a31	b7.3	-	b7.1	22	18	a4.0	3.0	a3.0	17
30	5.0	a12	28	a7.2	-	a7.1	18	a16	4.0	2.5	19	15
31	4.0	-	a26	7.1	-	7.1	-	14	-	2.5	a20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	96.4	6.1	1.7	3.11		
November	360.4	22	4.0	12.0		
December	472	32	11	15.2		
Calendar year 1940	6,474.5	280	1.7	17.7		
January	389.9	24	7.1	12.6		
February	191.1	7.5	6.1	6.82		
March	206.9	7.1	6.1	6.67		
April	1,654.5	128	8.7	55.2		
May	347.3	20	5.1	11.2		
June	182.3	13	4.0	6.08		
July	104.0	4.0	2.0	3.35		
August	103.0	20	1.5	3.32		
September	598	43	12	19.9		
Water year 1940-41	4,705.8	128	1.5	12.9		

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on the basis of weather records and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Goose Pen Outlet at Germfask, Mich.

Location.- Staff gage, lat. 46°14'00", long. 85°56'15", in S½ sec. 4, T. 44 N., R. 13 W., in southwest limits of Germfask.
Records available.- August 1939 to September 1941 (discontinued).
Extremes.- 1939-41: Maximum discharge observed, 21 second-feet Sept. 19, 20, 1939 (gage height, 0.94 foot); no flow Sept. 24, 26, Dec. 4-6, 1939, Jan. 13, 1940 to Sept. 30, 1941.
Remarks.- No flow during year; no diversions to Goose Pen Pond from Grays Creek. Water formerly diverted from left bank of Grays Creek about 1 mile upstream from mouth. Goose Pen Outlet discharges the overflow from Goose Pen Pond directly to Manistique River.
Cooperation.- Records of gate operation furnished by Fish and Wildlife Service.

Driggs River near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°07'30", in N½ sec. 36, T. 46 N., R. 15 W., 2 miles upstream from Walsh Creek and 8½ miles west of Seney.
Drainage area.- 70 square miles.
Records available.- March 1938 to September 1941.
Extremes.- Maximum discharge observed during year, 221 second-feet Apr. 15 (gage height, 8.78 feet); minimum observed, 28 second-feet Mar. 29 (gage height, 6.98 feet).
1938-41: Maximum discharge observed, 518 second-feet Apr. 27, 1939 (gage height, 11.08 feet); minimum observed, that of Mar. 29, 1941.
Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage read once daily Oct. 1 to Nov. 15, and except Sundays and holidays Mar. 23 to Sept. 30, and about thrice weekly Nov. 16 to Mar. 23.
Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	48	a61	a57	a45	a45	46	78	a65	78	44	143
2	45	48	b60	b56	a45	a44	48	72	65	67	42	119
3	43	49	a59	a54	b45	b43	49	72	62	62	a41	101
4	42	48	b58	b53	a44	a42	49	a70	62	a59	40	90
5	44	51	a59	a51	b44	b41	51	66	58	57	42	90
6	44	57	b62	b50	a45	a40	53	66	56	a56	40	90
7	45	56	a61	a49	b44	b39	57	67	57	55	39	a82
8	48	55	a59	b48	a45	a38	62	67	a56	55	39	72
9	49	51	58	a46	a44	a36	71	67	55	54	38	67
10	47	59	a56	b44	b44	b35	84	67	55	53	a39	78
11	46	62	54	a45	a45	a35	101	a65	54	52	41	72
12	48	76	a54	a46	51	34	113	63	54	52	47	67
13	51	76	54	b47	a54	a35	179	62	55	a51	43	64
14	49	a69	a54	a49	53	35	197	62	60	49	40	a65
15	48	62	a55	*b50	*48	a36	221	64	a62	47	38	78
16	45	66	b57	a50	a47	a38	185	66	56	58	38	78
17	43	a68	*b62	b49	b46	a36	161	64	56	61	a38	101
18	46	a66	b64	a49	a46	b37	149	a63	55	56	36	84
19	52	66	a59	a49	b46	a39	137	62	54	56	36	78
20	59	a70	55	b49	a45	b41	a145	61	53	a54	37	72
21	57	76	a55	a48	b45	*b42	149	62	52	51	37	a70
22	53	a81	a54	b48	a45	a45	131	62	a53	49	39	66
23	53	84	54	a48	a45	a47	125	61	53	48	40	62
24	49	a79	a56	b48	b45	48	119	60	53	52	a41	61
25	49	*71	a58	a47	a45	a45	107	a60	51	51	43	62
26	48	a68	62	a47	b45	42	101	58	50	47	47	67
27	47	66	a62	b47	a45	39	a97	78	49	a53	44	63
28	46	a64	62	a46	b45	33	90	78	78	51	42	a63
29	47	62	a61	b46	-	28	78	72	a75	49	a50	62
30	48	a61	60	a46	-	a35	78	a69	72	47	149	62
31	48	-	a59	b45	-	44	-	66	-	47	a155	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,482	59	42	47.8	0.683	0.79
November	1,915	84	48	63.8	.911	1.02
December	1,804	64	54	58.2	.831	.96
Calendar year 1940	24,021	239	30	65.6	.937	12.77
January	1,507	57	44	48.6	.694	.80
February	1,286	54	44	45.9	.656	.68
March	1,217	48	28	39.3	.561	.65
April	3,233	221	46	108	1.54	1.72
May	2,050	78	58	66.1	.944	1.09
June	1,736	78	49	57.9	.827	.92
July	1,677	78	47	54.1	.773	.89
August	1,485	155	36	47.9	.684	.79
September	2,329	143	61	77.6	1.11	1.24
Water year 1940-41	21,721	221	28	59.5	.850	11.55

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Driggs River near Germfask, Mich.

Location.- Cantilever chain gage, lat. 46°12'00", long. 86°00'00", in N½ sec. 24, T. 44 N., R. 14 W., three-quarters of a mile upstream from mouth and 5 miles southwest of Germfask.

Drainage area.- 114 square miles.

Records available.- April 1938 to September 1941 (discontinued).

Extremes.- Maximum discharge observed during year, 271 second-feet Apr. 15, 16; maximum gage height, 5.36 feet (ice jam) Dec. 6; minimum observed, 7.2 second-feet Aug. 20 (gage height, 2.44 feet).
1938-41: Maximum discharge observed, 1,040 second-feet Apr. 27, 1939 (gage height, 9.88 feet); minimum observed, that of Aug. 20, 1941.

Remarks.- Records fair Oct. 1 to Nov. 13 and Apr. 3 to June 4; poor Nov. 14 to Apr. 2 and June 5 to Sept. 30. Some diversion from river at a point about 10 miles above station to refuge pool during long periods.

Cooperation.- Observer's services and results of five discharge measurements furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	66	97	105	82	75	67	115	a84	60	11	75
2	43	71	95	102	81	75	71	110	84	57	10	70
3	41	71	94	100	80	74	76	104	80	55	10	66
4	41	71	93	98	78	74	85	a100	75	54	9.7	62
5	45	71	93	97	76	73	108	94	74	54	10	62
6	45	76	93	96	74	*74	a130	99	73	54	9.5	62
7	44	76	92	96	72	72	159	104	72	54	8.7	60
8	46	76	91	98	71	70	204	99	71	54	8.7	59
9	46	76	88	*99	69	70	218	94	70	54	8.7	58
10	46	80	86	97	67	69	226	94	68	40	8.7	64
11	46	85	83	95	66	68	226	a92	67	17	11	62
12	48	96	81	94	67	68	*234	89	65	16	12	60
13	48	96	*80	95	*69	68	a250	89	64	15	11	59
14	48	a90	82	96	74	68	256	84	66	15	10	60
15	48	86	85	94	75	68	271	89	70	14	8.5	62
16	59	88	86	93	74	71	271	89	72	18	8.0	74
17	60	94	87	92	73	70	241	89	58	20	8.0	78
18	59	97	87	91	72	65	226	a86	55	15	7.4	94
19	71	a100	87	90	72	69	211	84	53	15	7.4	85
20	76	*108	88	90	71	74	a220	84	50	15	7.2	82
21	76	a120	89	89	71	76	226	94	50	14	7.7	79
22	76	132	90	88	72	79	226	84	50	14	8.3	77
23	71	a135	93	87	73	81	211	80	50	14	9.0	75
24	66	a130	96	86	73	82	196	80	50	15	9.5	75
25	66	120	100	85	73	82	181	a74	50	16	10	75
26	66	a110	105	84	74	76	159	75	48	16	11	80
27	66	110	110	83	74	72	a150	99	46	15	11	78
28	62	105	115	82	74	66	139	99	50	16	10	77
29	66	100	115	81	-	64	127	94	58	12	12	76
30	66	100	115	80	-	64	115	a89	54	11	27	76
31	66	-	110	80	-	65	-	84	-	11	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,751	76	41	56.5		
November	2,836	135	66	94.5		
December	2,906	115	80	93.7		
Calendar year 1940	36,241	484	39	99.0		
January	2,843	105	80	91.7		
February	2,047	82	66	73.1		
March	2,222	82	64	71.7		
April	5,480	271	67	183		
May	2,840	115	74	91.6		
June	1,877	84	46	62.6		
July	850	60	11	27.4		
August	346.0	45	7.2	11.2		
September	2,122	94	58	70.7		
Water year 1940-41	28,120.0	271	7.2	77.0		

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for other stations in the Manistique River basin.
Note.- Stage-discharge relation affected by ice Nov. 14-18, Nov. 27 to Apr. 2. Discharge June 5 to Sept. 30 computed on basis of occasional gage readings, weather records, and records for other stations in the Manistique River Basin.

Walsh Creek near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°10'40", in NW¼ sec. 34, T. 46 N., R. 15 W., 3⅝ miles upstream from Driggs River and 11 miles west of Seney.

Drainage area.- 12 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 156 second-feet Apr. 10 (gage height, 4.64 feet); minimum observed, 1.2 second-feet Aug. 21 (gage height, 0.34 foot).
1938-41: Maximum discharge observed, 598 second-feet Apr. 25, 1939 (gage height, 7.35 feet); minimum observed, 0.7 second-foot Sept. 3, 1939 (gage height, 0.38 foot).

Remarks.- Records fair. Gage read once daily Oct. 1 to Nov. 13, and except Sundays and holidays, Mar. 26 to Sept. 30; about thrice weekly Nov. 14 to Mar. 25.

Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except days of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 16)

Oct. 1 to Apr. 10

0.5	2.7	1.3	14	2.8	49
.6	3.8	1.6	20	3.2	65
.7	5.0	1.9	26	3.6	86
.8	6.4	2.2	32	4.0	111
1.0	9.4	2.5	40	4.6	156

Apr. 11 to Sept. 30

0.34	1.2	0.8	6.0	1.4	16
.4	1.7	1.0	8.7	1.6	20
.6	3.7	1.2	12		

Note.- Same as preceding table above 1.8 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	7.7	a15	a23	a7.8	a8.6	8.6	16	a10	4.2	2.2	8.7
2	2.7	11	14	22	a7.8	a8.2	10	14	9.9	4.1	1.9	7.3
3	2.5	11	a13	a20	7.8	7.8	12	13	8.4	3.8	a1.8	6.3
4	2.4	11	13	18	a7.7	a7.6	16	a12	7.3	a3.7	1.6	7.3
5	3.2	12	a13	a16	7.5	7.5	22	10	6.9	3.5	1.5	9.6
6	3.0	16	12	14	a7.5	a7.4	32	11	6.3	a3.5	1.4	9.2
7	2.6	14	a12	a14	7.5	7.4	40	12	6.0	4.1	1.3	a8.4
8	3.6	14	a12	14	a7.4	a7.3	61	12	a6.0	3.9	1.5	7.2
9	3.4	16	12	a14	a7.3	a7.2	111	10	6.0	3.6	1.5	7.4
10	3.1	28	a13	13	7.2	7.1	156	9.8	5.6	3.5	a1.8	13
11	3.0	28	13	a13	a7.3	a7.1	148	a9.2	5.4	3.3	2.6	10
12	4.0	43	12	a12	7.4	7.0	132	8.7	5.2	3.3	2.5	9.8
13	4.0	32	12	11	a8.4	a7.0	a122	8.1	5.4	a3.2	1.9	9.3
14	3.8	a29	a12	a10	9.1	7.1	118	8.1	8.6	3.0	1.9	a13
15	3.8	26	a12	10	*9.1	a7.0	118	9.0	a7.8	2.9	1.9	18
16	3.6	18	12	a9.9	a9.2	a7.0	86	8.8	6.5	4.2	1.9	26
17	3.6	a19	a12	9.7	9.4	a7.0	70	8.1	5.9	3.5	a1.6	36
18	3.6	a23	12	a9.5	a9.4	b7.0	57	a7.7	5.4	3.6	1.3	42
19	7.7	30	a12	a9.2	9.4	a7.0	49	7.2	5.0	3.6	1.5	26
20	8.9	a36	12	9.1	a9.4	b7.2	a50	6.5	4.7	a3.4	1.4	20
21	8.4	44	a12	a9.1	9.4	*7.4	57	7.4	4.6	3.0	1.2	a17
22	7.7	a56	a12	9.1	a9.4	a7.0	48	6.4	a4.9	2.7	1.4	13
23	7.5	61	12	a9.0	a9.4	a6.7	48	6.0	4.6	2.7	1.3	10
24	7.0	a54	a13	8.8	9.4	6.5	40	5.8	4.2	2.8	a2.0	9.6
25	6.3	35	a20	a8.5	a9.1	a6.6	34	a5.6	4.1	2.4	3.3	12
26	5.8	a28	24	a8.2	8.8	6.8	30	5.5	4.0	2.2	3.0	16
27	5.6	22	a25	8.1	a8.8	7.0	a27	16	3.7	a2.5	2.3	14
28	5.1	a20	26	a8.0	8.8	7.2	22	16	5.2	3.0	2.2	a12
29	5.7	18	a26	8.0	-	7.2	20	14	a4.7	2.8	a3.0	11
30	8.0	a16	26	a7.9	-	a7.2	16	a12	4.2	2.5	9.4	10
31	8.0	-	a25	7.8	-	7.2	-	11	-	2.5	a9.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	150.3	8.9	2.4	4.85	0.404	0.47
November	778.7	61	7.7	26.0	2.17	2.41
December	471	26	12	15.2	1.27	1.46
Calendar year 1940	7,037.6	290	2.2	19.2	1.60	21.82
January	363.9	23	7.8	11.7	.975	1.13
February	236.7	9.4	7.2	8.45	.704	.73
March	223.3	8.6	6.5	7.20	.600	.69
April	1,760.6	156	8.6	58.7	4.89	5.46
May	306.9	16	5.5	9.90	.825	.95
June	176.5	10	3.7	5.88	.490	.55
July	101.0	4.2	2.2	3.26	.272	.31
August	73.8	9.7	1.2	2.38	.198	.23
September	419.1	42	6.3	14.0	1.17	1.30
Water year 1940-41	5,061.8	156	1.2	13.9	1.16	15.69

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Duck Creek near Blaney.
b Stage-discharge relation affected by ice.

Marsh Creek near Shingleton, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°14'20", in NW¼ sec. 31, T. 46 N., R. 15 W., 11 miles east of Shingleton.

Drainage area.- 20 square miles (watershed indeterminate because of swamps).

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 122 second-feet Apr. 15 (gage height, 3.60 feet); no flow at times.
1938-41: Maximum discharge observed, 268 second-feet Mar. 31, 1938 (gage height, 4.20 feet); no flow at times each year.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, and those below 5 second-feet, which are poor. Gage read once daily Oct. 1 to Nov. 13, and except Sundays and holidays Mar. 26 to Sept. 30; about thrice weekly Nov. 14 to Mar. 25.

Cooperation.- Observer's services and results of four discharge measurements furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	3.6	a8.0	a13	a4.3	a3.6	5.4	9.0	a6.0	0.7	0	0.5
2	.1	4.6	b7.4	11	a4.3	a3.6	6.0	7.8	5.4	.4	0	.4
3	0	4.8	a7.0	a9.7	b4.2	b3.6	7.2	6.8	4.0	.1	a0	.3
4	0	5.2	b6.7	b8.6	a4.0	a3.6	8.2	a5.9	2.9	a0	0	1.0
5	.1	5.6	a6.4	a8.0	b3.9	b3.6	10	5.0	2.2	0	0	1.1
6	.1	7.2	b6.2	b7.8	a3.8	a3.6	29	4.4	1.5	a0	0	.8
7	.2	7.0	a6.1	a7.7	b3.7	b3.6	42	5.2	1.4	.1	a0	a.6
8	.6	7.2	a6.0	b7.6	a3.6	a3.6	92	4.4	a1.3	.3	0	.4
9	.6	7.6	b6.0	a7.5	a3.5	a3.5	92	4.0	1.1	.1	0	1.0
10	.4	12	a5.9	b7.4	b3.5	b3.5	86	3.4	1.0	.1	a0	1.4
11	.6	14	b5.8	a7.2	a3.5	a3.5	76	a3.1	.9	.1	0	5.0
12	.8	19	a5.7	a7.0	b3.6	b3.5	76	2.9	.7	.1	0	5.6
13	.8	17	b5.6	b6.9	a3.7	a3.5	a95	2.5	1.1	a0	0	5.4
14	.7	a15	a5.5	a6.8	b3.6	b3.5	*114	2.6	3.4	0	0	a5.6
15	.7	12	*b5.5	*b6.7	*b3.4	a3.6	122	3.2	a2.5	0	0	7.2
16	.7	11	b5.5	a6.5	a3.4	a3.6	92	3.2	1.8	.2	0	12
17	.7	a13	a5.5	b6.4	b3.5	a3.6	76	2.6	1.4	.1	a0	18
18	.7	a21	b5.5	a6.2	a3.5	b3.6	54	a2.2	1.1	.2	0	19
19	2.1	27	a5.5	a6.0	b3.5	a3.6	45	1.9	.7	.1	0	16
20	2.9	a31	b5.5	b5.9	a3.5	b3.6	a47	1.5	.4	a0	0	12
21	3.4	36	a5.6	a5.8	b3.7	*b3.6	48	2.1	.4	0	0	a10
22	3.7	a42	a5.5	b5.5	a3.8	a3.6	45	1.7	a.5	0	0	7.6
23	3.7	45	b5.4	a5.4	a3.7	a3.6	42	1.4	.6	0	0	6.8
24	3.3	a39	a6.2	b5.4	b3.6	b3.6	36	1.2	.3	0	a0	5.8
25	3.2	*25	a9.0	a5.2	a3.6	a3.7	29	a1.0	.1	0	0	8.8
26	2.9	a16	12	a5.0	b3.5	b3.8	23	.8	.1	0	0	8.8
27	2.9	b13	a14	b4.9	a3.6	b3.9	a19	6.2	.1	a0	0	9.2
28	2.7	a11	15	a4.8	b3.6	b4.0	15	7.4	1.0	0	0	a8.3
29	3.0	b9.7	a16	b4.7	-	b3.9	13	7.2	a.6	0	a.2	7.6
30	3.6	a8.7	17	a4.5	-	a4.3	10	a6.8	.4	0	.6	6.8
31	3.4	-	a16	b4.4	-	4.8	-	6.4	-	0	a.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	48.7	3.7	0	1.57		
November	490.2	45	3.6	16.3		
December	243.0	17	5.4	7.84		
Calendar year 1940	4,012.1	132	0	11.0		
January	209.5	13	4.4	6.76		
February	103.1	4.3	3.4	3.68		
March	114.2	4.8	3.5	3.68		
April	1,454.8	122	5.4	48.5		
May	123.8	9.0	.8	3.99		
June	44.9	6.0	.1	1.50		
July	2.6	.7	0	.08		
August	1.4	.6	0	.05		
September	193.0	19	.3	6.43		
Water year 1940-41	3,029.2	122	0	8.30		

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

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Marsh Creek near Germfask, Mich.

Location.- Water-stage recorder, lat. 46°10'00", long. 86°00'50", in E½ sec. 35, T. 44 N., R. 14 W., 1 mile upstream from mouth and 7 miles southwest of Germfask.

Drainage area.- 15 square miles, not including area from which flow is diverted to Duck Creek (watershed indeterminate because of swamps).

Records available.- April 1938 to September 1941 (discontinued).

Extremes.- Maximum discharge during year, 78 second-feet Apr. 7 (gage height, 3.75 feet); minimum, 1.1 second-feet Aug. 22, 23, 24 (gage height, 0.94 foot).
1938-41: Maximum discharge, 319 second-feet Apr. 27, 1939 (gage height, 8.39 feet); minimum 0.2 second-foot Aug. 15, 1939 (gage height, 0.80 foot).

Remarks.- Records good except those below 10 second-feet and those for periods of ice effect, which are fair. Flow originating upstream from line between R. 14 W. and R. 15 W. is diverted from Marsh Creek Basin through drainage canal into Duck Creek and is not included in these records.

Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 14 to June 19)

Oct. 1 to Apr. 7, June 20 to Sept. 30				Apr. 8 to June 19			
0.9	0.9	1.5	5.5	1.0	2.2	1.4	6.8
1.0	1.4	1.6	7.0	1.1	3.1	1.6	10
1.1	2.0	1.7	9.0	1.2	4.1	2.0	18
1.3	3.4	4.0	88	1.3	5.4	4.0	88
1.4	4.3						

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	5.6	12	30	5.5	5.2	7.0	13	7.8	1.8	3.0	4.2
2	1.8	6.6	11	25	5.4	5.4	12	12	7.0	1.7	2.6	3.4
3	1.8	7.0	9.4	22	5.4	5.1	17	10	6.0	1.6	2.3	3.0
4	1.8	6.7	8.8	19	5.4	4.9	26	9.2	4.9	1.6	2.1	2.8
5	2.0	6.6	8.2	18	5.4	4.7	37	8.4	4.1	1.5	2.0	3.6
6	2.1	6.7	7.8	16	5.3	4.7	56	8.6	3.7	1.5	1.8	3.6
7	2.1	6.6	7.6	*15	5.3	4.8	74	11	3.4	1.6	1.7	3.0
8	2.3	6.4	7.6	14	5.5	5.0	78	12	3.3	1.7	1.6	2.8
9	2.4	6.6	7.5	13	5.6	4.9	74	11	3.0	1.7	1.6	2.8
10	2.4	11	7.4	12	5.6	4.8	72	9.2	2.8	1.6	1.5	4.1
11	2.4	15	7.4	12	5.8	4.7	66	8.1	2.6	1.6	1.6	4.8
12	2.4	21	7.2	11	5.5	4.4	58	7.2	2.5	1.5	1.8	4.1
13	2.4	20	*6.8	10	5.5	*4.3	49	6.7	2.5	1.5	1.8	3.6
14	2.5	17	6.5	10	7.0	4.1	44	6.2	3.9	1.4	1.7	4.0
15	2.6	15	6.2	9.6	6.8	4.2	38	6.5	4.1	1.4	1.6	6.1
16	2.6	13	7.0	9.0	6.6	4.3	34	8.2	3.4	1.9	1.5	10
17	2.6	14	7.4	8.5	*6.4	4.1	33	7.1	3.0	2.1	1.4	17
18	2.6	19	7.0	8.2	6.0	3.5	33	6.2	2.6	2.4	1.4	13
19	4.1	19	6.6	7.8	a5.8	3.9	33	5.5	2.4	2.4	1.4	10
20	6.1	*26	8.0	7.5	a5.6	4.2	36	5.4	2.4	2.2	1.2	e.4
21	5.5	26	9.5	7.2	a5.6	4.3	39	10	2.4	2.0	1.2	6.7
22	4.9	34	11	7.2	a5.7	4.3	35	9.8	2.6	1.8	1.2	5.5
23	4.9	34	12	6.7	a6.0	4.1	34	8.1	2.6	1.6	1.1	4.7
24	4.7	30	15	6.4	a5.7	4.0	32	6.4	2.4	1.5	1.2	4.1
25	4.7	26	22	6.2	a5.4	3.8	28	5.5	2.2	1.4	1.3	4.3
26	4.5	22	31	6.0	5.2	4.0	24	5.1	2.0	1.5	1.6	6.6
27	4.3	20	38	5.8	5.2	4.1	21	13	2.0	2.6	1.6	6.4
28	4.2	16	39	5.7	5.2	4.5	18	15	2.0	3.6	1.5	7.2
29	4.5	15	41	5.6	-	4.7	16	13	2.0	3.3	1.9	7.2
30	5.6	13	38	5.6	-	4.4	14	11	1.9	3.8	4.8	6.7
31	5.8	-	35	5.5	-	4.5	-	8.7	-	3.7	4.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	104.4	6.1	1.8	3.37		
November	484.8	34	5.6	16.2		
December	448.9	41	6.2	14.5		
Calendar year 1940	4,782.3	192	1.5	13.1		
January	345.5	30	5.5	11.1		
February	189.4	7.0	5.2	5.69		
March	137.9	5.4	3.5	4.45		
April	1,138	78	7.0	37.9		
May	277.1	15	5.1	8.94		
June	97.5	7.8	1.9	3.25		
July	61.5	3.8	1.4	1.98		
August	57.9	4.9	1.1	1.87		
September	173.7	17	2.8	5.79		
Water year 1940-41	3,486.6	78	1.1	9.55		

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations on nearby streams.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 23, Dec. 31 to Jan. 31, Feb. 14-18, Feb. 26 to Mar. 7, Mar. 17-20.

Duck Creek near Blaney, Mich.

Location.- Water-stage recorder, lat. 46°06'50", long. 86°04'50", in SE¼ sec. 17, T. 43 N., R. 14 W., 3 miles upstream from mouth and 7 miles west of Blaney.

Drainage area.- 92 square miles, including area from which flow is diverted to Duck Creek from Walsh Creek and Marsh Creek (watershed indeterminate because of swamps).

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge during year, 528 second-feet Apr. 12 (gage height, 7.15 feet); minimum, 6.0 second-feet Aug. 21 (gage height, 1.52 feet).
1938-41: Maximum discharge observed, 1,740 second-feet Apr. 26, 1939 (gage height, 11.70 feet, site and datum then in use); minimum, that of Aug. 21, 1941.

Remarks.- Records good except those for periods of ice effect, which are fair. Records include flow from Walsh Creek and Marsh Creek, which originates upstream from line between R. 14 W. and R. 15 W. and is diverted to Duck Creek through drainage canal about 3 miles upstream from station.

Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 4				Apr. 5 to Sept. 30					
1.8	10	3.0	70	1.5	5.6	2.0	20	3.3	104
2.1	22	4.0	164	1.6	7.7	2.2	28	4.5	225
2.7	50	4.6	224	1.8	13	2.5	43	7.1	516

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	40	105	195	43	45	60	154	66	19	27	54
2	13	44	95	160	43	45	80	134	61	18	23	42
3	12	46	85	140	42	44	110	118	55	16	21	34
4	12	46	80	130	42	*43	150	103	50	14	19	32
5	16	46	73	115	41	42	190	91	44	13	17	41
6	18	46	69	*100	41	41	242	89	40	12	14	39
7	19	47	67	95	40	40	274	100	37	15	12	32
8	20	46	65	90	41	40	313	99	34	16	12	28
9	20	48	65	85	41	40	*368	90	30	13	12	30
10	19	63	66	80	42	40	456	79	28	12	10	52
11	19	79	67	76	*42	40	504	71	27	12	11	56
12	20	100	64	74	41	40	516	64	26	12	11	50
13	21	90	62	70	44	40	504	58	26	11	11	45
14	22	85	*59	66	50	40	492	54	42	10	9.2	50
15	23	80	56	63	54	41	456	56	47	9.7	8.2	67
16	22	75	59	61	53	42	434	64	40	19	8.0	90
17	21	95	60	58	52	39	434	57	36	19	7.5	111
18	20	116	54	56	52	35	412	52	32	19	7.0	100
19	33	130	52	54	49	31	401	49	28	20	6.8	89
20	50	154	58	52	47	33	390	47	25	17	6.6	79
21	42	164	68	50	48	38	368	68	23	15	6.2	68
22	42	199	74	48	50	39	357	69	26	13	6.4	60
23	39	214	80	47	51	38	346	62	25	12	6.4	53
24	37	219	100	46	50	38	324	53	21	12	6.4	48
25	35	209	140	45	49	40	302	47	20	11	8.4	51
26	34	190	170	44	47	43	280	45	19	12	18	66
27	32	*160	210	43	46	45	252	87	20	23	16	63
28	32	140	250	42	46	46	225	109	23	30	12	69
29	33	130	259	42	-	47	199	102	21	32	13	65
30	40	115	249	42	-	48	174	86	20	36	58	61
31	40	-	224	43	-	50	-	73	-	33	68	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	819	50	12	26.4		
November	3,216	219	40	107		
December	3,185	259	52	103		
Calendar year 1940	39,821	1,360	11	109		
January	2,312	195	42	74.6		
February	1,287	54	40	46.0		
March	1,273	50	31	41.1		
April	9,613	516	60	320		
May	2,430	154	45	78.4		
June	992	66	19	33.1		
July	525.7	36	9.7	17.0		
August	472.1	68	6.2	15.2		
September	1,725	111	28	57.5		
Water year 1940-41	27,849.8	516	6.2	76.3		

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 12-16, Nov. 26 to Dec. 28, Jan. 1 to Apr. 5.

West Branch of Manistique River near Manistique, Mich.

Location.- Water-stage recorder, lat. 46°05'20", long. 86°09'40", in SE¼ sec. 27, T. 43 N., R. 15 W., 300 feet downstream from Stutts Creek and 10 miles northeast of Manistique.

Drainage area.- 322 square miles.

Records available.- April 1938 to September 1941.

Extremes.- Maximum discharge during year, 1,850 second-feet Apr. 18 (gage height, 8.08 feet); minimum, 108 second-feet Aug. 23 (gage height, 1.95 feet).
1938-41: Maximum discharge observed, 5,300 second-feet Apr. 29, 1939 (gage height, 12.9 feet); minimum observed, 100 second-feet Aug. 30, 1938.

Remarks.- Records good except those for period of ice effect, which are fair.

Cooperation.- Observer's services and results of six discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 6				Dec. 7 to Sept. 30			
2.2	146	4.0	551	1.9	100	4	500
2.5	196	4.5	706	2.2	146	6	1,070
3.2	334			3	288	8	1,810

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	271	450	490	250	220	320	695	410	228	154	223
2	154	281	410	430	240	220	340	638	400	228	148	241
3	150	281	360	390	240	220	350	588	378	227	141	260
4	149	291	330	370	240	220	360	550	358	218	136	269
5	154	302	340	360	240	220	378	512	328	204	133	269
6	154	302	350	350	240	220	410	488	308	195	130	269
7	163	312	360	340	230	*220	477	277	288	197	126	260
8	168	323	350	330	230	220	575	466	278	197	124	250
9	170	323	350	330	230	220	710	443	269	194	121	260
10	173	334	340	320	230	220	890	432	260	188	118	278
11	178	358	340	320	230	220	1,010	410	250	183	124	269
12	180	409	340	310	*230	220	1,100	400	241	180	128	269
13	180	409	330	310	230	220	1,190	378	232	175	130	260
14	187	436	330	310	220	220	1,330	358	260	170	128	260
15	196	492	330	300	220	220	1,530	358	278	166	126	269
16	198	492	*330	300	220	220	1,690	358	298	182	122	298
17	198	521	330	290	220	210	1,810	348	308	180	118	318
18	196	506	330	290	220	200	1,810	348	288	187	116	338
19	213	506	330	280	220	220	1,730	328	260	187	115	358
20	228	521	330	280	220	220	1,570	318	241	182	114	368
21	252	551	340	280	220	220	1,490	338	230	177	110	358
22	271	*612	340	280	220	230	1,370	348	227	166	110	328
23	271	643	350	270	220	230	1,290	328	225	160	109	308
24	271	674	380	*270	220	240	1,220	318	223	153	110	288
25	262	690	410	270	220	240	1,160	298	214	146	120	288
26	262	628	450	270	220	250	1,070	298	204	146	130	288
27	252	643	500	260	220	260	1,010	358	197	165	138	308
28	248	612	530	260	220	270	920	400	194	175	143	318
29	246	566	560	260	-	280	830	432	200	175	146	318
30	252	510	550	250	-	300	770	432	223	173	178	318
31	262	-	540	250	-	320	-	421	-	163	197	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,394	271	149	206	0.640	0.74
November	13,799	690	271	460	1.43	1.60
December	11,910	560	330	384	1.19	1.37
Calendar year 1940	164,810	2,800	145	450	1.40	19.04
January	9,620	490	250	310	.963	1.11
February	6,360	250	220	227	.705	.73
March	7,210	320	200	233	.724	.83
April	30,710	1,810	320	1,024	3.18	3.55
May	12,864	695	298	415	1.29	1.49
June	8,070	410	194	269	.835	.93
July	5,667	228	146	183	.568	.65
August	4,043	197	109	130	.404	.47
September	8,706	368	223	290	.901	1.01
Water year 1940-41	125,353	1,810	109	343	1.07	14.48

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 30 to Apr. 4.

Creighton River near Shingleton, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°16'35", in NW¼ sec. 35, T. 46 N., R. 16 W., 8 miles upstream from mouth and 9½ miles east of Shingleton.

Drainage area.- 35 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 378 second-feet Apr. 15 (gage height, 5.76 feet); minimum observed, 6.1 second-feet Aug. 21, 22.
1938-41: Maximum discharge observed, 552 second-feet Apr. 26, 1939 (gage height, 6.10 feet); minimum observed, 4 second-feet Aug. 30, 1938 (gage height, 2.22 feet).

Remarks.- Records fair except those for periods of ice effect or no gage-height record during period November to March, which are poor. Gage read once daily Oct. 1 to Nov. 13, daily except Sundays and holidays Mar. 26 to Sept. 30, and about three times weekly Nov. 14 to Mar. 25.

Cooperation.- Observer's services and results of five discharge measurements furnished by Fish and Wildlife Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15

2.7	14	3.4	32	4.6	102
2.8	16	3.6	39	4.8	127
2.9	19	3.8	48	5.0	159
3.0	21	4.0	58	5.2	206
3.1	24	4.2	70	5.4	262
3.2	26	4.4	84	5.8	396

Apr. 16 to Sept. 30

2.28	6.1	2.8	18
2.3	6.6	3.0	24
2.4	8.8	3.2	28
2.5	11	3.4	34
2.6	14	3.6	39

Note.- Same as preceding table above 3.6 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	35	a44	a47	a21	a22	22	58	a53	39	14	70
2	13	39	b41	41	a21	a21	25	56	50	36	12	80
3	13	41	a39	a39	b21	b21	29	48	41	32	a11	88
4	13	41	b37	b37	a21	a20	37	a43	36	a29	11	84
5	15	43	a36	a35	b20	b20	50	39	32	26	10	84
6	15	56	b35	34	a20	a20	73	38	28	a26	9.7	76
7	16	50	a35	a33	b20	b20	84	41	27	26	9.0	a68
8	21	50	a35	32	a20	a20	102	41	a27	25	8.8	58
9	21	50	35	a31	a19	a19	150	39	26	24	8.8	53
10	20	70	a35	b31	b19	b19	170	38	24	21	a9.0	58
11	20	73	35	a30	a19	a19	181	a36	22	21	10	53
12	24	97	a35	a30	19	b19	194	34	21	21	14	48
13	28	84	b34	30	a21	a19	a300	32	22	a20	12	43
14	26	a73	a33	a29	22	b19	360	31	35	17	11	a41
15	26	b65	*34	*28	*b23	a19	378	34	a36	16	9.7	56
16	26	b53	34	a27	a24	a19	343	35	31	20	9.2	73
17	25	a62	a35	26	24	a19	310	34	28	26	a8.6	92
18	25	a78	34	a26	a24	b19	262	a32	25	25	7.9	88
19	34	92	a33	a26	b24	a19	220	30	22	25	7.9	84
20	46	a100	32	26	a24	b19	a210	27	20	a24	6.8	73
21	43	108	a32	a26	b24	*b19	206	30	20	21	6.1	a58
22	41	a120	a32	25	a24	a18	194	28	a19	18	6.1	53
23	41	127	32	a24	a24	a18	181	27	18	17	6.8	46
24	37	a110	a35	24	b24	18	159	26	18	16	a8.0	43
25	34	*b86	a45	a24	a24	a18	141	a25	17	18	8.8	53
26	32	a72	53	a24	b24	19	120	24	16	17	12	61
27	34	b64	a56	24	a24	20	a105	67	16	a17	12	61
28	29	a57	58	a23	b23	20	88	70	30	17	9.7	a56
29	30	b53	a57	b22	-	b20	76	73	a36	16	a12	50
30	35	a47	56	a21	-	a20	67	a66	38	15	36	46
31	35	-	a51	21	-	20	-	58	-	15	a52	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	832	46	13	26.8	0.766	0.88
November	2,096	127	35	69.9	2.00	2.23
December	1,218	58	32	39.3	1.12	1.29
Calendar year 1940	19,076	452	10	52.1	1.49	20.26
January	896	47	21	28.9	.826	.95
February	617	24	19	22.0	.629	.66
March	602	22	18	19.4	.554	.64
April	4,837	378	22	161	4.60	5.14
May	1,260	73	24	40.6	1.16	1.34
June	834	53	16	27.8	.794	.89
July	686	39	15	22.1	.631	.73
August	369.9	52	6.1	11.9	.340	.39
September	1,897	92	41	63.2	1.81	2.02
Water year 1940-41	16,144.9	378	6.1	44.2	1.26	17.16

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Indian River near Manistique, Mich.

Location.- Chain gage, lat. 45°59'30", long. 86°17'15", in NE¼ sec. 34, T. 42 N., R. 16 W., at Indian Lake outlet, 2 miles northwest of Manistique.

Drainage area.- 302 square miles.

Records available.- March 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 576 second-feet Nov. 19-30; maximum gage height, 4.83 feet Nov. 18, 24, 25; minimum discharge observed, 146 second-feet July 14; minimum gage height, 3.39 feet Mar. 26.
1938-41: Maximum discharge observed, 1,000 second-feet Apr. 30, 1939 (gage height, 6.48 feet); minimum discharge observed, 106 second-feet Aug. 6, 7, 1939; minimum gage height, 3.30 feet Mar. 25, 1940.

Remarks.- Records good except those affected by occasional changes in boards on control dam 1½ miles below gage, which are fair. Stage of Indian Lake regulated at times by board obstruction on spillway. Gage read once daily.

Cooperation.- Five discharge measurements furnished by Fish and Wildlife Service.

Rating table, water year 1940-41, except day of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 18, May 24 to Sept. 30)

2.3	140
2.9	227
3.8	381
4.8	576

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	310	555	455	381	345	328	514	381	292	211	328
2	310	310	555	474	381	345	328	514	381	292	211	345
3	310	310	534	474	361	345	328	494	381	292	211	345
4	310	328	534	474	381	345	328	494	381	275	211	345
5	310	328	514	474	381	345	345	494	381	275	211	345
6	310	345	514	455	381	345	345	494	381	275	211	345
7	310	345	494	455	363	328	345	494	381	275	211	345
8	310	399	494	455	363	328	363	474	381	275	211	345
9	310	399	494	436	363	328	381	474	381	259	211	345
10	310	417	494	436	363	328	399	455	381	243	211	345
11	310	417	494	436	363	328	417	455	381	243	196	363
12	310	417	*b450	436	363	328	417	436	363	243	196	363
13	310	436	474	436	363	328	436	436	363	243	196	363
14	292	494	474	417	363	328	455	436	363	146	196	363
15	292	494	474	417	363	328	455	436	345	153	196	363
16	310	494	474	417	363	328	474	436	345	153	188	363
17	310	514	474	*436	363	328	494	436	345	160	181	363
18	292	514	474	417	363	328	494	436	345	160	310	381
19	292	576	474	417	363	328	514	436	345	160	363	381
20	310	576	455	417	363	328	514	436	345	211	363	381
21	310	576	455	417	363	328	514	436	328	211	363	381
22	310	576	455	417	363	328	534	436	310	211	363	381
23	310	576	455	399	363	328	534	436	310	211	345	381
24	310	576	455	399	363	310	534	381	310	211	345	363
25	310	576	455	399	345	310	534	259	310	211	345	363
26	310	576	455	399	345	310	534	275	310	211	310	363
27	310	576	455	381	345	310	534	310	310	211	310	363
28	310	576	455	381	345	310	534	328	310	211	310	381
29	310	*576	455	381	-	310	534	345	310	211	310	381
30	328	576	455	399	-	328	534	363	292	211	310	381
31	310	-	455	399	-	328	-	381	-	211	328	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,556	328	292	308	1.02	1.18
November	14,183	576	310	473	1.57	1.75
December	14,904	555	455	481	1.59	1.84
Calendar year 1940	152,102	721	292	416	1.38	18.76
January	13,205	474	381	426	1.41	1.63
February	10,200	381	345	364	1.21	1.26
March	10,182	345	310	328	1.09	1.25
April	13,480	534	328	449	1.49	1.66
May	13,230	514	259	427	1.41	1.63
June	10,450	381	292	348	1.15	1.29
July	6,946	292	146	224	.742	.86
August	8,134	363	181	262	.868	1.00
September	10,855	381	328	362	1.20	1.34
Water year 1940-41	135,305	576	146	371	1.23	16.69

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Stage-discharge relation affected by changes in boards on control dam 1½ miles below gage Oct. 1 to Nov. 18, May 24 to Sept. 30; discharge computed on basis of four discharge measurements, gage heights, record of changes in boards and weather records.

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

Location.- Lat. 45°52', long. 88°04', in sec. 12, T. 40 N., R. 31 W., at power plant of Wisconsin Michigan Power Co., 3 miles upstream from Pine River and 3½ miles north of city of Iron Mountain.

Drainage area.- 1,790 square miles.

Records available.- January 1914 to September 1941.

Average discharge.- 27 years, 1,750 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 4,100 second-feet Apr. 15; minimum daily, 559 second-feet Oct. 20.
1914-41: Maximum daily discharge, 16,700 second-feet Apr. 23, 24, 1916; minimum daily, 154 second-feet Aug. 9, 1925.

Remarks.- Records good. Discharge determined from power-plant records. Flow regulated by power plant at which station is located and also by plant on Brule River, about 5 miles upstream, where drainage area is 58 percent of that at station.

Cooperation.- Records of daily discharge computed by Wisconsin Michigan Power Co., on basis of load-discharge rating of hydroelectric units as developed by Geological Survey in 1932-33 and checked within one percent by two discharge measurements made in September 1939.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	820	1,810	875	925	964	940	1,250	1,640	2,270	1,270	950	1,990
2	793	2,040	1,200	1,190	911	781	1,230	1,560	2,300	1,120	830	2,170
3	874	1,290	1,180	1,410	1,110	932	1,490	1,430	2,190	1,080	920	2,170
4	833	1,410	1,050	1,200	1,130	995	2,280	1,430	1,930	826	976	2,200
5	805	1,300	1,010	1,020	1,080	1,030	1,910	1,470	1,830	869	951	2,040
6	741	1,220	1,310	1,270	1,040	1,060	2,430	1,510	1,650	970	978	2,230
7	896	1,350	1,390	1,200	1,060	1,080	2,500	1,700	1,410	1,080	1,010	1,810
8	900	1,490	1,130	1,000	1,060	905	2,500	1,910	1,050	1,290	884	2,150
9	743	1,140	1,360	1,050	908	876	2,480	1,470	1,380	1,080	765	1,850
10	808	1,080	1,370	1,000	1,020	990	2,740	1,270	1,350	990	783	1,570
11	729	1,240	1,280	1,070	984	963	3,490	1,350	1,330	1,010	869	1,220
12	827	1,880	1,220	1,180	1,000	1,010	3,630	1,760	1,140	957	976	1,140
13	704	2,620	1,230	1,230	947	1,020	3,790	1,840	1,140	1,050	996	1,040
14	866	2,600	1,190	1,280	1,030	972	4,050	1,740	1,080	1,160	1,010	1,130
15	789	2,480	1,000	1,150	1,020	924	4,100	1,700	965	1,160	995	1,860
16	815	1,780	1,100	1,220	828	895	3,970	1,980	1,260	1,240	934	2,060
17	821	1,560	991	1,060	988	961	3,360	1,990	1,230	1,300	1,010	2,130
18	851	1,590	1,150	1,020	1,000	1,000	2,820	1,530	1,230	1,340	1,020	2,140
19	796	1,490	1,180	845	997	959	2,840	1,780	1,290	1,190	929	2,150
20	589	1,790	1,160	1,070	1,030	1,060	2,710	2,050	1,290	1,010	940	1,810
21	938	1,750	1,210	1,050	1,120	998	2,360	1,850	979	1,030	958	1,240
22	890	1,840	1,100	1,080	1,100	924	2,500	1,770	965	1,080	996	2,190
23	866	1,820	1,340	1,060	928	872	2,460	1,600	985	1,110	985	2,150
24	940	1,760	1,420	946	1,180	1,000	2,440	1,290	1,070	1,090	1,000	2,160
25	952	1,970	1,190	940	1,070	1,050	2,380	1,130	1,060	1,010	1,030	2,150
26	910	1,690	1,280	898	956	1,040	2,390	1,360	1,020	1,080	1,050	1,520
27	722	1,730	1,370	1,100	1,010	1,060	1,710	1,600	1,120	999	996	1,360
28	913	1,550	1,320	995	1,030	1,040	1,320	1,580	993	1,050	1,010	1,660
29	1,060	1,450	1,020	996	-	909	1,750	1,780	966	1,110	1,300	1,470
30	1,350	1,320	1,340	1,020	-	852	1,880	1,860	1,230	1,060	2,160	1,710
31	1,760	-	1,390	1,140	-	1,200	-	2,200	-	1,090	2,020	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	27,276	1,760	559	880	0.492	0.57
November	50,060	2,620	1,080	1,669	.932	1.04
December	37,356	1,420	875	1,205	.673	.78
Calendar year 1940	690,821	9,630	559	1,887	1.05	14.35
January	33,618	1,410	848	1,084	.606	.70
February	28,511	1,180	828	1,018	.569	.59
March	30,298	1,200	781	977	.546	.63
April	76,760	4,100	1,230	2,559	1.43	1.60
May	51,130	2,200	1,130	1,649	.921	1.06
June	39,703	2,300	965	1,323	.739	.82
July	33,701	1,340	826	1,087	.607	.70
August	32,231	2,160	765	1,040	.581	.67
September	54,470	2,230	1,040	1,816	1.01	1.13
Water year 1940-41	495,114	4,100	559	1,356	.758	10.29

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

Location.- Lat. 45°49', long. 88°15', in sec. 28, T. 39 N., R. 18 E., at power plant of Wisconsin Michigan Power Co., 4 miles downstream from Popple River and 6½ miles south of Florence.

Drainage area.- 543 square miles.

Records available.- October 1923 to September 1941. January 1914 to September 1923 at at site 4 miles upstream (drainage area is 511 square miles).

Average discharge.- 18 years (1923-41) 428 second-feet.

Extremes.- Maximum daily discharge during year, 2,160 second-feet Sept. 1; minimum daily, 50 second-feet (estimated) July 27, Aug. 10, 17.
1923-41 (regulated): Maximum daily discharge, 4,380 second-feet Apr. 9, 1929; no flow at times in 1924, 1926, 1927, 1930, 1931, 1933, 1940.

Remarks.- Records good except those for high stages, which are fair. Discharge determined from power-plant records. Flow regulated by power plant at station, but pondage is small and monthly discharge is very nearly natural flow.

Cooperation.- Records of daily discharge computed by Wisconsin Michigan Power Co. on basis of load-discharge rating of hydroelectric units as developed by Geological Survey in 1931-32 and revised in 1939 on basis of two discharge measurements made in September 1939.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	535	312	325	208	208	348	606	572	199	139	2,160
2	312	546	342	325	259	224	373	598	560	176	111	2,150
3	221	611	325	312	221	215	544	511	395	198	81	1,890
4	312	598	221	312	312	205	577	512	357	52	104	1,730
5	221	491	312	325	221	171	763	561	354	208	118	1,800
6	164	435	312	325	208	208	695	388	335	56	124	1,720
7	286	486	312	325	312	64	859	531	312	205	110	1,560
8	210	342	318	318	208	221	864	607	240	208	127	1,480
9	318	399	325	312	256	157	864	520	227	192	70	958
10	718	416	321	312	208	291	1,040	558	312	91	e50	933
11	312	543	325	221	256	208	1,160	494	207	202	177	958
12	208	544	325	325	208	221	1,240	397	195	208	192	678
13	269	617	312	312	312	108	1,210	360	207	152	176	598
14	215	615	299	312	208	208	1,550	378	197	221	160	592
15	312	624	192	312	312	234	1,660	381	195	221	52	901
16	312	624	281	212	149	226	1,580	520	207	195	188	1,410
17	312	637	260	312	312	208	1,580	494	208	168	e50	1,530
18	215	637	299	221	208	208	1,460	519	202	173	135	1,440
19	312	511	312	257	312	224	1,340	342	216	208	102	1,230
20	312	533	312	221	108	221	1,310	344	165	130	167	998
21	244	480	312	312	280	203	1,220	312	194	195	136	821
22	221	529	312	208	208	208	1,100	312	50	204	126	722
23	312	637	312	221	205	218	984	312	208	186	155	611
24	215	624	316	312	224	208	984	272	208	165	164	611
25	312	482	325	179	208	208	916	207	162	101	208	611
26	208	517	325	256	312	208	744	221	137	140	208	570
27	179	496	325	215	208	221	744	216	109	e50	208	463
28	235	405	438	312	208	221	744	303	208	197	182	474
29	221	399	382	218	-	221	624	312	136	128	260	345
30	444	367	325	312	-	267	624	338	215	208	1,220	431
31	504	-	352	212	-	218	-	482	-	192	1,800	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,844	718	164	285	0.525	0.61
November	15,980	844	342	533	.982	1.10
December	9,741	438	192	314	.578	.67
Calendar year 1940	177,750	1,910	0	486	.895	12.18
January	8,653	325	179	279	.514	.59
February	6,681	312	108	239	.440	.46
March	6,431	291	64	207	.381	.44
April	29,701	1,660	348	990	1.82	2.03
May	12,908	607	207	416	.766	.88
June	7,290	572	50	243	.448	.50
July	5,229	221	50	169	.311	.36
August	7,100	1,800	50	229	.422	.49
September	32,375	2,160	345	1,079	1.99	2.22
Water year 1940-41	150,933	2,160	50	414	.762	10.35

e Estimated.

Pike River at Amberg, Wis.

Location.- Staff gage, lat. 45°29', long. 88°00', in sec. 21, T. 35 N., R. 20 E., 500 feet upstream from Chicago, Milwaukee, St. Paul & Pacific Railroad bridge, a quarter of a mile south of Amberg, and 1¼ miles below North Branch of Pike River.

Drainage area.- 250 square miles.

Records available.- February 1914 to September 1941.

Average discharge.- 27 years, 230 second-feet.

Extremes.- Maximum discharge observed during year, 960 second-feet Sept. 1 (gage height, 4.38 feet); minimum observed, 86 second-feet Aug. 6-10, 17-20.
1914-41: Maximum discharge observed, 2,730 second-feet Apr. 10, 1922 (gage height, 7.68 feet, site and datum then in use), from rating curve extended above 1,100 second-feet; minimum observed, 26 second-feet Dec. 27, 1925 (gage height, 1.30 feet, site and datum then in use.

Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.6	86	2.2	204	3.5	620
1.8	114	2.5	289	4.0	800
2.0	153	3.0	449		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	294	170	215	175	160	218	231	289	114	99	960
2	153	335	175	200	175	160	382	231	274	106	99	875
3	142	335	160	180	175	160	432	231	231	99	a96	620
4	132	289	200	165	170	165	482	231	190	106	92	550
5	132	289	215	160	170	170	550	218	177	106	92	655
6	132	246	220	165	170	170	a585	218	165	99	86	727
7	132	231	220	160	170	170	620	260	153	106	86	516
8	132	218	215	190	165	175	691	274	153	106	86	482
9	123	204	210	190	*165	175	655	260	153	99	86	398
10	132	260	205	*190	170	175	620	246	142	99	86	366
11	132	415	200	190	170	175	620	218	132	123	92	320
12	132	550	190	190	170	175	550	204	132	123	99	289
13	132	516	185	190	170	*180	516	204	132	114	99	260
14	153	482	185	190	170	185	550	190	153	114	99	a230
15	231	449	182	190	170	200	655	218	a142	106	92	260
16	218	382	180	190	170	200	691	274	132	123	92	449
17	190	294	180	190	170	200	620	274	132	123	86	800
18	165	289	180	180	170	160	550	246	123	142	86	727
19	177	274	180	175	170	200	482	231	114	132	86	585
20	177	274	180	170	165	220	482	204	114	132	86	482
21	165	289	180	170	165	200	449	190	114	114	92	382
22	153	335	185	170	165	210	415	177	114	114	99	335
23	142	335	190	170	165	220	382	165	114	106	106	289
24	142	320	195	170	165	220	366	153	106	106	106	260
25	142	246	205	170	160	220	335	153	106	99	114	320
26	142	260	215	170	160	210	320	153	99	99	123	320
27	153	260	225	170	160	205	289	142	106	a96	114	294
28	142	246	235	170	160	205	274	153	123	92	114	274
29	177	215	235	175	-	205	260	190	123	99	190	260
30	274	190	230	175	-	204	246	204	114	106	449	274
31	320	-	225	175	-	204	-	231	-	106	763	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,001	320	123	161	0.644	0.74
November	9,322	550	190	311	1.24	1.38
December	6,172	235	170	199	.796	.92
Calendar year 1940	83,973	727	115	229	.916	12.49
January	5,575	215	160	180	.720	.83
February	4,700	175	160	168	.672	.70
March	5,878	220	160	190	.760	.88
April	14,207	691	218	476	1.90	2.12
May	6,574	274	142	212	.848	.98
June	4,352	289	99	145	.580	.65
July	3,409	142	92	110	.440	.51
August	4,095	763	86	132	.528	.61
September	13,559	960	230	452	1.81	2.02
Water year 1940-41	82,924	960	86	227	.908	12.34

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of Wolf River above West Branch of Wolf River.
Note.- Stage-discharge relation affected by ice Nov. 29 to Mar. 29.

Oconto River near Gillett, Wis.

Location.- Water-stage recorder, lat. 44°52', long. 88°18', in sec. 34, T. 28 N., R. 18 E., at highway bridge 2 miles upstream from Christy Brook and 2½ miles south of Gillett.

Drainage area.- 678 square miles.

Records available.- June 1906 to March 1909, January 1914 to September 1941.

Average discharge.- 28 years (1908, 1914-41), 598 second-feet.

Extremes.- Maximum discharge during year, 1,900 second-feet Apr. 18 (gage height, 3.64 feet); maximum gage height, 4.95 feet Apr. 4 (ice affected); minimum, 223 second-feet Aug. 8, 9 (gage height, 0.69 foot).

1906-9, 1914-41: Maximum discharge observed, 6,470 second-feet Apr. 11, 1922, caused by failure of dam at Pulcifer, 4 miles upstream (gage height, 9.1 feet); minimum observed, 95 second-feet June 3, 6, 1907 (gage height, 0.1 foot).

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

0.7	226	1.5	550	3.0	1,440
.8	258	1.8	700	3.5	1,800
1.0	331	2.2	910		
1.2	413	2.6	1,150		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	489	360	610	420	350	920	785	1,020	312	316	910
2	327	517	390	580	420	350	1,020	750	1,020	297	286	1,050
3	335	550	425	500	415	355	1,120	685	965	286	272	1,400
4	323	545	450	410	410	355	1,200	630	828	276	265	1,580
5	304	522	490	350	405	355	1,230	594	700	268	265	a1,660
6	297	494	530	400	400	355	1,260	579	619	265	232	a1,700
7	320	453	560	440	400	355	1,290	619	565	258	229	a1,760
8	355	444	580	470	395	355	1,290	710	512	252	226	a1,760
9	316	439	580	*525	*390	360	1,290	735	462	255	226	a1,760
10	308	508	560	510	390	370	1,290	720	439	258	236	a1,730
11	308	670	540	490	380	375	1,290	670	439	268	245	1,700
12	339	795	520	480	350	380	1,260	594	453	290	272	1,510
13	351	855	490	460	370	*385	1,260	555	517	312	290	1,370
14	339	910	460	460	390	390	1,290	531	594	290	255	1,260
15	379	910	440	480	410	395	1,400	579	594	279	258	1,120
16	422	828	430	500	420	395	1,580	745	536	304	272	1,020
17	417	828	420	480	400	390	1,760	828	475	339	282	910
18	413	938	420	460	390	380	1,900	800	435	331	239	910
19	396	750	425	430	380	350	1,840	745	400	308	242	992
20	379	710	435	415	360	350	1,760	635	375	304	242	1,150
21	375	720	450	400	350	360	1,620	560	359	316	255	1,150
22	359	760	470	400	350	370	1,510	560	351	301	286	1,080
23	359	795	480	410	350	380	1,400	545	335	282	279	938
24	359	795	450	410	350	390	1,290	485	331	276	255	828
25	367	770	500	410	340	410	1,180	417	323	265	279	828
26	371	725	580	410	340	440	1,120	409	312	252	286	828
27	367	690	600	410	335	480	1,050	466	312	245	276	855
28	355	609	620	420	340	550	965	670	316	242	262	785
29	375	522	620	420	-	620	882	938	316	248	279	765
30	435	450	620	420	-	700	800	910	320	265	383	720
31	475	-	620	420	-	800	-	1,020	-	304	795	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11,145	475	297	360	0.531	0.61
November	19,991	938	439	666	.982	1.10
December	15,515	620	360	500	.737	.85
Calendar year 1940	194,078	1,540	297	530	.782	10.65
January	13,980	610	350	451	.665	.77
February	10,650	420	335	380	.560	.58
March	12,850	800	350	415	.612	.71
April	39,067	1,900	800	1,302	1.92	2.14
May	20,469	1,020	409	660	.973	1.12
June	15,223	1,020	312	507	.748	.83
July	8,748	339	242	282	.416	.48
August	8,785	795	226	283	.417	.48
September	36,029	1,760	720	1,201	1.77	1.98
Water year 1940-41	212,452	1,900	226	582	.858	11.65

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of range line and precipitation record at High Falls.
Note.- Stage-discharge relation affected by ice Nov. 30 to Apr. 5.

Wheeler Lake near Lakewood, Wis.

Location.- Staff gage, lat. 45°19', long. 88°29', in sec. 27, T. 33 N., R. 16 E., on southwest shore of lake at Berglund's resort, 3½ miles east of Lakewood.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.13 feet Apr. 4; minimum, 94.80 feet Aug. 22.
1936-41: Maximum elevation observed, that of Apr. 4, 1941; minimum observed, 93.64 feet Oct. 9, 12, 1937.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	5.16	-	-	-	-	-	-	-	-	5.02	4.88
2	-	-	5.34	-	-	-	-	5.59	5.42	-	-	-
3	-	-	-	5.72	5.70	5.73	-	-	-	-	-	-
4	5.22	5.14	-	-	-	-	6.13	-	-	5.14	5.00	-
5	-	-	-	-	-	-	-	5.56	-	-	-	4.88
6	-	-	5.34	5.72	-	-	-	-	5.46	-	-	-
7	5.20	-	-	-	5.66	5.71	5.83	-	-	5.10	-	-
8	-	5.10	-	-	-	-	-	-	-	-	5.00	5.08
9	-	-	5.36	-	-	-	-	5.58	5.44	-	-	-
10	-	-	-	5.66	5.88	5.69	-	-	-	-	-	-
11	5.18	5.28	-	-	-	-	5.51	-	-	5.10	4.98	-
12	-	-	-	-	-	-	-	5.50	-	-	-	5.10
13	-	-	5.34	5.65	-	-	-	-	5.38	-	-	-
14	5.18	-	-	-	5.70	5.67	5.57	-	-	5.07	-	-
15	-	5.24	-	-	-	-	-	-	-	-	4.94	5.06
16	-	-	5.38	-	-	-	-	5.54	5.36	-	-	-
17	-	-	-	5.62	5.68	5.69	-	-	-	-	-	-
18	5.14	5.26	-	-	-	-	5.63	-	-	5.10	4.86	-
19	-	-	-	-	-	-	-	5.52	-	-	-	5.08
20	-	-	5.40	5.68	-	-	-	-	5.32	-	-	-
21	5.12	-	-	-	5.70	5.71	5.57	-	-	5.11	-	-
22	-	5.28	-	-	-	-	-	-	-	-	4.80	5.28
23	-	-	5.40	-	-	-	-	5.44	5.30	-	-	-
24	-	-	-	5.70	5.72	5.67	-	-	-	-	-	-
25	5.10	5.28	-	-	-	-	5.63	-	-	5.09	4.84	-
26	-	-	-	-	-	-	-	5.42	-	-	-	5.48
27	-	-	5.42	5.68	-	-	-	-	5.24	-	-	-
28	5.06	-	-	-	5.74	5.69	5.59	-	-	5.00	-	-
29	-	5.26	-	-	-	-	-	-	-	-	4.86	5.50
30	-	-	5.38	-	-	-	-	5.50	-	-	-	-
31	-	-	-	5.70	-	5.71	-	-	-	-	-	-

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

Boot Lake near Townsend, Wis.

Location.- Staff gage, lat. 45°15', long. 88°39', in sec. 9, T. 32 N., R. 15 E., on narrow neck of land cut by a small channel extending across north end of lake, 5½ miles southwest of Townsend.

Drainage area.- 1.5 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 97.46 feet May 31; minimum, 95.86 feet feet Aug. 27.
1936-41: Maximum elevation observed, that of May 31, 1941; minimum, 94.69 feet Oct. 31, Nov. 7, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	-	-	-	-	-
2							-	-	-	-	96.05	-
3							-	-	-	-	-	96.35
4							-	96.40	96.44	-	-	-
5							-	-	-	96.17	-	-
6							-	-	-	-	95.98	96.47
7							-	-	96.40	-	-	-
8							-	-	-	-	-	-
9							-	-	-	96.14	95.94	-
10							-	96.41	-	-	-	96.45
11							-	-	96.34	-	-	-
12							-	-	-	96.14	-	-
13							-	-	-	-	95.95	96.42
14							-	-	96.34	-	-	-
15							-	96.42	96.34	-	-	-
16							-	-	-	96.14	95.91	96.70
17							-	96.43	-	-	-	96.69
18							-	-	-	-	95.90	-
19							-	-	-	96.09	-	-
20							-	-	-	-	95.90	96.66
21							-	96.38	96.33	-	-	-
22							-	-	-	-	-	-
23							96.47	-	-	96.06	95.87	-
24							-	96.34	-	-	-	96.65
25							-	-	96.33	-	-	-
26							-	-	-	96.05	-	-
27							-	-	-	-	95.86	96.62
28							-	97.45	96.28	-	-	-
29							-	-	-	-	-	-
30							-	-	-	96.05	96.11	-
31							-	97.46	-	-	96.34	-

Fox River at Berlin, Wis.

Location.- Staff gage, lat. 43°57'05", long. 88°57'30", in sec. 16, T. 17 N., R. 13 E., at Government lock and dam at Berlin, 2½ miles upstream from Barnes Creek.

Drainage area.- 1,430 square miles.

Records available.- January 1898 to September 1941.

Average discharge.- 43 years, 1,119 second-feet.

Extremes.- Maximum daily discharge during year, 3,540 second-feet Apr. 3-6; minimum daily, 467 second-feet Aug. 28, 29, Aug. 31 to Sept. 3.
1898-1941: Maximum daily discharge, 6,620 second-feet Mar. 21, 23, 1929; minimum daily, 250 second-feet Feb. 1-4, 1900.

Remarks.- Records good except thoee for winter period, which are fair.

Cooperation.- Records collected and prepared in cooperation with Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	920	1,040	1,280	2,150	1,000	710	3,460	2,170	1,130	676	562	467
2	920	1,080	1,260	2,280	1,000	700	3,460	2,050	1,130	676	536	467
3	882	1,130	1,260	2,280	980	720	3,540	1,930	1,130	646	536	467
4	882	1,130	1,250	2,020	980	740	3,540	1,870	1,130	646	536	536
5	882	1,130	1,240	1,710	980	720	3,540	1,750	1,080	646	512	589
6	920	1,130	1,230	1,600	980	740	3,540	1,690	1,040	617	512	617
7	892	1,130	1,230	1,600	1,010	740	3,460	1,630	1,000	617	512	617
8	882	1,130	1,230	1,600	1,030	730	3,380	1,580	1,000	617	489	617
9	882	1,130	1,230	1,610	990	720	3,300	1,530	920	589	512	676
10	882	1,230	1,230	1,610	960	*710	3,230	1,480	845	617	512	882
11	845	1,330	1,220	1,610	960	740	3,090	1,430	845	617	476	920
12	845	1,430	1,220	1,610	1,010	770	3,020	1,380	920	589	489	920
13	845	1,480	1,220	1,560	1,010	800	2,880	1,280	1,000	562	489	882
14	920	1,530	1,180	1,510	1,050	820	2,810	1,230	1,040	562	512	845
15	882	1,530	1,140	1,460	1,090	840	2,740	1,180	1,040	562	536	845
16	920	1,530	1,140	1,410	1,090	840	2,600	1,180	1,040	589	562	845
17	960	1,530	1,180	1,360	1,050	820	2,600	1,130	1,040	589	536	809
18	920	1,530	1,180	1,360	1,010	780	2,670	1,080	1,000	627	536	774
19	960	1,430	1,220	1,260	960	850	2,810	1,080	1,000	617	536	740
20	920	1,380	1,220	1,180	920	850	3,020	1,040	960	617	512	707
21	920	1,380	1,260	1,140	880	890	3,020	1,000	920	589	512	676
22	920	1,430	1,300	1,180	840	930	3,090	960	882	589	512	676
23	920	1,480	1,350	1,100	790	1,040	3,100	920	882	589	512	660
24	920	1,480	1,400	1,100	750	1,180	2,950	882	676	562	512	646
25	882	1,480	1,450	1,060	750	1,320	2,810	882	676	562	489	707
26	862	1,480	1,610	1,060	740	1,550	2,670	836	676	562	489	740
27	882	1,430	1,710	1,020	730	1,830	2,600	882	646	562	489	707
28	445	1,230	1,950	980	720	2,270	2,470	845	676	536	467	676
29	862	1,130	2,080	980	-	2,740	2,350	882	646	536	467	646
30	1,000	1,280	2,150	980	-	3,160	2,290	920	676	589	489	707
31	1,000	-	2,150	980	-	3,400	-	1,130	-	589	467	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	28,014	1,000	845	904	0.632	0.73
November	39,760	1,530	1,040	1,325	.927	1.03
December	42,770	2,150	1,140	1,380	.965	1.11
Calendar year 1940	451,311	4,720	347	1,233	.862	11.72
January	44,360	2,280	980	1,431	1.00	1.15
February	26,260	1,090	720	938	.656	.68
March	35,650	3,400	700	1,150	.804	.93
April	90,040	3,540	2,290	3,001	2.10	2.34
May	39,829	2,170	836	1,285	.899	1.04
June	27,646	1,130	646	922	.645	.72
July	18,543	676	536	598	.418	.48
August	15,808	562	467	510	.357	.41
September	21,063	920	467	702	.491	.55
Water year 1940-41	429,743	3,540	467	1,177	.823	11.17

e Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 13, 15-18, Nov. 30 to Mar. 31.

Lake Winnebago at Oshkosh, Wis.

Location.- Staff gage, lat. 44°00'40", long. 88°32'00", in sec. 24, T. 18 N., R. 17 E., in mouth of upper Fox River at Chicago & Northwestern Railroad bridge, 0.2 mile downstream from Main Street bridge in Oshkosh and 18 miles up the lake from Menasha Dam and outlet. Datum of gage, 745.05 feet above mean sea level (levels by Corps of Engineers, U. S. Army). Prior to 1882, lake levels were referred to Deuchman gage at lake outlet at Menasha Dam, lat. 44°12'00", long. 88°26'50". Datum of Deuchman gage, which is still in existence, is 745.00 feet above mean sea level.

Drainage area.- 6,030 square miles at lake outlet at Menasha Dam.

Records available.- October 1938 to September 1941. Records from 1857 to 1938 in files of Corps of Engineers, U. S. Army. A report on Fox River by the Corps of Engineers, U. S. Army, is published as House Document No. 146, 67th Congress, 2nd Session.

Extremes.- Maximum gage height observed during year, 3.50 feet Apr. 19; minimum observed, 1.02 feet Mar. 18, 19.
1857-1941: Maximum gage height observed, 5.33 feet (Deuchman gage) Nov. 8, 1881; minimum observed, -2.00 feet (Deuchman gage) Nov. 28, 1891.

Remarks.- Lake elevations controlled by dams at Menasha and Neenah which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 feet. Present limits of regulation are from 21½ inches above the crest of Menasha Dam down to the crest during the navigation season, plus an additional 18 to 24 inches below the crest during winter. The Oshkosh staff gage gives true level of the lake while Deuchman gage readings are affected by loss of head in the channel between the lake and dam. Gage read once daily.

Cooperation.- Gage-height record furnished by Corps of Engineers. U. S. Army.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.54	2.50	3.00	3.00	2.08	1.25	1.35	2.98	3.10	2.83	2.08	2.00
2	2.54	2.48	2.98	3.08	2.04	1.23	1.46	2.98	3.08	2.81	2.17	2.04
3	2.52	2.50	2.98	3.12	2.00	1.25	1.56	2.94	3.10	2.75	2.08	2.06
4	2.54	2.50	2.94	3.10	1.97	1.23	1.65	2.92	3.10	2.71	2.10	2.25
5	2.46	2.54	2.92	3.00	1.92	1.21	1.77	2.92	3.08	2.69	2.13	2.12
6	2.48	2.56	2.92	3.00	1.88	1.19	1.94	2.96	3.06	2.67	2.08	2.10
7	2.52	2.54	2.90	3.00	1.86	1.19	2.08	3.02	3.06	2.67	2.06	2.12
8	2.54	2.54	2.90	3.00	1.83	1.17	2.23	3.10	3.04	2.56	2.02	2.27
9	2.50	2.56	2.90	2.96	1.79	1.15	2.35	3.03	3.08	2.50	2.08	2.35
10	2.50	2.65	2.92	2.92	1.75	1.13	2.46	3.04	3.04	2.48	2.04	2.33
11	2.52	2.77	2.88	2.88	1.75	1.13	2.58	3.02	3.00	2.58	2.19	2.44
12	2.50	2.19	2.83	2.83	1.69	1.13	2.67	2.96	2.94	2.44	2.08	2.42
13	2.50	2.65	2.85	2.79	1.64	1.08	2.79	2.98	2.90	2.42	2.04	2.46
14	2.56	2.62	2.83	2.75	1.62	1.08	2.88	2.92	2.92	2.40	2.02	2.48
15	2.56	2.65	2.88	2.71	1.58	1.08	2.83	3.02	2.94	2.35	2.00	2.48
16	2.50	2.56	2.85	2.67	1.56	1.15	3.00	3.08	2.96	2.46	2.06	2.50
17	2.48	2.65	2.88	2.62	1.58	1.08	2.98	3.04	2.98	2.44	2.06	2.50
18	2.48	2.71	2.85	2.58	1.54	1.02	3.08	3.04	2.94	2.38	2.04	2.56
19	2.46	2.75	2.85	2.54	1.50	1.02	3.50	3.02	2.92	2.40	2.06	2.54
20	2.46	2.73	2.83	2.52	1.48	1.08	3.08	3.02	2.90	2.35	2.04	2.58
21	2.50	2.77	2.83	2.50	1.46	1.08	3.08	3.06	2.90	2.31	2.02	2.58
22	2.48	2.75	2.83	2.46	1.44	1.08	3.15	3.00	2.88	2.27	2.08	2.58
23	2.46	2.83	2.81	2.42	1.40	1.08	3.15	3.00	2.90	2.25	2.04	2.60
24	2.50	2.90	2.83	2.40	1.35	1.08	3.15	3.00	2.92	2.27	2.04	2.62
25	2.50	2.94	2.85	2.35	1.33	1.12	3.08	2.98	2.88	2.25	2.04	2.65
26	2.50	2.98	2.90	2.31	1.28	1.15	3.04	2.92	2.83	2.23	2.06	2.75
27	2.52	2.92	2.90	2.25	1.27	1.15	3.00	2.90	2.81	2.21	2.04	2.69
28	2.56	2.92	2.92	2.25	1.25	1.17	3.00	2.92	2.83	2.31	2.00	2.67
29	2.54	2.98	2.94	2.21	-	1.19	2.98	3.06	2.81	2.25	1.98	2.71
30	2.46	3.00	2.96	2.17	-	1.23	1.94	3.06	2.92	2.31	1.98	2.85
31	2.50	-	2.98	2.15	-	1.27	-	3.08	-	2.17	1.94	-

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

Location.- Lat. 44°19', long. 88°12', in sec. 4, T. 21 N., R. 19 E., at Rapide Croche Dam, 2 miles upstream from Wrightstown.

Drainage area.- 6,150 square miles.

Records available.- March 1896 to September 1941.

Average discharge.- 45 years, 4,282 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 16,600 second-feet Apr. 20; minimum daily, 1,160 second-feet Sept. 1.
1918-41: Maximum daily discharge, 20,600 second-feet Apr. 4, 1929; minimum daily, 138 second-feet Aug. 2, 1936.

Remarks.- Records good. Flow regulated by Lake Winnebago (see p. 40). Occasional discharge measurements made by Geological Survey.

Cooperation.- Daily discharge computed from power-house records by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,360	2,900	4,080	4,460	6,120	4,200	3,480	7,820	6,540	3,140	2,070	1,160
2	2,830	2,700	4,440	4,680	5,560	3,330	3,360	8,300	5,910	2,940	2,080	1,710
3	2,710	2,510	4,160	4,300	6,140	3,860	3,250	8,470	6,220	2,230	1,990	1,460
4	2,510	2,920	4,370	5,120	6,050	4,100	3,220	5,470	6,000	2,630	1,840	2,200
5	2,890	3,120	4,600	8,300	6,040	4,300	3,480	5,340	6,070	2,510	2,050	2,680
6	2,080	2,750	4,320	7,630	5,910	3,300	3,350	5,500	6,100	2,770	1,790	2,190
7	2,350	2,920	4,130	7,530	5,860	3,350	3,820	3,810	6,200	3,220	1,950	1,850
8	2,500	2,930	4,100	7,490	5,580	3,460	3,900	3,820	5,570	3,180	1,880	2,720
9	2,950	2,970	3,690	7,900	5,300	3,150	3,830	3,480	5,320	3,370	1,800	2,470
10	2,650	2,460	4,150	7,750	5,950	3,410	3,980	3,850	5,480	3,300	1,680	2,560
11	2,710	4,130	4,350	7,460	5,690	3,540	4,410	3,780	5,530	3,100	2,290	2,550
12	2,980	4,780	4,220	6,980	5,660	3,630	4,050	3,810	5,370	2,850	1,560	2,770
13	3,020	3,140	4,080	6,960	5,610	3,520	4,450	3,800	5,330	2,680	1,390	2,820
14	2,830	2,870	4,150	6,980	5,780	3,620	5,740	4,200	4,440	2,850	1,900	2,680
15	2,900	3,050	3,630	6,900	5,490	3,540	7,080	4,180	4,310	3,070	1,700	2,600
16	2,910	3,020	4,350	7,030	5,080	3,200	7,190	3,860	4,370	2,980	1,520	2,810
17	2,960	2,110	4,440	7,100	5,030	2,920	7,320	3,730	4,470	2,980	1,650	2,780
18	3,120	3,060	4,370	6,820	4,610	3,680	8,850	3,840	4,320	3,100	1,520	2,700
19	2,980	3,200	4,290	6,800	5,180	3,940	10,400	3,760	3,540	2,800	1,530	2,750
20	1,850	3,220	4,270	6,900	4,800	3,490	16,600	3,830	3,920	2,840	1,790	2,910
21	2,630	3,540	4,040	6,890	4,370	3,580	12,100	3,890	3,580	2,710	1,730	2,700
22	3,090	3,660	4,010	6,890	4,060	3,760	13,800	3,860	3,620	2,730	1,580	2,520
23	2,970	3,620	3,990	6,750	3,900	3,630	14,400	3,720	3,260	2,870	1,610	2,660
24	2,970	3,090	2,860	6,670	4,440	3,900	13,700	3,720	3,500	2,640	1,610	2,900
25	2,870	3,390	4,510	6,620	4,290	4,150	13,900	3,760	3,670	2,720	1,740	2,750
26	2,810	3,610	5,500	5,740	4,300	4,120	14,000	3,720	3,640	2,700	1,450	2,610
27	1,990	3,730	4,720	6,470	4,220	3,890	14,300	3,370	3,640	2,480	1,460	3,290
28	2,640	4,070	4,440	6,510	4,170	3,720	12,700	3,870	3,110	2,560	1,810	2,800
29	3,060	4,540	4,250	6,010	-	3,470	12,800	3,680	3,190	2,740	1,700	2,580
30	2,920	4,560	4,100	6,100	-	3,170	11,900	3,510	3,220	2,380	1,440	3,260
31	2,870	-	4,160	6,190	-	3,390	-	5,140	-	1,920	1,330	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	84,910	3,120	1,850	2,739	0.445	0.51
November	98,570	4,780	2,110	3,286	.534	.60
December	130,770	5,500	2,860	4,218	.686	.79
Calendar year 1940	1,451,590	17,500	1,470	3,966	.645	8.78
January	205,930	8,300	4,300	6,643	1.08	1.24
February	145,190	6,140	3,900	5,185	.843	.88
March	112,320	4,300	2,920	3,623	.589	.68
April	245,360	16,600	3,220	8,179	1.33	1.48
May	136,890	8,470	3,370	4,416	.718	.83
June	139,440	6,540	3,110	4,648	.756	.84
July	86,990	3,370	1,920	2,806	.456	.53
August	53,440	2,290	1,330	1,724	.280	.32
September	76,440	3,290	1,160	2,548	.414	.46
Water year 1940-41	1,516,250	16,600	1,160	4,154	.675	9.16

Silver Lake at Portage, Wis.

Location.- Staff gage, lat. 43°33', long. 89°29', in sec. 6, T. 12 N., R. 9 E., at ice hoist of C. Smith and Son, at southeast end of lake.

Drainage area.- 1 square mile.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 92.90 feet Apr. 19; minimum, 91.47 feet Oct. 5.
1936-41: Maximum elevation observed, 93.00 feet Sept. 20, 24, 1938; minimum observed, 90.85 feet Aug. 22, 24, 1937.

Remarks.- Gage heights have been reduced to datum for this lake assumed by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
Oct. 5	6.47	Dec. 28	7.05	May 2	7.62	July 26	7.27
12	6.48	Jan. 5	7.20	10	7.58	Aug. 2	7.17
18	6.55	12	7.10	17	7.61	8	7.07
26	6.50	Feb. 2	7.27	24	7.51	16	6.97
Nov. 2	6.60	23	7.32	31	7.60	23	6.97
9	6.62	Mar. 22	7.52	June 7	7.52	30	6.90
15	6.60	29	7.62	14	7.67	Sept. 5	6.92
21	6.70	Apr. 5	7.81	21	7.57	11	6.97
30	6.88	12	7.77	28	7.47	20	7.12
Dec. 7	6.88	19	7.90	July 4	7.39	27	7.29
14	6.88	20	7.81	12	7.32		
21	7.00	26	7.67	19	7.32		

Note.- Add 85 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

Little Green Lake near Markesan, Wis.

Location.- Staff gage, lat. 43°44', long. 88°58', in sec. 32, T. 15 N., R. 13 E., within 50 feet of lake outlet and 1¼ miles north of Markesan.

Drainage area.- 5 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 95.52 feet Apr. 24; minimum observed, 94.50 feet Aug. 31, Sept. 1-3, 6, 7.
1936-41: Maximum elevation observed, 96.74 feet June 23, 24, 1940; minimum observed, 94.28 feet Sept. 10, 11, 1936.

Remarks.- Gage heights have been referred to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.36	5.30					-	5.46	5.30	5.18	4.90	4.50
2	5.36	5.30					-	5.44	5.30	5.16	4.88	4.50
3	5.34	5.30					-	5.44	5.28	5.14	4.86	4.50
4	5.34	5.30					-	5.44	-	5.12	4.86	4.52
5	5.34	5.28					-	5.44	-	5.10	4.84	4.52
6	5.32	5.28					-	5.46	-	5.08	4.82	4.50
7	5.32	5.28					-	5.44	-	5.06	4.80	4.50
8	5.32	5.28					-	-	-	5.04	4.80	4.62
9	5.32	5.28					-	5.42	-	5.02	4.78	4.66
10	5.30	-					-	5.42	-	5.00	4.78	4.66
11	5.30	-					-	5.40	5.28	4.98	4.76	4.66
12	5.32	-					-	5.40	5.28	4.96	4.74	4.66
13	5.32	-					-	5.38	5.28	4.94	4.72	4.64
14	5.36	-					-	5.38	5.28	4.92	4.70	4.64
15	5.34	-					-	5.42	5.26	4.90	4.68	4.64
16	5.34	-					-	5.40	5.26	4.90	4.66	4.62
17	-	-					-	5.40	-	4.94	4.66	4.62
18	5.32	-					-	5.38	-	4.92	4.64	4.62
19	5.32	-					-	5.38	-	4.90	4.64	4.60
20	5.32	-					-	5.36	-	4.90	4.62	4.60
21	5.30	-					-	5.36	-	4.90	4.62	4.60
22	5.28	-					-	5.34	5.20	4.88	4.62	4.58
23	5.28	-					-	5.34	5.20	4.86	4.60	4.68
24	5.28	-					5.52	5.34	5.20	4.86	4.60	4.66
25	5.28	-					5.50	5.34	5.18	4.86	4.58	-
26	5.28	-					5.50	5.32	5.18	4.86	4.58	4.66
27	5.28	-					5.49	5.32	5.16	4.84	4.58	4.66
28	5.28	-					5.48	5.30	5.16	4.84	4.56	4.64
29	5.32	-					5.47	5.30	5.16	4.84	4.54	4.62
30	5.32	-					5.46	5.30	5.20	4.88	4.52	4.66
31	5.30	-					-	5.30	-	4.90	4.50	-

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

Wolf River above West Branch of Wolf River, Wis.

Location.- Chain gage, lat. 44°55', long. 88°39', in E½ sec. 3, T. 28 N., R. 15 E., half a mile upstream from West Branch of Wolf River and 4 miles north of Keshena. Datum of gage is 856.57 feet above mean sea level (levels by Wisconsin Power & Light Co.).

Drainage area.- 633 square miles.

Records available.- March 1928 to September 1941.

Average discharge.- 13 years, 551 second-feet.

Extremes.- Maximum discharge observed during year, 2,260 second-feet Apr. 15, 16 (gage height, 5.60 feet), from rating curve extended above 1,500 second-feet; minimum observed, 306 second-feet Aug. 6-9.

1928-41: Maximum discharge observed, 2,580 second-feet Apr. 8, 1929 (gage height, 6.10 feet), from rating curve extended above 1,500 second-feet; minimum observed, 199 second-feet Feb. 20, 1936.

Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.8	333	2.9	748	4.5	1,600
2.0	396	3.2	889	5.0	1,890
2.3	500	3.6	1,090	5.6	2,260
2.6	619	4.0	1,310		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a430	619	530	660	472	430	630	748	889	380	363	2,140
2	430	619	510	640	470	420	700	748	794	348	333	1,830
3	430	619	480	600	470	410	800	748	704	348	333	1,540
4	413	578	440	500	470	410	880	704	661	333	320	1,770
5	430	578	460	450	465	405	990	661	661	333	320	1,830
6	430	619	560	470	465	405	1,100	704	619	333	306	1,660
7	430	578	650	490	465	405	1,150	704	619	333	306	1,480
8	430	578	660	520	*460	405	1,200	704	578	333	306	1,310
9	430	578	660	*540	465	410	1,250	661	538	333	306	1,370
10	413	661	660	540	470	420	1,310	661	538	348	333	1,200
11	430	841	645	540	480	430	1,310	619	464	413	380	1,090
12	413	1,040	630	540	485	*440	1,310	619	578	380	380	988
13	413	661	610	540	490	440	1,310	578	578	363	363	938
14	464	748	580	530	495	450	1,660	578	578	348	363	889
15	500	794	570	530	500	450	2,260	748	538	396	363	889
16	538	794	560	530	500	440	2,260	794	500	363	348	1,420
17	500	841	560	520	500	430	1,950	748	464	363	333	1,600
18	500	748	570	520	495	415	1,770	704	464	a388	333	1,480
19	464	748	600	510	490	410	1,600	619	430	413	320	1,310
20	464	748	630	470	480	410	1,540	619	430	380	348	1,200
21	464	704	660	500	480	410	1,480	578	413	363	348	1,090
22	464	794	660	500	475	410	1,370	a558	396	363	363	1,090
23	464	794	660	500	470	415	1,310	538	413	348	a356	1,040
24	464	794	650	490	465	425	1,250	500	396	333	348	988
25	430	748	640	490	460	435	1,200	500	380	333	363	988
26	430	619	640	480	455	445	1,150	500	380	333	430	938
27	430	600	660	480	450	460	1,090	578	396	320	430	889
28	500	580	660	475	440	475	1,040	748	396	320	413	841
29	578	570	650	475	-	500	889	889	396	348	396	794
30	578	550	640	475	-	530	794	889	380	363	988	841
31	578	-	650	475	-	570	-	938	-	363	1,890	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,332	578	413	462	0.730	0.84
November	20,743	1,040	550	691	1.09	1.22
December	18,735	660	440	604	.954	1.10
Calendar year 1940	232,718	1,540	320	636	1.00	13.69
January	15,980	660	450	515	.814	.94
February	13,282	500	440	474	.749	.78
March	13,510	570	405	436	.689	.79
April	38,553	2,260	630	1,285	2.03	2.26
May	20,885	938	500	674	1.06	1.22
June	15,571	889	380	519	.820	.91
July	11,016	413	320	355	.561	.65
August	13,082	1,890	306	422	.667	.77
September	37,433	2,140	794	1,248	1.97	2.20
Water year 1940-41	233,122	2,260	306	639	1.01	13.68

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 27 to Apr. 6.

Wolf River at Keshena Falls, Wis.

Location.- Water-stage recorder, lat. 44°53', long. 88°39', in E½ sec. 22, T. 28 N., R. 15 E., 500 feet downstream from Keshena Falls, 1½ miles upstream from Keshena, and 2½ miles downstream from West Branch of Wolf River.

Drainage area.- 812 square miles.

Records available.- March 1928 to September 1941. May 1907 to March 1909 and February 1911 to March 1928 at site at Keshena, 1½ miles downstream.

Average discharge.- 31 years (1907-8, 1911-41), 784 second-feet.

Extremes.- Maximum discharge during year, 3,400 second-feet Sept. 1 (gage height, 8.50 feet), from rating curve extended above 2,100 second-feet; minimum, 340 second-feet Aug. 20 (gage height, 5.25 feet).

1907-9, 1911-41: Maximum discharge observed, 4,390 second-feet Apr. 10, 1922, from rating curve extended above 2,100 second-feet; minimum discharge, 91 second-feet Dec. 22, 1939 (gage height, 4.67 feet), flow retarded temporarily by formation of ice above station.

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

5.4	419	6.4	1,160	7.5	2,250
5.7	600	6.8	1,530	8.0	2,800
6.0	823	7.2	1,930	8.5	3,400

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	568	761	690	850	610	570	830	969	1,340	499	505	3,340
2	554	839	670	840	610	560	920	985	1,190	475	493	2,860
3	535	839	630	790	610	550	1,050	977	994	458	469	2,200
4	535	792	560	680	610	540	1,170	928	936	458	453	2,200
5	529	745	540	540	610	530	1,350	879	871	469	430	2,580
6	561	761	660	580	610	530	1,480	887	823	469	425	2,640
7	568	745	820	610	610	530	*1,480	960	823	475	403	2,140
8	548	708	850	650	610	530	1,530	944	792	458	403	1,680
9	542	722	850	*680	620	540	1,630	895	745	436	403	1,780
10	529	871	840	690	*630	550	1,680	855	700	458	441	1,630
11	548	1,110	830	690	640	560	1,680	815	656	517	529	1,430
12	548	1,480	810	690	640	*570	1,680	784	715	548	535	1,300
13	554	850	770	690	650	580	1,730	761	831	517	517	1,210
14	614	960	740	690	650	590	2,080	745	823	487	487	1,160
15	656	1,020	720	690	650	590	2,920	936	815	481	493	1,160
16	700	1,030	700	680	660	590	3,100	1,160	715	517	493	1,530
17	649	1,060	700	670	660	570	2,690	1,070	663	511	487	2,250
18	628	960	710	660	660	560	2,300	960	635	493	464	2,250
19	614	960	750	640	650	550	2,080	855	614	529	458	1,780
20	621	940	800	610	640	540	1,980	784	587	535	469	1,530
21	614	900	820	630	630	540	1,880	776	554	511	499	1,430
22	580	1,000	830	640	630	540	1,730	745	561	487	475	1,380
23	580	1,000	840	650	630	550	1,630	700	554	469	487	1,300
24	561	1,000	830	640	630	560	1,530	678	523	458	493	1,230
25	561	952	820	640	620	570	1,480	663	517	436	481	1,250
26	561	823	830	630	610	590	1,430	670	505	441	535	1,250
27	587	780	840	630	600	610	1,380	768	505	458	561	1,200
28	580	740	840	620	580	620	1,300	969	523	453	529	1,130
29	614	720	840	620	-	650	1,160	1,430	548	436	505	1,070
30	753	710	830	620	-	700	1,020	1,480	542	487	1,000	1,090
31	776	-	830	610	-	760	-	1,430	-	493	2,300	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18,368	776	529	593	0.730	0.84
November	26,778	1,480	708	893	1.10	1.23
December	23,790	850	540	767	.945	1.09
Calendar year 1940	299,876	2,200	420	819	1.01	13.74
January	20,550	850	540	663	.817	.94
February	17,560	660	580	627	.772	.80
March	17,820	760	530	575	.708	.82
April	49,900	3,100	830	1,663	2.05	2.29
May	28,458	1,480	663	918	1.13	1.30
June	21,600	1,340	505	720	.887	.99
July	14,919	548	436	481	.592	.68
August	17,222	2,300	403	556	.685	.79
September	50,980	3,340	1,070	1,699	2.09	2.33
Water year 1940-41	307,945	3,340	403	844	1.04	14.10

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 13-24, Nov. 27 to Apr. 5.

Wolf River at New London, Wis.

Location.- Staff gage, lat. 44°23', long. 88°44', in sec. 12, T. 22 N., R. 14 E., at right bank, about 15 feet downstream from Pearl Street bridge and three-quarters of a mile downstream from Embarrass River. Datum of gage is 749.37 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 2,240 square miles.
Records available.- October 1913 to September 1941.
Average discharge.- 28 years, 1,802 second-feet.
Extremes.- Maximum discharge observed during year, 7,140 second-feet Apr. 6-8 (gage height, 8.6 feet); minimum observed, 664 second-feet Aug. 8 (gage height, 0.6 foot).
1913-41: Maximum discharge observed, 15,500 second-feet Apr. 13, 1922 (gage height, 11.4 feet), from rating curve extended above 10,000 second-feet; minimum observed, 261 second-feet Sept. 6, 1933.
Maximum stage known, 11.6 feet Apr. 16, 1888, reported by Corps of Engineers, U. S. Army.
Remarks.- Records good except those for periods of ice effect, which are fair. Gage read once daily.
Cooperation.- Gage-height record furnished by Corps of Engineers, U. S. Army.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 1				Apr. 2 to Sept. 30					
1.7	1,070	3.5	1,950	0.6	664	2.0	1,190	6.0	3,730
2.0	1,190	4.0	2,230	.6	735	2.5	1,420	6.5	4,160
2.5	1,420	5.0	2,830	1.0	808	3.0	1,660	7.0	4,650
3.0	1,680			1.2	882	4.0	2,280	7.5	5,250
				1.5	995	5.0	2,980	8.0	5,970

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,280	1,570	2,150	2,150	1,170	1,000	3,700	3,980	3,350	1,110	735	995
2	1,230	1,680	2,000	2,200	1,160	1,000	5,380	3,730	3,650	1,110	808	1,520
3	1,190	1,730	1,930	2,150	1,150	1,000	6,140	3,570	3,890	1,070	808	1,790
4	1,150	1,730	1,850	2,150	1,140	1,000	6,710	3,350	4,250	1,030	771	2,090
5	1,110	1,840	1,800	2,100	1,140	1,010	6,920	3,200	4,440	957	808	2,350
6	1,110	1,780	1,740	2,050	1,140	1,030	7,140	2,910	4,440	919	808	2,620
7	1,110	1,680	1,710	*1,960	1,130	1,050	7,140	2,760	4,440	882	735	2,620
8	1,070	1,570	1,700	1,860	1,120	1,050	7,140	2,620	4,250	808	664	2,910
9	1,070	1,470	1,680	1,760	1,100	1,040	6,710	2,480	4,160	845	699	3,130
10	1,070	1,570	1,660	1,660	*1,080	1,030	6,320	2,280	3,650	919	699	3,350
11	1,070	1,680	1,650	1,570	1,050	*1,000	5,970	2,150	3,200	919	699	3,420
12	1,070	1,770	1,650	1,500	1,050	1,000	5,660	1,970	2,830	919	845	3,500
13	1,070	1,800	1,630	1,480	1,080	1,020	5,520	1,910	2,480	882	919	3,570
14	1,030	1,880	1,610	1,400	1,120	1,050	5,380	1,790	2,280	882	1,070	3,500
15	1,070	2,000	1,600	1,380	1,150	1,080	5,250	1,730	2,350	919	1,070	3,420
16	1,030	2,200	1,560	1,340	1,150	1,110	5,120	1,850	2,420	919	1,070	3,350
17	1,030	2,400	1,510	1,310	1,150	1,150	5,120	1,970	2,350	919	995	3,200
18	1,070	2,550	1,480	1,280	1,140	1,060	5,250	2,150	2,160	919	957	3,130
19	1,330	2,700	1,450	1,250	1,120	1,060	5,660	2,280	1,910	919	919	3,130
20	1,330	2,800	1,440	1,220	1,100	1,080	6,320	2,280	1,680	882	845	3,050
21	1,280	2,900	1,450	1,200	1,080	1,100	6,710	2,150	1,470	882	845	3,050
22	1,230	2,900	1,460	1,190	1,060	1,150	6,710	2,030	1,330	882	882	3,050
23	1,230	2,900	1,470	1,180	1,040	1,200	6,320	1,790	1,280	882	845	3,050
24	1,150	2,900	1,500	1,170	1,030	1,250	6,140	1,570	1,190	919	845	3,130
25	1,110	2,900	1,550	1,160	1,020	1,310	5,810	1,470	1,110	882	845	3,130
26	1,070	2,900	1,630	1,150	1,000	1,400	5,520	1,470	1,110	845	919	3,050
27	1,070	2,830	1,730	1,160	1,000	1,520	5,120	1,280	1,030	808	845	3,050
28	1,070	2,770	1,820	1,170	1,000	1,700	4,760	1,280	1,030	771	808	2,980
29	1,150	2,500	1,920	1,170	-	1,950	4,540	1,470	1,030	735	808	2,910
30	1,280	2,300	2,000	1,170	-	2,250	4,250	2,090	1,070	735	808	2,830
31	1,330	-	2,090	1,170	-	2,800	-	2,910	-	771	845	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	35,460	1,330	1,030	1,144	0.511	0.59
November	66,200	2,900	1,470	2,207	.985	1.10
December	52,410	2,150	1,440	1,691	.755	.87
Calendar year 1940	654,705	4,880	640	1,789	.799	10.86
January	46,640	2,200	1,150	1,505	.672	.77
February	30,670	1,170	1,000	1,095	.489	.51
March	38,450	2,800	1,000	1,240	.554	.64
April	174,430	7,140	3,700	5,814	2.60	2.90
May	70,470	3,980	1,280	2,273	1.01	1.16
June	75,820	4,440	1,030	2,527	1.13	1.26
July	27,841	1,110	735	898	.401	.46
August	26,219	1,070	664	846	.378	.44
September	86,875	3,570	995	2,896	1.29	1.44
Water year 1940-41	731,485	7,140	664	2,004	.895	12.14

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 11-20, Nov. 29 to Apr. 1.

Embarrass River near Embarrass, Wis.

Location.- Water-stage recorder, lat. 44°43', long. 88°44', on line between sec. 13, T. 26 N., R. 14 E., and sec. 18, T. 26 N., R. 15 E., three-quarters of a mile downstream from Mill Creek and 4 miles northwest of Embarrass.

Drainage area.- 395 square miles.

Records available.- June 1919 to September 1941.

Average discharge.- 22 years, 295 second-feet.

Extremes.- Maximum discharge during year, 2,030 second-feet May 31 (gage height, 6.38 feet); minimum, 73 second-feet July 9 (gage height, 2.68 feet).
1919-41: Maximum discharge observed, 6,760 second-feet Apr. 10, 1922 (gage height, 11.5 feet), from rating curve extended above 2,800 second-feet; minimum observed, 23 second-feet Aug. 3, 6, 7, 1931.

Remarks.- Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation caused by power plants above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	338	240	243	180	170	664	338	1,090	143	122	924
2	154	366	200	236	183	165	975	347	1,360	140	138	1,080
3	154	380	230	200	167	180	1,200	306	924	130	236	1,060
4	157	370	180	170	167	180	1,140	320	639	114	173	818
5	143	324	210	160	185	180	1,060	306	506	114	120	689
6	135	285	200	180	210	150	1,000	302	356	102	110	792
7	160	243	210	205	180	150	1,000	320	324	114	107	844
8	188	268	170	*219	*179	160	1,060	356	280	107	100	740
9	122	263	170	200	200	170	1,060	320	259	107	95	664
10	130	215	220	205	200	150	1,000	289	240	120	90	540
11	149	240	205	210	190	155	950	263	210	114	135	496
12	157	280	215	220	220	*151	870	236	236	140	320	423
13	130	310	210	200	190	160	792	213	334	196	394	334
14	140	320	160	220	170	180	844	213	399	166	228	306
15	192	330	180	190	190	130	1,060	285	418	132	154	276
16	216	325	150	150	185	170	1,110	501	342	117	188	418
17	240	290	170	220	195	185	1,030	589	263	114	202	1,030
18	210	340	155	230	205	175	924	462	232	120	138	1,410
19	185	290	150	200	215	180	897	329	213	124	110	1,200
20	179	325	150	240	250	185	897	302	173	135	132	870
21	196	360	160	210	170	185	844	276	151	124	140	639
22	154	400	190	180	175	140	714	213	146	117	154	a450
23	140	410	170	210	170	150	664	213	157	132	124	a360
24	157	410	230	190	175	200	535	179	143	110	176	338
25	157	400	210	220	185	196	476	170	140	114	135	361
26	154	375	210	180	180	179	428	163	140	96	143	385
27	135	324	250	170	200	202	428	154	127	95	122	380
28	149	263	230	170	150	263	404	466	122	114	114	342
29	220	230	285	175	-	306	389	1,260	146	130	104	302
30	240	150	276	200	-	347	356	1,680	138	120	130	285
31	259	-	268	180	-	452	-	1,890	-	138	486	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,272	259	122	170	0.430	0.50
November	9,424	410	150	314	.795	.89
December	6,254	285	150	202	.511	.59
Calendar year 1940	103,478	2,170	70	283	.716	9.74
January	6,183	243	150	199	.504	.58
February	5,266	250	150	188	.476	.50
March	5,946	452	130	192	.486	.56
April	24,771	1,200	356	826	2.09	2.33
May	13,261	1,890	154	428	1.08	1.24
June	10,998	1,890	122	367	.929	1.04
July	3,838	196	95	124	.314	.36
August	5,120	486	90	165	.418	.48
September	18,756	1,410	276	625	1.58	1.76
Water year 1940-41	115,089	1,890	90	315	.797	10.85

Peak discharge.- Apr. 15 (9 p.m.) 1,170 sec.-ft.; May 31 (11 p.m.) 2,030 sec.-ft.; Sept. 18 (9 a.m.) 1,610 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of record for Eau Claire River at Kelly and weather records.
Note.- Stage-discharge relation affected by ice Nov. 10-25, Nov. 29 to Dec. 28, Jan. 3 to Mar. 24.

Little Wolf River at Royalton, Wis.

Location.- Water-stage recorder, lat. 44°24', long. 88°51', in sec. 1, T. 22 N., R. 13 E., 4 miles upstream from mouth.

Drainage area.- 485 square miles.

Records available.- January 1914 to September 1941.

Average discharge.- 27 years, 433 second-feet.

Extremes.- Maximum discharge during year, 2,390 second-feet Apr. 3 (gage height, 4.04 feet); maximum gage height, 6.55 feet Apr. 2, affected by ice; minimum, 119 second-feet July 27, Aug. 12.

1914-41: Maximum discharge observed, 5,780 second-feet Apr. 10, 11, 1922 (gage height, 6.92 feet), from rating curve extended above 3,500 second-feet; maximum gage height, 10.33 feet Mar. 25, 1939 (affected by ice); minimum discharge, 57 second-feet Feb. 10, 1934 (stage-discharge relation affected by ice).

Remarks.- Open-water records Oct. 1 to Apr. 22 are good; winter records and record for period when stage-discharge relation was affected by bridge construction, Apr. 23 to Sept. 30, are fair. Diurnal fluctuation caused by power plant 6 miles above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	248	410	320	521	290	220	1,500	444	1,640	458	156	332
2	254	410	360	379	200	230	2,000	373	1,680	300	159	410
3	266	373	330	347	250	190	2,130	366	1,370	235	156	276
4	210	410	270	300	260	185	1,830	354	964	195	165	366
5	286	332	300	260	260	185	1,460	332	626	189	156	360
6	223	322	335	310	245	190	1,330	327	385	166	162	280
7	276	327	335	*350	*307	205	1,290	397	316	187	154	300
8	266	294	335	340	320	220	1,250	472	266	189	141	300
9	258	305	355	330	220	210	1,250	423	276	181	159	205
10	251	416	320	330	280	260	1,130	360	316	170	165	391
11	229	521	260	320	300	*239	1,010	258	305	198	248	360
12	245	450	350	290	320	260	935	281	347	a215	322	322
13	226	410	310	305	320	260	885	278	507	a245	265	281
14	294	520	270	310	320	210	857	272	647	271	306	239
15	294	600	250	280	360	260	836	404	640	198	257	256
16	302	640	350	280	320	240	913	479	479	192	197	242
17	280	472	290	305	345	205	892	458	391	179	216	281
18	286	465	250	310	280	230	1,090	444	332	202	232	430
19	287	385	230	250	285	230	1,130	332	242	213	204	423
20	216	451	250	270	295	230	1,250	254	248	193	186	397
21	242	410	310	280	260	235	1,130	348	218	201	186	350
22	271	521	290	275	260	260	978	375	172	179	196	305
23	263	647	330	270	210	235	773	281	216	187	246	243
24	224	535	350	270	270	285	647	269	192	185	242	250
25	224	493	390	250	230	260	563	206	186	194	236	293
26	260	493	400	265	250	300	521	262	170	213	205	a325
27	207	397	440	260	260	340	444	236	154	171	168	a350
28	223	300	535	260	260	380	472	288	173	185	148	a235
29	298	260	528	245	-	500	521	801	179	178	141	a300
30	354	350	535	265	-	660	486	1,050	458	180	138	a260
31	338	-	486	280	-	1,000	-	1,600	-	170	183	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,101	354	207	261	0.538	0.62
November	12,919	647	260	431	.889	.99
December	10,664	535	230	344	.709	.82
Calendar year 1940	140,276	2,440	160	383	.790	10.75
January	9,307	521	245	300	.619	.71
February	7,777	360	200	278	.573	.60
March	8,914	1,000	185	288	.594	.68
April	31,503	2,130	444	1,050	2.16	2.41
May	13,024	1,600	206	420	.866	1.00
June	14,095	1,680	154	470	.969	1.08
July	6,419	458	166	207	.427	.49
August	6,095	322	138	197	.406	.47
September	9,362	430	205	312	.643	.72
Water year 1940-41	138,180	2,130	138	379	.781	10.59

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of recorded range of stage, weather records, and record of generation at Manawa power plant.

Note.- Stage-discharge relation affected by ice Nov. 12-16, Nov. 28 to Dec. 27, Jan. 4 to Apr. 2.

Waupaca River near Waupaca, Wis.

Location.- Water-stage recorder, lat. 44°21', long. 88°59', near north line of sec. 1, T. 21 N., R. 12 E., at highway bridge 1½ miles downstream from Crystal River and 4 miles downstream from Waupaca.

Drainage area.- 305 square miles.

Records available.- October 1917 to September 1941. June 1916 to October 1917 at site 1 mile downstream.

Average discharge.- 25 years, 251 second-feet.

Extremes.- Maximum discharge during year, 665 second-feet Apr. 3 (gage height, 2.92 feet); minimum, 98 second-feet July 22 (gage height, 1.07 feet).
1916-41: Maximum discharge observed, 2,600 second-feet Mar. 17, 1919 (gage height, 5.6 feet), from rating curve extended above 1,000 second-feet; minimum observed, 35 second-feet Jan. 22, 28, 1926 (stage-discharge relation affected by ice).

Remarks.- Records good except those for periods of ice effect, which are fair. Considerable diurnal fluctuation caused by power plants above station.

Rating table, water year 1940-41, (gage height, in feet, and discharge, in second-feet)

1.3	139	2.0	344
1.4	161	2.2	415
1.6	215	2.5	523
1.8	277	2.8	630

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	251	303	205	277	215	210	541	306	469	249	236	204
2	242	310	190	270	220	215	630	304	397	228	226	214
3	236	310	150	220	240	220	648	311	333	212	212	217
4	236	310	200	150	245	220	577	299	324	204	209	284
5	207	300	300	160	245	225	501	279	276	200	212	342
6	248	294	320	210	*250	225	451	273	266	192	195	316
7	243	287	290	250	250	230	451	301	255	204	200	276
8	247	277	270	*253	200	235	418	290	249	205	197	272
9	243	274	260	255	195	240	389	278	236	184	197	299
10	235	287	250	250	195	*275	362	255	221	180	200	308
11	231	327	240	240	200	240	347	232	235	204	249	283
12	232	393	230	235	220	230	360	234	280	206	245	251
13	226	437	220	230	230	225	373	231	306	215	223	224
14	268	473	210	225	230	220	372	233	301	205	215	242
15	261	480	200	225	230	215	379	290	283	201	240	250
16	267	372	200	220	225	210	362	317	268	199	237	232
17	244	303	205	220	210	150	383	284	244	206	222	246
18	252	307	220	210	140	210	498	261	232	212	222	251
19	251	307	240	135	180	220	559	260	225	208	215	239
20	221	307	250	180	185	225	523	243	217	209	204	225
21	248	307	270	200	190	230	476	233	214	214	220	222
22	236	334	290	205	190	230	415	227	207	195	222	218
23	236	344	305	205	195	230	337	227	227	219	209	212
24	239	337	310	205	190	235	297	216	207	223	202	212
25	239	324	320	205	190	237	292	214	205	206	222	240
26	233	313	325	210	180	245	281	222	206	197	191	248
27	224	307	330	210	170	250	289	194	202	192	202	237
28	212	280	335	210	180	324	306	221	194	212	200	222
29	248	200	334	210	-	337	307	380	209	203	196	229
30	294	170	324	210	-	372	309	513	250	245	194	242
31	303	-	290	215	-	462	-	530	-	238	201	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,533	303	207	243	0.797	0.92
November	9,574	480	170	319	1.05	1.17
December	8,083	335	150	261	.856	.99
Calendar year 1940	100,292	1,500	150	274	.898	12.23
January	6,700	277	135	216	.708	.82
February	5,790	250	140	207	.679	.71
March	7,622	462	150	246	.807	.93
April	12,433	648	281	414	1.36	1.52
May	8,658	530	194	279	.915	1.05
June	7,738	469	194	258	.846	.94
July	6,467	249	180	209	.685	.79
August	6,615	249	191	213	.698	.80
September	7,457	342	*204	249	.816	.91
Water year 1940-41	94,670	648	135	259	.849	11.55

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 28, Jan. 2 to Mar. 24.

West Branch of Fond du Lac River at Fond du Lac, Wis.

Location.- Water-stage recorder, lat. 43°45'45", long. 88°29'00", on line between secs. 17 and 20, T. 15 N., R. 17 E., at concrete bridge on County Trunk Highway T, three-quarters of a mile west of Fond du Lac and 2⅔ miles upstream from confluence with East Branch of Fond du Lac River. Datum of gage is 766.78 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 88 square miles.

Records available.- March 1939 to September 1941.

Extremes.- Maximum discharge during year, 1,000 second-feet Mar. 27 (gage height, 5.29 feet); no flow July 12-17, July 19 to Sept. 7, Sept. 13-24, 26-29.
1939-41: Maximum discharge, 1,000 second-feet June 22, 1940 and Mar. 27, 1941; no flow on many days.

Remarks.- Records good except those below 1 second-foot and those for periods of ice effect or no gage-height record, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	7.6	6	20	5	2	260	42	12	2.3		0
2	1.9	8.6	6	33	5	3	242	35	15	.8		0
3	1.9	8.1	6	60	*6	25	218	31	12	.6		0
4	1.2	8.1	6	100	6	20	192	26	10	.6		0
5	.6	8.6	6	80	6	12	170	21	8.1	.4		0
6	1.2	9.0	7	*76	6	5	148	21	5.0	.3		0
7	1.5	9.0	9	72	6	*3	134	20	4.1	.2		0
8	1.5	9.0	11	68	5	3	121	19	4.1	.2		.2
9	1.2	9.5	12	62	5	5	108	18	6.3	.1		.2
10	1.2	10	12	45	5	5	98	14	4.5	.1		.2
11	1.5	a20	13	35	5	6	87	14	4.1	.1		.2
12	1.2	a15	13	28	5	10	78	12	3.8	0		.1
13	.8	a12	13	22	10	5	87	12	3.4	0		0
14	7.6	a10	13	17	50	4	84	12	6.8	0		0
15	a8.1	a9	14	12	30	5	74	13	7.6	0		0
16	6.3	a9	15	9	20	6	78	10	7.6	0		0
17	5.8	a10	20	8	12	3	91	7.6	9.0	0		0
18	5.0	10	25	7	9	2	134	6.3	8.6	.1		0
19	4.5	*10	21	6	8	2	109	4.5	7.2	0		0
20	a4.5	12	*19	5	8	3	166	4.5	7.6	a0		0
21	a4.5	16	18	5	7	15	147	4.1	8.1	a0		0
22	4.5	20	18	4	7	100	134	3.0	7.6	0		0
23	4.5	18	19	4	6	150	134	1.9	6.3	0		0
24	4.1	18	30	4	6	220	115	.8	5.8	0		0
25	4.1	17	42	4	5	414	98	.6	5.0	0		.1
26	3.4	20	50	4	4	614	84	.6	5.0	0		0
27	3.0	13	52	4	3	*777	73	.6	3.8	0		0
28	3.4	10	40	4	3	614	64	2.6	2.3	0		0
29	5.0	9	30	4	-	352	56	6.3	1.9	0		0
30	6.3	7	23	4	-	320	47	10	3.8	0		.1
31	6.3	-	20	4	-	280	-	11	-	0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	108.5	8.1	0.6	3.50	0.040	0.05
November	352.5	20	7	11.8	.134	.15
December	589	52	6	19.0	.216	.25
Calendar year 1940	8,372.5	517	0	22.9	.260	3.53
January	810	100	4	26.1	.297	.34
February	253	50	3	9.0	.102	.11
March	3,985	777	2	129	1.47	1.70
April	3,631	260	47	121	1.38	1.54
May	384.4	42	.6	12.4	.141	.16
June	196.4	15	1.9	6.55	.074	.08
July	5.8	2.3	0	.19	.0022	.003
August	0	0	0	0	0	0
September	1.1	.2	0	.04	.00045	.0005
Water year 1940-41	10,316.7	777	0	28.3	.322.	4.38

Peak discharge.- Mar. 27 (2:30 p.m.) 1,000 sec.-ft.; Apr. 20 (2:30 a.m.) 183 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of recorded range of stage, weather records, and records for East Branch of Fond du Lac River at Fond du Lac and Cedar Creek near Cedarburg.
Note.- Stage-discharge relation affected by ice Nov. 28 to Mar. 24, Mar. 30 to Apr. 1.

East Branch of Fond du Lac River at Fond du Lac, Wis.

Location.- Water-stage recorder, lat. 43°45'15", long. 88°27'10", in sec. 22, T. 15 N., R. 17 E., at steel bridge on town road, an eighth of a mile west of U. S. Highway 41, half a mile south of Fond du Lac, and 2⅛ miles upstream from confluence with West Branch of Fond du Lac River. Datum of gage is 762.82 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 75 square miles.

Records available.- March 1939 to September 1941. May to July 1903 (gage heights only), at site about 2 miles downstream.

Extremes.- Maximum discharge during year, 1,090 second-feet Mar. 23 (gage height, 4.46 feet); minimum, 1.6 second-feet Sept. 1.
1939-41: Maximum discharge, 2,140 second-feet June 23, 1940 (gage height, 5.87 feet); no flow Jan. 17-29, 1940.

Remarks.- Records good except those for periods of no gage-height record or ice effect, which are poor.

Rating table, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

0.9	1.8	1.6	74	3.0	500
1.0	3.1	1.8	122	3.5	682
1.1	5.8	2.0	177	4.0	878
1.2	11	2.3	268		
1.4	34	2.6	365		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	6.8	5	20	4	5	163	20	9.4	5.0	3.4	1.7
2	3.9	7.4	5	35	5	7	127	18	8.9	3.6	2.8	1.7
3	3.9	8.4	5	60	*6	9	114	16	8.9	2.8	2.8	2.1
4	3.9	7.9	5	100	6	15	92	14	8.9	2.6	2.7	3.1
5	3.4	6.8	6	70	6	18	81	13	8.4	2.4	2.7	6.3
6	4.2	6.8	6	*52	6	18	72	13	7.4	2.2	2.7	4.4
7	5.3	6.3	7	46	6	*18	72	16	6.3	2.2	2.7	2.3
8	5.3	6.3	8	43	5	19	70	15	5.8	2.2	2.6	6.8
9	4.7	6.3	9	41	4	25	63	14	5.5	2.2	2.6	15
10	4.4	6.8	10	38	4	27	56	12	5.5	2.4	2.7	8.9
11	4.4	a30	10	35	4	40	50	11	5.8	2.8	2.6	5.3
12	4.2	a25	10	25	5	35	47	11	6.3	2.7	2.4	3.4
13	3.9	a15	10	18	8	24	128	10	6.8	2.2	2.3	2.7
14	a13	a12	10	14	30	20	197	9.4	8.9	2.2	2.6	2.4
15	a15	a10	12	10	22	24	107	16	8.4	2.1	3.0	2.2
16	11	a10	17	8	20	25	100	20	7.4	2.4	2.8	2.1
17	6.8	a9.0	25	7	18	24	163	15	6.8	2.4	2.4	2.1
18	5.8	8.4	30	6	16	18	247	11	7.4	2.8	2.6	2.1
19	5.3	*8.9	27	5	12	9	169	10	7.4	3.0	2.3	1.9
20	a5.3	11	*24	5	9	7	242	10	6.8	a2.9	2.3	1.9
21	a5.3	16	23	4	e	150	149	9.4	6.3	2.8	2.4	2.1
22	5.3	21	23	4	8	606	100	8.9	5.3	2.7	2.8	2.3
23	5.0	21	24	4	8	878	81	8.9	5.3	2.6	2.6	2.1
24	4.7	17	25	4	7	878	61	7.4	4.7	2.7	2.3	2.1
25	4.7	14	30	4	7	640	48	6.8	4.2	2.7	2.1	2.8
26	4.7	9.4	49	4	6	500	43	6.3	3.6	2.7	1.9	2.8
27	4.7	7	49	4	5	380	36	6.3	3.1	2.8	2.1	2.7
28	4.4	6	30	4	5	300	31	8.4	3.0	2.8	2.1	2.6
29	5.0	6	25	4	-	260	26	8.9	2.8	3.4	1.9	2.4
30	6.3	5	21	4	-	255	24	8.9	5.3	5.8	1.9	5.5
31	6.8	-	20	4	-	239	-	9.4	-	5.0	1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	174.5	15	3.4	5.63	0.075	0.09
November	331.5	30	5	11.0	.147	.16
December	560	49	5	18.1	.241	.28
Calendar year 1940	9,063.1	1,680	0	24.8	.331	4.49
January	682	100	4	22.0	.293	.34
February	250	30	4	8.93	.119	.12
March	5,473	878	5	177	2.36	2.72
April	2,959	247	24	98.6	1.31	1.46
May	364.0	20	6.3	11.7	.156	.18
June	190.6	9.4	2.8	6.35	.085	.09
July	89.1	5.8	2.1	2.87	.038	.04
August	76.9	3.4	1.8	2.48	.033	.04
September	105.8	15	1.7	3.53	.047	.05
Water year 1940-41	11,256.4	878	1.7	30.8	.411	5.57

Peak discharge.- Mar. 23 (9 p.m.) 1,090 sec.-ft.; Apr. 18 (5 p.m.) 290 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of recorded range of stage, weather records, and records for West Branch of Fond du Lac River at Fond du Lac and Cedar Creek near Cedarburg.
Note.- Stage-discharge relation affected by ice Nov. 27 to Mar. 21, Mar. 25-29.

Lake de Neveu near Fond du Lac, Wis.

Location.- Staff gage, lat. 43°44', long. 88°24', in sec. 30, T. 15 N., R. 18 E., at boat house at north end of lake on farm of Nick Giebel, 4 miles southeast of Fond du Lac.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 97.65 feet Apr. 19; minimum observed, 97.16 feet Aug. 30, Sept. 2.
1936-41: Maximum elevation observed, 98.20 feet Sept. 18, 1938; minimum observed, 96.90 feet Aug. 15, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
Oct. 1	7.34	Jan. 4	7.55	Apr. 5	7.57	July 5	7.32
5	7.32	7	7.51	8	7.57	8	7.28
8	7.42	11	7.49	12	7.57	12	7.24
12	7.40	14	7.45	15	7.63	15	7.22
15	7.50	18	7.43	19	7.65	19	7.26
19	7.48	21	7.45	23	7.61	22	7.26
22	7.56	25	7.49	24	7.59	26	7.24
26	7.48	28	7.49	26	7.64	29	7.24
29	7.50	Feb. 1	7.49	29	7.58	Aug. 2	7.28
Nov. 2	7.56	4	7.49	May 4	7.54	5	7.26
5	7.54	8	7.49	6	7.50	9	7.24
9	7.50	11	7.49	10	7.46	12	7.22
12	7.50	15	7.53	13	7.42	16	7.20
16	7.48	18	7.53	17	7.46	19	7.18
19	7.46	22	7.53	20	7.44	23	7.18
23	7.50	25	7.52	24	7.44	26	7.18
26	7.48	Mar. 1	7.53	27	7.42	30	7.16
30	7.50	4	7.53	31	7.48	Sept. 2	7.16
Dec. 3	7.52	8	7.53	June 3	7.44	6	7.28
7	7.54	11	7.53	7	7.42	9	7.56
10	7.52	15	7.53	10	7.40	13	7.56
14	7.50	18	7.53	14	7.42	16	7.48
17	7.56	22	7.54	17	7.42	20	7.40
21	7.56	25	7.54	21	7.40	23	7.36
24	7.56	29	7.54	24	7.36	27	7.40
28	7.60	31	7.54	28	7.32	29	7.48
31	7.58	Apr. 1	7.55	July 1	7.34		

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

Cedar Lake near Kiel, Wis.

Location.- Staff gage, lat. 43°55', long. 87°56', in sec. 24, T. 17 N., R. 21 E., at Cedar Lake Resort on narrows of lake, 5 miles east of Kiel.

Drainage area.- 3 square miles.

Records available.- August 1936 to September 1941 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.94 feet Apr. 19; minimum observed, 96.10 feet Aug. 16, 23, 30.
1936-41: Maximum elevation observed, 96.94 feet Apr. 19, 1941; minimum observed, 94.95 feet Aug. 14, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1940 to September 1941

Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
Oct. 5	6.20	Jan. 11	6.40	Apr. 19	6.94	July 19	6.40
12	6.20	18	6.40	24	6.91	26	6.30
19	6.14	25	6.44	26	6.91	Aug. 2	6.20
26	6.14	Feb. 1	6.44	May 3	6.90	9	6.20
Nov. 2	6.14	8	6.44	10	6.90	16	6.10
9	6.14	15	6.44	17	6.90	23	6.10
16	6.20	22	6.44	24	6.70	30	6.10
23	6.20	Mar. 1	6.44	31	6.72	Sept. 6	6.45
30	6.20	8	6.44	June 7	6.72	13	6.45
Dec. 7	6.20	15	6.44	14	6.60	20	6.45
14	6.20	22	6.44	21	6.60	27	6.45
21	6.20	29	6.44	28	6.50		
28	6.20	Apr. 5	6.68	July 5	6.50		
Jan. 4	6.40	12	6.78	12	6.50		

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

Milwaukee River at Milwaukee, Wis.

Location.- Water-stage recorder, lat. 43°06'00", long. 87°54'30", in NE¼ sec. 5, T. 7 N., R. 22 E., on left bank of river near north limits of Milwaukee, 2,000 feet downstream from Port Washington Road bridge, and 6 miles upstream from mouth. Datum of gage is 607.3 feet above mean sea level.

Drainage area.- 661 square miles.

Records available.- April 1914 to September 1941.

Average discharge.- 27 years, 408 second-feet.

Extremes.- Maximum discharge during year, 2,500 second-feet (regulated) Mar. 27 (gage height, 4.85 feet); minimum, 2 second-feet (regulated) July 5; minimum daily, 4 second-feet July 8.

1914-41: Maximum discharge, 15,100 second-feet Mar. 20, 1918 (gage height, 9.00 feet, datum then in use, from floodmark); minimum, 1.4 second-feet (regulated) Sept. 12, 1939.

Revisions.- The minimum daily discharge for the water-year 1940 has been revised to 26 second-feet July 28, 1940, and the minimum to 2 second-feet July 11, 1940 (gage height, 1.48 feet), superseding figures published in Water-Supply Paper 894.

Remarks.- Records good except those for periods of no gage-height record and period of ice effect, which are poor. Occasional regulation caused by operation of gates at dams above.

Revisions.- Revised figures of discharge for the water year 1940 are given herein. They supersede those published in Water-Supply Paper 894.

Discharge, in second-feet, 1939-41
1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	111	74	47	60	60	2,670	329	395	706	82	361
2	47	101	84	43	61	61	2,340	349	309	574	86	361
3	36	153	92	37	62	64	*2,100	448	255	448	113	344
4	66	149	130	48	55	67	1,490	520	200	355	116	324
5	66	84	120	45	45	70	1,240	482	215	314	260	243
6	50	69	82	34	58	90	940	448	174	264	239	181
7	64	108	108	37	70	100	769	421	160	251	231	181
8	46	76	104	40	56	105	742	372	259	185	138	166
9	46	84	82	34	52	105	854	372	366	200	117	166
10	52	111	69	37	55	100	805	304	349	167	110	166
11	54	92	*95	44	60	90	727	304	295	54	120	140
12	58	82	108	52	50	86	733	264	268	92	83	141
13	64	84	82	57	62	86	630	207	295	128	72	81
14	58	108	66	54	70	86	574	196	259	102	167	132
15	44	84	87	50	65	95	461	239	204	108	109	142
16	40	92	69	*46	63	110	441	200	166	142	104	83
17	58	84	64	40	73	130	361	185	139	113	86	a80
18	56	104	82	41	64	160	401	196	152	83	126	a90
19	54	66	104	43	61	190	390	227	453	120	a150	101
20	60	74	74	45	76	200	434	324	475	83	a180	101
21	69	92	62	50	75	200	390	395	366	98	a130	80
22	56	66	64	47	65	150	372	535	3,390	162	a120	89
23	66	76	64	45	62	145	324	638	5,460	95	a100	72
24	92	98	52	50	45	140	286	498	6,330	92	a60	104
25	153	79	48	56	55	140	281	378	5,090	83	a130	120
26	134	79	52	58	56	150	264	324	3,470	89	a600	113
27	291	82	58	52	*60	160	231	334	2,360	83	a740	98
28	213	84	40	52	61	170	219	526	1,770	26	a800	89
29	186	69	38	40	62	350	243	742	1,365	45	400	86
30	156	101	34	50	-	680	227	647	1,030	48	482	107
31	194	-	43	58	-	1,260	-	482	-	80	313	-

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Cedar Creek near Cedarburg.

Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 6 and Jan. 13 to Mar. 30.

Discharge, in second-feet, of Milwaukee River at Milwaukee, Wis., 1939-41--Continued

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	142	107	441	157	177	1,420	303	122	28	36	27
2	83	132	103	1,150	158	190	1,240	238	108	52	38	26
3	83	149	100	900	156	450	1,050	224	108	33	33	42
4	89	149	102	670	152	430	1,000	206	102	38	28	42
5	83	129	110	580	150	400	1,030	220	105	10	34	40
6	107	123	120	540	146	*370	956	188	83	8	36	33
7	80	132	150	490	142	350	911	220	86	9	33	50
8	95	136	175	400	137	325	815	220	64	4	47	357
9	95	140	200	310	130	310	740	206	70	8	38	412
10	107	160	225	270	150	280	653	224	108	180	31	308
11	95	195	230	250	166	280	608	180	96	52	38	364
12	101	220	230	230	180	300	558	206	83	38	42	282
13	77	250	220	210	280	350	543	143	96	31	36	155
14	107	210	215	203	330	430	653	180	89	27	36	133
15	126	150	220	195	270	450	748	238	89	63	51	102
16	132	135	250	190	250	400	748	412	102	52	46	96
17	139	135	300	185	230	350	807	449	108	46	34	118
18	166	150	350	180	190	290	911	462	86	59	27	223
19	136	180	*378	178	150	250	983	352	95	48	45	101
20	104	200	372	174	140	230	1,030	243	83	50	40	104
21	116	210	361	170	130	335	1,020	267	62	72	34	50
22	116	220	384	168	155	475	1,120	202	62	75	33	30
23	104	210	448	165	180	832	929	188	102	59	46	9
24	110	180	421	163	190	1,250	716	184	86	59	36	41
25	98	145	482	161	210	1,390	608	176	64	64	28	171
26	104	125	681	159	190	1,130	482	129	46	46	49	155
27	101	145	843	158	170	1,220	449	143	54	50	40	105
28	113	135	900	157	175	1,320	599	115	62	36	36	72
29	132	126	715	156	-	1,340	347	163	60	40	34	80
30	123	113	566	156	-	1,350	298	122	34	54	31	202
31	132	-	490	*155	-	1,480	-	92	-	42	33	-

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 3 to Mar. 20. No gage-height record Nov. 8 to Dec. 18; discharge computed on basis of weather records and records for Cedar Creek near Cedarburg and Fox River at Wilmot.

Monthly discharge, in second-feet, 1939-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1939	2,673	291	36	86.2	0.130	0.15
November	2,742	153	66	91.4	.138	.15
December	2,331	130	34	75.2	.114	.13
Calendar year 1939	108,181	2,180	17	296	.448	6.09
January 1940	1,432	58	34	46.2	.070	.08
February	1,759	76	45	60.7	.092	.10
March	5,600	1,260	60	181	.274	.32
April	21,969	2,670	219	732	1.11	1.24
May	11,888	742	185	383	.579	.67
June	36,019	6,330	139	1,200	1.82	2.03
July	5,390	706	26	174	.263	.30
August	6,563	800	60	212	.321	.37
September	4,542	361	72	151	.228	.25
Water year 1939-40	102,908	6,330	26	281	.425	5.79
October 1940	3,358	166	77	108	.163	.19
November	4,825	250	113	161	.244	.27
December	10,448	900	100	337	.510	.59
Calendar year 1940	113,793	6,330	26	311	.470	6.41
January 1941	9,514	1,150	155	307	.464	.53
February	5,064	330	130	181	.274	.29
March	18,734	1,480	177	604	.914	1.05
April	23,772	1,420	298	792	1.20	1.34
May	6,895	462	92	222	.336	.39
June	2,505	122	34	83.5	.126	.14
July	1,433	180	4	46.2	.070	.08
August	1,149	51	27	37.1	.056	.06
September	3,930	412	9	131	.198	.22
Water year 1940-41	91,627	1,480	4	251	.380	5.15

Cedar Creek near Cedarburg, Wis.

Location.- Chain gage, lat. 43°19'25", long. 87°58'50", on line between secs. 14 and 23, T. 10 N., R. 21 E., at bridge on State Trunk Highway, 2 miles north of Cedarburg and 6 miles upstream from mouth.

Drainage area.- 113 square miles.

Records available.- August 1930 to September 1941.

Average discharge.- 11 years, 54.0 second-feet.

Extremes.- Maximum discharge during year, 350 second-feet Mar. 24 (gage height, 8.78 feet, affected by ice); minimum observed, 2.1 second-feet Sept. 1 (gage height, 5.00 feet).
1930-41: Maximum discharge, 3,180 second-feet by discharge measurement June 23, 1940; maximum gage height, 12.00 feet Feb. 7, 1938 (affected by ice); minimum discharge observed, 0.2 second-foot Aug. 9-12, 1936.

Remarks.- Records good except those for below 10 second-feet and those for periods of ice effect or no gage-height record, which are fair. Gage read once daily.

Rating table, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

5.0	2.1	5.8	94
5.2	8.2	6.0	152
5.4	19	6.5	310
5.6	44		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	23	18	83	*32	36	195	44	23	8.2	5.2	2.1
2	13	25	17	130	32	39	188	41	23	6.7	4.4	2.6
3	12	25	17	200	33	80	170	38	18	5.9	3.9	3.9
4	13	23	17	250	32	100	140	35	15	5.2	4.4	3.9
5	11	21	16	140	31	84	176	32	14	5.2	3.9	3.9
6	14	19	20	120	29	78	182	35	13	4.4	3.5	3.9
7	17	19	25	110	27	*76	176	41	13	4.4	3.0	3.0
8	17	19	30	74	25	70	152	35	13	3.9	2.6	13
9	17	19	34	58	22	62	146	35	13	3.9	2.6	27
10	15	23	38	48	27	59	128	35	14	3.9	2.6	32
11	15	27	39	45	38	58	122	27	17	4.4	4.4	19
12	14	41	37	41	35	64	111	27	18	5.2	3.9	17
13	14	63	36	39	50	70	140	25	19	5.2	3.9	13
14	21	40	36	37	100	76	170	25	19	4.4	3.9	12
15	41	27	37	36	80	80	152	68	18	4.4	4.4	10
16	41	25	44	35	74	68	140	89	17	5.2	4.4	8.2
17	35	25	64	40	66	62	176	170	17	5.9	4.4	8.2
18	25	27	88	40	50	56	230	146	14	5.2	3.9	7.4
19	23	35	96	39	38	50	214	73	12	5.2	3.9	5.7
20	19	41	*88	38	34	46	208	54	10	7.4	3.5	6.7
21	17	41	90	37	30	60	170	38	9.2	5.2	3.5	6.7
22	17	44	100	37	28	90	128	38	8.2	4.4	3.5	5.9
23	17	44	115	37	27	250	111	38	9.2	4.4	3.0	5.2
24	17	38	130	36	40	350	89	35	9.2	4.4	3.0	5.2
26	15	32	150	35	45	310	78	25	9.2	3.5	3.0	11
26	15	25	230	33	41	270	68	23	7.4	3.5	3.0	9.2
27	15	23	230	30	39	220	89	23	3.9	3.5	2.6	10
28	15	22	115	29	36	210	58	23	3.9	3.0	2.6	a8.0
29	19	20	98	29	-	220	54	23	6.7	3.0	2.6	a10
30	23	19	86	30	-	230	49	21	9.2	3.9	3.0	a25
31	21	-	82	31	-	220	-	23	-	3.9	2.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	581	41	11	18.7	0.165	0.19
November	875	63	19	29.2	.258	.29
December	2,225	230	17	71.8	.635	.73
Calendar year 1940	25,285.4	2,690	1	69.1	.612	8.31
January	1,967	250	29	63.5	.562	.65
February	1,139	100	22	40.7	.360	.37
March	3,744	350	36	121	1.07	1.23
April	4,210	230	49	140	1.24	1.38
May	1,385	170	21	44.7	.396	.46
June	393.1	23	3.9	13.1	.116	.13
July	146.9	8.2	3.0	4.74	.042	.05
August	109.1	5.2	2.6	3.52	.031	.04
September	299.7	32	2.1	9.99	.088	.10
Water year 1940-41	17,074.8	350	2.1	46.8	.414	5.62

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Milwaukee River at Milwaukee and weather records.
Note.- Stage-discharge relation affected by ice Nov. 14-18, Nov. 27 to Mar. 31.

Wolf Lake at Chicago, Ill.

Location.- Water-stage recorder, lat.41°40'00", long. 87°32'15", in SW¼ sec. 29, T. 37 N., R. 15 E., in Chicago, at outlet on west shore. Prior to April 6, staff gage at same location. Datum of gage is 580.45 feet (revised) above mean sea level, datum of 1929 (Cook County Highway bench mark).

Records available.- December 1939 to September 1941.

Extremes.- Maximum mean hourly gage height during year, 1.62 feet June 11; minimum mean hourly, 1.06 feet Apr. 20 (due to wind action).
1939-41: Maximum mean hourly gage height, that of June 11, 1941; minimum gage height observed, 0.76 foot Aug. 3, 1940.

Remarks.- Mean hourly figures used to determine extremes, in order to average out the effects of wind action.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.11	1.40	1.40	1.50	1.46	1.40	1.32	1.17	1.35	1.48	1.31	1.24
2	1.12	1.38	1.40	1.50	1.44	1.42	1.32	1.18	1.36	1.48	1.30	1.23
3	1.14	1.38	1.38	1.50	1.44	1.44	1.32	1.17	1.51	1.46	1.27	1.23
4	1.14	1.34	1.38	1.50	1.44	1.46	1.32	1.13	1.55	1.44	1.25	1.23
5	1.14	1.34	1.38	1.48	1.44	1.46	1.32	1.10	1.55	1.43	1.28	1.32
6	1.19	1.34	1.38	1.48	1.44	1.48	1.31	1.18	1.54	1.39	1.27	1.33
7	1.22	1.34	1.38	1.45	1.44	1.46	1.30	1.22	1.50	1.39	1.26	1.35
8	1.22	1.34	1.38	1.43	1.44	1.46	1.29	1.24	1.52	1.39	1.26	1.32
9	1.22	1.34	1.38	1.43	1.44	1.46	1.27	1.27	1.54	1.38	1.26	1.34
10	1.22	1.34	1.38	1.42	1.44	1.48	1.26	1.27	1.54	1.37	1.25	1.37
11	1.20	1.34	1.38	1.42	1.44	1.48	1.26	1.25	1.60	1.39	1.25	1.38
12	1.21	1.34	1.38	1.42	1.46	1.48	1.22	1.24	1.60	1.38	1.30	1.37
13	1.22	1.34	1.38	1.42	1.46	1.48	1.19	1.26	1.59	1.36	1.27	1.35
14	1.22	1.34	1.38	1.42	1.48	1.48	1.16	1.24	1.59	1.35	1.25	1.31
15	1.28	1.34	1.38	1.42	1.48	1.48	1.18	1.26	1.58	1.34	1.27	1.31
16	1.28	1.34	1.38	1.44	1.48	1.48	1.20	1.34	1.59	1.35	1.28	1.31
17	1.28	1.34	1.36	1.46	1.48	1.46	1.23	1.34	1.56	1.33	1.26	1.32
18	1.30	1.34	1.34	1.48	1.46	1.44	1.22	1.32	1.55	1.34	1.26	1.30
19	1.30	1.38	1.34	1.44	1.46	1.40	1.25	1.31	1.55	1.36	1.27	1.29
20	1.28	1.38	1.34	1.44	1.46	1.42	1.17	1.31	1.53	1.33	1.27	1.27
21	1.28	1.38	1.38	1.44	1.44	1.42	1.23	1.32	1.52	1.31	1.26	1.25
22	1.28	1.38	1.42	1.44	1.44	1.40	1.25	1.32	1.51	1.30	1.28	1.24
23	1.26	1.38	1.42	1.44	1.42	1.40	1.26	1.32	1.50	1.36	1.28	1.25
24	1.28	1.38	1.42	1.44	1.42	1.38	1.25	1.31	1.49	1.37	1.26	1.24
25	1.36	1.38	1.43	1.44	1.42	1.36	1.22	1.29	1.47	1.37	1.24	1.25
26	1.36	1.38	1.44	1.44	1.41	1.34	1.20	1.27	1.46	1.37	1.27	1.27
27	1.36	1.40	1.44	1.46	1.41	1.34	1.20	1.27	1.44	1.34	1.27	1.25
28	1.36	1.40	1.44	1.46	1.40	1.32	1.19	1.28	1.46	1.32	1.26	1.23
29	1.38	1.40	1.44	1.47	-	1.32	1.18	1.29	1.46	1.31	1.25	1.26
30	1.38	1.40	1.46	1.47	-	1.32	1.17	1.29	1.46	1.32	1.24	1.24
31	1.40	-	1.48	1.46	-	1.32	-	1.32	-	1.31	1.22	-

St. Joseph River at Mottville, Mich.

Location.- Float gage, lat. 41°48', long. 85°45', in NE¼ sec. 6, T. 8 S., R. 12 W., at hydroelectric plant of Michigan Gas & Electric Co. at Mottville, 5 miles downstream from Fawn River. Datum of gage is 759.5 feet above mean sea level (levels by Michigan Gas & Electric Co.).

Records available.- December 1923 to September 1941.

Average discharge.- 17 years, 1,356 second-feet.

Extremes (regulated).- Maximum discharge during year, 2,960 second-feet Apr. 24; maximum gage height, 1.93 feet July 8; minimum daily discharge, 122 second-feet Sept. 21. 1924-41: Maximum discharge, 8,250 second-feet Apr. 20, 1926 (gage height, 4.4 feet); minimum, 20 second-feet Sept. 7, 1930; minimum daily, 44 second-feet Oct. 17, 1937.

Remarks.- Records good. Flow regulated by power plant. Gage read hourly.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	808	869	696	1,850	1,030	1,170	1,670	1,540	453	760	439	491
2	921	748	1,170	2,060	1,300	758	1,770	1,560	981	727	353	406
3	878	772	984	2,070	1,480	1,580	1,550	1,510	877	765	252	435
4	903	1,000	938	2,220	1,200	1,690	1,550	1,200	1,050	461	500	430
5	722	862	937	1,970	1,450	1,870	1,750	1,330	1,120	592	445	398
6	1,230	958	988	1,680	1,230	2,060	1,880	1,220	1,200	467	366	329
7	916	883	1,040	1,810	1,500	2,060	1,910	1,480	1,020	846	356	263
8	967	910	757	2,010	1,370	2,220	1,740	1,460	796	738	390	418
9	1,020	931	1,390	1,960	426	2,110	1,990	1,400	1,050	752	261	426
10	946	525	1,280	1,750	1,620	1,950	1,690	1,500	1,140	640	174	427
11	897	1,260	1,390	1,880	1,260	1,920	1,670	1,110	972	556	398	437
12	890	978	1,560	1,620	1,110	1,730	1,620	1,440	986	450	431	438
13	393	1,120	1,820	1,890	1,200	1,770	1,360	1,460	988	333	422	390
14	1,140	843	1,570	1,710	1,500	1,880	1,380	1,250	1,120	544	415	288
15	1,080	842	1,320	1,360	1,300	1,740	1,460	1,250	748	569	382	506
16	1,100	875	2,000	1,600	1,220	1,530	1,560	1,380	1,080	519	355	436
17	926	609	1,840	1,760	1,680	1,530	1,720	1,580	1,010	609	157	418
18	994	1,090	1,920	1,770	1,590	1,600	1,630	1,120	1,090	554	396	410
19	848	1,160	1,990	1,220	1,280	1,560	1,810	1,280	1,090	426	378	348
20	718	1,100	2,020	1,890	1,260	1,610	2,130	1,340	1,080	329	375	212
21	914	893	1,930	1,570	1,320	1,780	2,460	1,120	890	657	369	122
22	842	880	1,900	1,710	1,520	1,580	2,560	1,060	743	620	390	346
23	869	1,150	1,980	1,860	1,160	1,380	2,790	1,150	998	523	246	339
24	845	707	1,990	1,820	1,600	1,720	2,780	970	875	514	210	330
25	844	1,100	1,800	1,680	1,400	1,980	2,540	739	944	501	712	349
26	705	1,210	1,900	1,420	1,360	1,570	2,340	1,060	813	415	356	343
27	441	993	1,970	1,810	1,220	1,750	2,150	974	801	269	402	210
28	877	994	1,770	1,640	1,060	1,680	1,880	883	589	545	387	228
29	823	1,070	1,710	1,430	-	1,670	1,900	788	335	502	351	370
30	822	1,350	1,890	1,650	-	1,250	1,640	595	740	507	253	367
31	849	-	1,910	1,390	-	1,590	-	727	-	514	206	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	27,131	1,230	393	875		
November	28,715	1,350	528	957		
December	48,360	2,020	696	1,560		
Calendar year 1940	476,423	2,960	151	1,302		
January	54,060	2,220	1,220	1,744		
February	36,446	1,680	426	1,302		
March	52,288	2,220	758	1,687		
April	57,130	2,790	1,360	1,904		
May	37,476	1,580	595	1,209		
June	27,579	1,200	335	919		
July	17,204	846	269	555		
August	11,187	712	157	361		
September	10,914	506	122	364		
Water year 1940-41	408,490	2,790	122	1,119		

St. Joseph River at Niles, Mich.

Location.- Water-stage recorder, lat. 41°49'45", long. 86°15'35", in sec. 26, T. 7 S., R. 17 W., at Niles, 1 mile upstream from Dowagiac Creek. Datum of gage is 634.98 feet above mean sea level (levels by city of Niles).

Drainage area.- 3,620 square miles.

Records available.- October 1930 to September 1941.

Extremes.- Maximum discharge during year, 5,610 second-feet about Apr. 25 (gage height, 5.15 feet); minimum, 275 second-feet (regulated) Sept. 8 (gage height, 1.59 feet).
1930-41: Maximum discharge, 13,300 second-feet Mar. 13, 1939 (gage height, 9.28 feet); minimum, 244 second-feet (regulated) Aug. 30, 1931.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Flow regulated by power plants upstream.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,510	1,600	2,040	2,740	2,520	2,380	2,600	2,900	1,470	1,600	691	464
2	1,600	1,520	1,810	3,300	2,220	3,080	3,100	2,700	1,720	1,600	558	616
3	1,490	1,520	1,620	3,060	2,310	2,850	2,800	2,390	1,650	1,700	704	905
4	1,570	1,720	1,670	3,410	2,360	3,280	3,100	2,160	2,420	1,300	984	838
5	1,610	1,840	1,410	3,050	2,260	3,110	2,600	2,850	1,990	900	1,200	783
6	1,500	1,540	1,930	2,450	2,150	3,200	3,000	2,080	1,780	1,150	966	902
7	1,830	1,430	1,860	2,720	2,320	2,990	3,200	2,490	1,730	820	959	486
8	1,890	1,560	1,780	2,400	2,160	3,000	3,000	2,660	1,420	1,200	916	662
9	1,870	1,590	2,070	3,240	2,060	2,960	3,200	2,420	1,860	1,600	894	874
10	1,960	1,390	*2,280	3,180	1,910	2,720	3,000	2,450	1,780	1,400	870	762
11	1,830	1,320	2,060	2,760	2,330	2,620	2,900	2,450	2,040	1,200	906	920
12	1,520	2,110	2,500	2,580	2,320	2,930	2,900	2,590	2,040	1,000	885	915
13	1,650	1,400	2,820	2,520	2,390	2,690	2,400	2,470	1,680	880	912	858
14	1,450	2,080	2,190	2,950	2,450	3,100	2,500	2,440	1,970	700	936	510
15	1,950	1,910	2,300	2,710	3,010	3,000	2,600	2,280	1,820	1,000	748	522
16	1,830	1,250	2,740	2,180	2,540	2,700	2,800	2,190	1,980	1,180	876	875
17	1,920	1,340	3,180	2,280	2,970	2,600	2,960	3,040	2,070	1,260	842	954
18	1,560	1,760	2,760	2,780	b2,700	2,800	2,870	2,150	1,720	1,280	433	822
19	1,550	1,960	2,700	2,770	*b2,200	2,600	3,510	2,750	1,860	1,180	752	1,030
20	1,600	2,010	2,540	2,090	b2,000	2,800	3,750	2,240	2,030	538	858	826
21	1,600	1,510	2,980	2,860	b2,200	3,000	4,300	2,380	1,520	884	846	602
22	1,880	2,000	2,300	2,390	b2,100	2,800	4,600	1,930	1,160	1,340	810	938
23	1,720	1,590	3,190	2,620	b2,000	2,500	4,800	1,970	1,710	1,540	768	986
24	1,330	1,610	2,580	2,860	b2,500	3,200	4,800	2,050	1,490	1,510	770	766
25	1,470	1,950	2,520	2,900	b2,400	3,500	4,700	1,590	1,600	1,420	728	620
26	1,530	1,920	2,900	2,630	b2,300	2,900	4,300	2,220	1,430	1,400	710	650
27	1,060	2,060	2,740	2,470	2,110	3,000	3,900	1,880	1,400	722	758	520
28	1,570	1,610	2,780	2,720	2,160	3,000	3,600	1,930	1,380	1,060	834	450
29	1,590	1,750	2,460	2,580	-	2,900	3,300	1,710	990	1,280	774	760
30	1,690	1,600	2,930	2,300	-	2,200	3,100	1,140	1,300	1,220	730	740
31	1,430	-	2,840	2,520	-	2,600	-	1,610	-	894	741	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	50,560	1,960	1,060	1,631	0.451	0.52
November	50,950	2,110	1,250	1,698	.469	.52
December	74,480	3,190	1,410	2,403	.664	.77
Calendar year	-	-	-	-	-	-
January	84,020	3,410	2,090	2,710	.749	.86
February	64,950	3,010	1,910	2,320	.641	.67
March	89,010	3,500	2,200	2,871	.793	.91
April	100,590	4,800	2,400	3,353	.926	1.03
May	70,110	3,040	1,140	2,262	.625	.72
June	51,010	2,420	990	1,700	.470	.52
July	36,758	1,700	538	1,186	.328	.38
August	25,669	1,200	433	828	.229	.26
September	22,556	1,030	450	752	.208	.23
Water year 1940-41	720,663	4,800	433	1,974	.545	7.39

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Mar. 14 to Apr. 16, Apr. 21 to May 2, June 30 to July 15 and Sept. 26-30; discharge computed on basis of records for St. Joseph River at Mottville.

East Branch of Coldwater River at Coldwater, Mich.

Location.- Staff gage, lat. 41°55'50", long. 85°00'50", in sec. 21, T. 6 S., R. 6 W., at sewage-treatment plant in Coldwater, 2 miles upstream from mouth.

Drainage area.- 59 square miles.

Records available.- December 1937 to September 1941.

Extremes.- Maximum discharge observed during year, 89 second-feet Jan. 4 (gage height, 1.98 feet); minimum observed, 1.2 second-feet Sept. 5-9 (gage height, 0.92 foot).
1937-41: Maximum discharge observed, 379 second-feet Feb. 20, Mar. 12, 1939 (gage height, 2.80 feet), from rating curve extended above 150 second-feet; minimum observed, 1.0 second-feet Oct. 7, 23-25, 1939 (gage height, 0.24 foot).

Remarks.- Records fair except those for periods of ice effect or doubtful or no gage-height record, which are poor. Gage read once daily except Sundays.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	8.5	a13	79	43	20	d40	39	a19	17	2.7	1.4
2	6.5	8.5	10	84	a42	a20	d44	39	17	16	2.3	1.4
3	6.5	a8.5	9.5	e7	41	48	d43	37	16	16	a2.2	1.4
4	6.5	8.5	b12	89	49	46	43	a40	16	15	2.0	1.4
5	5.8	8.5	b14	a69	45	43	52	43	15	15	2.0	1.2
6	a7.9	8.5	b17	58	43	41	a50	43	14	a14	2.0	1.2
7	10	8.5	25	58	41	41	49	45	13	13	2.0	a1.2
8	12	8.5	a26	63	39	39	47	52	a13	11	2.0	1.2
9	10	7.7	27	58	a38	a39	45	54	13	10	2.0	1.2
10	10	a9.5	29	a56	37	39	46	49	13	9.0	a2.0	1.3
11	10	23	*29	60	22	39	43	a46	14	9.0	2.0	1.4
12	10	24	33	a58	33	39	41	42	14	8.1	2.3	1.3
13	a10	23	41	56	39	39	a41	40	14	a7.6	1.7	1.3
14	d11	19	33	54	41	39	41	38	14	7.2	1.4	a1.3
15	d12	16	a44	49	43	41	41	40	a12	6.5	1.4	1.3
16	d12	15	55	49	a44	a40	45	62	10	5.8	1.7	1.3
17	d11	a15	55	52	45	39	47	66	9.0	5.1	a1.7	1.3
18	9.5	14	55	58	b40	37	47	a62	9.5	5.8	1.7	1.3
19	9.5	13	55	a48	b35	37	52	59	9.5	7.2	1.7	1.3
20	a9.2	14	55	39	b32	37	a56	55	8.5	a6.6	1.4	1.3
21	9.0	15	54	49	35	37	60	50	8.5	5.8	1.4	a1.3
22	9.0	15	a52	54	35	37	79	49	a9.0	5.1	1.4	1.3
23	7.7	18	49	60	a34	a37	79	45	7.7	5.1	1.4	1.3
24	8.5	a17	43	45	d32	37	69	41	6.8	5.1	a1.4	1.3
25	8.5	15	44	33	*d31	35	a60	a40	6.8	5.1	1.4	1.3
26	8.5	14	55	a39	d32	35	54	39	6.8	5.1	1.4	1.3
27	a8.1	23	62	45	33	35	a50	39	6.1	a4.8	1.4	1.3
28	7.7	24	66	45	25	37	45	37	5.8	4.5	1.4	a1.3
29	8.5	24	a70	45	-	35	43	33	a8.5	4.5	1.4	1.3
30	8.5	26	73	40	-	a37	41	27	16.0	3.9	1.4	1.3
31	8.5	-	75	43	-	d39	-	21	-	3.3	a1.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	279.1	12	5.8	9.00	0.153	0.18
November	452.2	26	7.7	15.1	.256	.29
December	1,280.5	75	9.5	41.3	.700	.81
Calendar year 1940	8,731.0	79	2.1	23.9	.405	5.51
January	1,722	89	33	55.5	.941	1.09
February	1,049	49	22	37.5	.636	.66
March	1,164	48	20	37.5	.636	.73
April	1,492	79	40	49.7	.842	.94
May	1,372	66	21	44.3	.751	.86
June	345.5	19	5.8	11.5	.195	.22
July	257.2	17	3.3	8.30	.141	.16
August	53.6	2.7	1.4	1.73	.029	.03
September	39.0	1.4	1.2	1.30	.022	.02
Water year 1940-41	9,506.1	89	1.2	26.0	.441	5.99

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of records for Elkhart River at Goshen, Ind., and weather records.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge for each period computed on basis of one discharge measurement, records for Elkhart River at Goshen, Ind., and weather records.

Elkhart River at Goshen, Ind.

Location.- Water-stage recorder, lat. 41°45', long. 85°50', near line between secs. 8 and 9, T. 36 N., R. 6 E., at River Avenue Bridge in Goshen, half a mile upstream from Rock Run.

Drainage area.- 573 square miles.

Records available.- April 1931 to September 1941 in reports of Geological Survey. September 1924 to September 1927 in reports of Indiana Department of Conservation.

Average discharge.- 13 years (1924-27, 1931-41), 413 second-feet.

Extremes.- Maximum discharge during year, 701 second-feet (regulated) Apr. 3 (gage height, 3.36 feet); minimum, 28 second-feet (regulated) Sept. 5, 6 (gage height, 1.51 feet); minimum daily, 35 second-feet Sept. 26.

1931-41: Maximum discharge, 3,540 second-feet Mar. 13, 1939 (gage height, 8.45 feet), from rating curve extended above 1,500 second-feet; minimum, that of Sept. 5, 6, 1941; minimum daily, that of Sept. 26, 1941; minimum gage height, 1.27 feet May 25, 30, 1932.

Remarks.- Records good. Regulated by three power plants above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	134	218	346	220	222	312	292	144	147	85	67
2	149	159	199	317	288	272	409	a280	152	149	83	72
3	193	162	146	380	280	311	441	a240	156	130	57	65
4	174	157	153	363	261	384	366	225	166	130	74	56
5	177	15e	195	201	223	408	481	223	173	153	74	52
6	133	163	212	216	251	346	481	223	173	108	71	59
7	225	163	231	235	278	379	454	259	134	109	65	62
8	218	167	203	282	266	268	433	282	130	101	60	60
9	206	157	203	303	120	268	376	352	139	112	77	67
10	196	141	225	259	278	286	376	294	147	115	65	66
11	191	178	207	257	235	351	276	273	136	107	65	76
12	175	204	207	251	248	447	328	267	210	109	62	64
13	152	220	235	246	325	434	282	268	272	120	60	49
14	167	196	229	203	453	457	302	240	270	108	64	50
15	168	192	222	193	375	491	269	221	235	100	66	68
16	162	150	326	244	316	457	302	325	236	98	73	63
17	158	81	346	248	322	343	353	385	240	96	72	49
18	160	208	362	227	237	265	321	316	221	100	70	56
19	152	154	277	225	248	362	372	238	201	99	71	52
20	122	170	310	190	280	407	515	260	206	100	75	56
21	162	180	207	231	284	382	474	235	214	100	81	48
22	152	170	259	324	266	381	419	235	169	101	87	60
23	159	182	276	274	217	373	411	224	179	100	93	48
24	157	161	265	235	216	324	337	229	170	104	92	51
25	135	170	235	227	211	366	300	194	158	104	80	50
26	129	176	227	233	208	289	427	167	164	116	68	35
27	153	176	231	216	192	327	390	168	141	89	76	55
28	141	157	276	229	203	318	306	192	128	87	73	63
29	146	160	345	269	-	313	320	180	145	84	79	66
30	136	203	303	182	-	230	297	174	146	85	76	70
31	143	-	258	216	-	319	-	162	-	82	70	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,057	225	122	163	0.284	0.33
November	5,049	220	81	168	.293	.33
December	7,588	362	146	245	.428	.49
Calendar year 1940	125,937	2,260	58	344	.600	8.19
January	7,822	380	182	252	.440	.51
February	7,301	453	120	261	.455	.47
March	10,780	491	222	348	.607	.70
April	11,130	515	269	371	.647	.72
May	7,623	385	162	246	.429	.49
June	5,355	272	128	178	.311	.35
July	3,343	153	82	108	.188	.22
August	2,264	93	57	73.0	.127	.15
September	1,755	76	35	58.5	.102	.11
Water year 1940-41	75,067	515	35	206	.360	4.87

a No gage-height record; discharge computed on basis of records for St. Joseph River at Niles, Mich.

Kalamazoo River near Battle Creek, Mich.

Location.- Water-stage recorder, lat. 42°20'45", long. 85°15'45", in NE¼ sec. 32, T. 1 S., R. 8 W., half a mile upstream from Wabascon Creek and 3 miles downstream from city of Battle Creek. Datum of gage is 797.00 feet above mean sea level, datum of 1929.

Drainage area.- 849 square miles.

Records available.- July 1937 to September 1941.

Extremes.- Maximum discharge during year, 1,520 second-feet Apr. 22 (gage height, 5.08 feet); minimum, 114 second-feet (regulated) Sept. 2 (gage height, 2.19 feet); minimum daily, 143 second-feet (regulated) Aug. 21; minimum gage height, 1.79 feet Feb. 10.
1937-41: Maximum discharge, 2,720 second-feet (revised) Feb. 23, 1939 (gage height, 6.49 feet); minimum, 50 second-feet (regulated) Sept. 22, 1939; minimum daily, that of Aug. 21, 1941; minimum gage height, 1.51 feet Feb. 22, 1940.
Revisions.- The maximum discharge for the water year 1938 has been revised to 2,450 second-feet May 31, 1938 (gage height, 6.49 feet), and that for the water year 1939 to 2,720 second-feet Feb. 23, 1939 (gage height, 6.73 feet), superseding figures published in Water-Supply Papers 854 and 874.

Remarks.- Records fair except those for period of no gage-height record, which are poor. Slight regulation from operation of power plants upstream.

Revisions.- Revised figures of discharge for high-water periods in the water years 1938 and 1939 are given herein. They supersede those published in Water-Supply Papers 854 and 874.

Discharge, in second-feet, 1938-39, 1940-41

1938

Date	Discharge	Date	Discharge
May 29.....	2,050	June 1.....	2,200
30.....	2,280	2.....	2,120
31.....	2,360	3.....	1,730

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	362	256	292	b370	304	1,280	735	730	322	498	298	230
2	430	252	313	325	369	1,130	692	750	386	480	213	277
3	359	346	365	343	342	1,220	724	597	495	450	284	209
4	396	325	590	354	400	1,350	713	650	454	385	243	350
5	360	370	550	402	401	1,400	705	632	411	332	274	382
6	274	338	478	548	427	1,380	627	465	429	375	274	375
7	216	344	593	608	394	1,290	563	465	385	378	219	329
8	292	272	458	578	376	1,210	581	520	465	368	354	308
9	219	352	499	484	479	1,170	665	425	371	469	469	304
10	399	334	407	525	530	1,060	632	670	429	517	429	267
11	288	309	434	631	568	944	707	616	612	436	364	287
12	252	331	421	552	650	955	980	483	612	418	326	291
13	296	372	388	545	682	1,080	1,060	540	536	421	382	287
14	268	289	*318	405	746	1,240	1,220	505	555	407	360	301
15	274	287	297	453	655	1,350	1,270	434	517	336	274	260
16	300	306	369	430	676	1,490	1,200	469	517	294	260	159
17	407	341	337	402	527	1,370	1,320	469	465	257	294	281
18	184	341	379	365	548	1,260	1,620	378	447	340	223	230
19	283	367	361	360	915	1,090	1,980	382	473	291	671	146
20	328	244	340	407	1,790	973	2,280	359	389	318	950	233
21	309	351	282	334	2,120	911	2,450	513	378	318	574	284
22	314	288	b310	453	2,450	870	2,360	531	462	291	476	156
23	398	347	b280	353	2,540	*792	2,120	498	593	267	429	240
24	322	a320	b330	346	2,050	798	1,850	517	652	322	378	287
25	259	a330	b310	280	1,500	720	1,670	393	574	250	354	213
26	302	a300	b280	264	1,220	784	1,410	374	555	298	336	270
27	300	a280	b300	b380	1,050	839	1,180	386	555	186	318	243
28	307	343	b330	b300	1,080	896	1,050	414	498	360	291	213
29	368	289	b310	364	-	871	970	465	458	318	240	176
30	309	300	b280	362	-	793	850	396	447	270	219	329
31	337	-	b310	268	-	782	-	454	-	350	287	-

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station at Comstock and weather records.
b Stage-discharge relation affected by ice.

Discharge, in second-feet, of Kalamazoo River near Battle Creek, Mich., 1938-39, 1940-41--Continued

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	304a	463	467	975	500	382	596	531	386	566	324	165
2	318	411	438	1,070	485	394	648	536	409	610	248	176
3	348	362	a320	1,050	482	582	668	501	430	402	227	154
4	350	451	a350	1,080	452	748	705	461	498	409	277	243
5	345	388	a420	1,010	406	1,090	740	436	528	356	296	259
6	342	432	a500	997	511	1,110	684	468	552	358	282	253
7	469	451	564	868	481	1,130	752	480	499	324	252	259
8	452	447	578	868	365	1,000	754	515	402	276	230	222
9	509	382	566	802	434	834	784	576	340	276	183	225
10	585	414	591	693	402	745	745	504	312	301	164	372
11	555	409	729	658	403	610	683	494	351	420	291	312
12	513	476	776	641	438	672	645	462	392	393	260	235
13	417	500	829	639	544	716	538	434	443	326	255	246
14	426	551	697	518	646	578	578	396	572	294	282	256
15	495	541	758	455	674	614	543	433	616	306	236	248
16	453	512	910	522	722	699	615	470	577	308	247	244
17	568	451	881	621	684	549	648	460	459	337	199	240
18	522	394	1,020	636	474	488	770	476	494	312	260	328
19	479	412	1,060	708	526	592	934	380	488	297	268	221
20	432	419	1,090	696	480	693	1,140	401	446	318	289	232
21	434	442	948	595	507	570	1,360	384	426	332	143	242
22	369	472	881	752	478	626	1,450	410	414	278	214	240
23	445	462	831	744	491	609	1,380	370	404	292	262	244
24	395	503	747	616	482	667	1,190	336	402	378	195	253
25	407	424	708	570	460	727	990	350	396	401	248	248
26	436	411	728	565	441	722	817	344	374	339	332	217
27	431	461	697	558	469	728	783	333	327	329	260	224
28	393	413	714	516	400	646	624	295	358	336	267	261
29	436	424	756	530	-	658	524	304	348	267	186	190
30	377	478	889	540	-	553	559	291	338	304	192	223
31	391	-	925	461	-	572	-	294	-	303	164	-

a No gage-height record; discharge computed on basis of records for station at Comstock and Battle Creek at Battle Creek.

Monthly discharge, in second-feet, 1937-39, 1940-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1937	12,263	612	267	396	0.466	0.54
November	9,255	458	264	356	.419	.41
December	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-
January 19-31, 1938	7,857	930	287	604	.711	.34
February	34,660	1,900	790	1,238	1.46	1.52
March	28,412	1,150	652	917	1.08	1.25
April	24,766	1,110	480	826	.973	1.09
May	25,837	2,360	350	833	.981	1.13
June	26,585	2,200	443	886	1.04	1.16
July	15,168	810	260	489	.576	.66
August	12,622	690	233	407	.479	.55
September	10,997	498	226	367	.432	.48
Water year	-	-	-	-	-	-
October 1938	9,712	430	184	313	.369	.43
November	9,624	370	252	321	.378	.42
December	11,511	593	280	371	.437	.50
Calendar year	-	-	-	-	-	-
January 1939	12,791	631	264	413	.486	.56
February	25,789	2,540	304	921	1.08	1.13
March	33,298	1,490	720	1,074	1.27	1.46
April	36,184	2,450	563	1,206	1.42	1.59
May	15,490	750	359	499	.588	.68
June	14,442	652	322	481	.567	.63
July	11,000	517	186	355	.418	.48
August	11,063	950	213	357	.420	.48
September	7,917	382	146	264	.311	.35
Water year 1938-39	198,811	2,540	146	545	.642	8.71
October 1940	13,396	585	304	432	.509	.59
November	15,356	551	362	445	.524	.59
December	22,368	1,090	320	722	.850	.98
Calendar year 1940	176,471	1,540	152	482	.568	7.75
January 1941	21,954	1,080	455	708	.834	.96
February	15,837	722	366	494	.582	.61
March	21,304	1,130	382	687	.809	.93
April	23,845	1,450	524	795	.936	1.04
May	15,125	576	291	423	.498	.57
June	12,981	616	312	433	.510	.57
July	10,748	610	267	347	.409	.47
August	7,553	332	143	243	.286	.33
September	7,232	372	154	241	.284	.32
Water year 1940-41	181,679	1,450	143	498	.587	7.95

Kalamazoo River at Comstock, Mich.

Location.- Wire-weight gage, lat. 42°17'10", long. 85°30'50", in NE¼ sec. 19, T. 2 S., R. 10 W., at highway bridge at Comstock, a quarter of a mile downstream from Comstock Creek. Datum of gage is 759.13 feet above mean sea level, datum of 1929.

Drainage area.- 1,010 square miles.

Records available.- April to August 1931, October 1932 to September 1941.

Extremes.- Maximum discharge observed during year, 1,590 second-feet Apr. 23 (gage height, 2.74 feet); minimum observed, 202 second-feet Sept. 2, 4; minimum gage height observed, 0.94 feet Sept. 4.

1931, 1932-41: Maximum discharge observed, 3,720 second-feet June 28, 1937 (gage height, 5.98 feet); minimum observed, 199 second-feet Oct. 14, 1934; minimum gage height, 0.56 foot May 4, 1931.

Remarks.- Records fair except those below 600 second-feet and those for periods of ice effect and periods of doubtful or no gage-height record, all of which are poor. Flow regulated by power plants above station. Gage read once daily.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	500	650	710	1,170	775	710	905	840	530	590	338	257
2	470	710	710	1,240	775	710	905	808	560	560	305	202
3	530	650	500	1,310	808	710	905	775	560	560	287	221
4	590	590	442	1,310	775	1,170	970	710	620	530	265	202
5	530	680	590	1,100	710	1,310	1,100	742	710	530	278	210
6	560	620	680	1,040	775	1,310	970	680	742	500	210	244
7	650	650	775	1,240	808	1,380	1,040	710	775	500	213	296
8	775	710	840	1,170	710	1,310	1,040	742	a680	500	224	282
9	742	650	840	*1,100	905	1,100	1,040	742	a580	500	221	363
10	775	650	808	1,040	742	1,100	1,040	710	a500	470	221	389
11	808	710	905	1,040	775	905	1,040	680	a550	470	228	338
12	742	775	970	970	775	a870	970	680	a600	590	228	338
13	742	742	970	970	840	a850	840	680	a750	620	228	338
14	620	808	905	a800	905	a830	840	650	970	500	240	338
15	742	808	905	840	970	970	840	650	970	389	257	338
16	808	775	1,040	808	970	970	840	710	905	500	278	363
17	775	742	1,240	905	970	a790	905	680	775	500	287	338
18	808	710	1,100	970	840	b820	970	650	680	530	287	363
19	808	650	1,240	970	620	b820	1,100	650	775	500	296	338
20	742	650	1,240	1,100	650	b820	1,380	620	650	500	310	338
21	650	710	1,240	1,100	742	b890	1,450	590	650	470	310	314
22	680	742	1,170	a1,450	775	970	1,520	560	560	442	314	338
23	590	742	1,100	1,100	710	970	1,590	590	560	500	314	338
24	680	742	1,040	b800	710	970	1,520	530	560	470	338	338
25	620	710	970	b830	775	1,040	1,450	530	560	470	338	338
26	620	650	970	b800	*775	1,040	1,040	470	530	470	363	338
27	650	680	1,040	b820	710	1,040	1,040	470	530	470	363	338
28	680	742	970	b800	775	1,040	1,040	442	500	470	363	314
29	590	680	970	b780	-	970	1,040	415	500	442	389	314
30	710	650	1,100	b750	-	905	970	442	620	338	274	305
31	560	-	1,170	742	-	905	-	470	-	338	232	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20,747	808	470	669	0.662	0.76
November	20,978	808	590	699	.692	.77
December	29,150	1,240	442	940	.931	1.07
Calendar year 1940	260,520	2,010	265	712	.705	9.57
January	31,045	1,450	730	1,001	.991	1.14
February	22,070	970	620	788	.780	.81
March	30,195	1,380	710	974	.964	1.11
April	32,300	1,590	840	1,077	1.07	1.19
May	19,618	840	415	633	.627	.72
June	19,452	970	500	648	.642	.72
July	15,219	620	338	491	.486	.56
August	8,799	389	210	284	.281	.32
September	9,371	389	202	312	.309	.35
Water year 1940-41	258,944	1,590	202	709	.702	9.52

* Winter discharge measurement made on this day.

a Doubtful or no gage-height record; discharge computed on basis of records for station near Battle Creek.

b Stage-discharge relation affected by ice.

Battle Creek at Battle Creek, Mich.

Location.- Staff gage, lat. 42°19'55", long. 85°09'15", in sec. 5, T. 2 S., R. 7 W., 350 feet upstream from Verona Street Bridge in city of Battle Creek and 3 miles upstream from mouth.

Drainage area.- 241 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1941.

Extremes.- Maximum discharge during year, 688 second-feet Mar. 7 (gage height, 1.80 feet, from graph bassd on gage readings); minimum observed, 38 second-feet Sept. 1, 2 (gage-height, 0.56 foot).
1930-31, 1932-41: Maximum discharge observed, 1,920 second-feet June 28, 1937 (gage height, 2.96 feet); minimum dischargs, 22 second-feet Aug. 14, 1934; minimum gage height, about -0.5 foot in July 1936, and Aug. 31, 1939, caused by opening of gates at dam forming control.

Remarks.- Records good. Gage read twice daily.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

0.6	48	1.3	34e
.7	78	1.6	540
.8	113	1.7	612
1.0	195		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	136	144	408	152	121	214	182	92	148	69	43
2	92	140	136	440	161	121	233	178	99	144	66	38
3	92	144	121	440	161	169	242	165	99	136	66	60
4	92	144	128	472	156	219	252	156	128	136	57	60
5	88	148	144	440	136	372	262	152	136	121	54	66
6	85	148	152	408	148	576	273	152	136	113	60	60
7	140	148	178	372	136	612	293	165	136	102	60	60
8	214	144	195	337	128	408	315	178	117	92	57	48
9	283	140	214	288	144	337	304	178	106	85	54	63
10	315	136	262	237	113	273	273	178	99	92	54	113
11	273	136	298	233	128	262	252	161	92	106	46	106
12	209	169	332	214	136	252	233	152	99	106	60	85
13	169	186	348	204	152	233	219	144	117	106	54	92
14	144	214	268	152	219	214	195	136	144	99	57	63
15	169	228	283	178	278	223	186	144	161	99	66	54
16	178	204	315	178	298	242	195	152	178	92	66	63
17	186	178	326	186	273	186	214	165	204	85	66	60
18	195	169	408	204	161	214	242	165	223	85	60	60
19	186	161	540	214	178	214	315	152	209	82	66	60
20	169	161	540	214	178	200	372	136	169	78	60	60
21	152	161	408	223	169	204	506	128	144	72	60	54
22	144	169	372	242	152	223	650	124	128	69	60	43
23	144	169	337	233	148	262	612	121	121	110	54	57
24	136	169	315	178	136	283	472	121	140	121	54	66
25	136	161	283	186	140	283	396	121	144	113	48	60
26	136	161	262	178	136	273	337	99	136	102	54	60
27	140	148	257	182	128	252	273	99	121	85	60	60
28	144	144	262	178	128	233	237	92	106	72	60	66
29	128	136	273	169	-	223	200	82	106	72	54	51
30	121	144	315	156	-	214	186	82	106	72	60	63
31	128	-	372	152	-	204	-	82	-	72	66	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,887	315	85	158	0.656	0.75
November	4,796	228	136	160	.664	.74
December	8,788	540	121	283	1.17	1.36
Calendar year 1940	57,565	894	40	157	.651	8.89
January	7,896	472	152	255	1.06	1.22
February	4,573	298	113	163	.676	.71
March	8,102	612	121	261	1.08	1.25
April	8,953	650	186	298	1.24	1.38
May	4,342	182	82	140	.581	.67
June	3,996	223	92	133	.552	.62
July	3,067	148	69	98.9	.410	.47
August	1,828	69	46	59.0	.245	.28
September	1,894	113	38	63.1	.262	.29
Water year 1940-41	63,122	650	38	173	.718	9.74

Grand River at Jackson, Mich.

Location.- Water-stage recorder, lat. 42°17'05", long. 84°24'30", in sec. 22, T. 2 S., R. 1 W., 1 mile north of Jackson. Datum of gage is 900.00 feet above mean sea level.

Drainage area.- 174 square miles.

Records available.- April 1935 to September 1941.

Extremes.- Maximum discharge during year, 442 second-feet May 31 (gage height, 11.01 feet); minimum, 12 second-feet Aug. 18 (gage height, 8.77 feet).
1935-41: Maximum discharge, 1,220 second-feet June 25, 1937 (gage height, 13.50 feet), from rating curve extended above 750 second-feet; minimum, 9.2 second-feet Aug. 22, 1936; minimum daily, 12 second-feet Aug. 23, 1936.

Remarks.- Records good except those for periods of backwater from aquatic vegetation, which are fair, and those for period of no gage-height record, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	60	55	181	63	43	98	164	62	44	23	61
2	33	58	50	207	63	43	95	126	63	44	20	28
3	35	55	46	278	54	89	92	62	72	41	18	61
4	35	59	59	306	54	107	92	54	116	35	22	33
5	33	60	56	193	55	101	103	56	90	32	22	30
6	50	58	58	184	59	106	103	62	90	30	21	25
7	65	55	74	186	57	108	108	72	134	41	20	21
8	47	54	67	192	47	106	106	72	164	32	22	28
9	47	54	74	180	45	100	100	72	214	32	25	27
10	47	55	85	162	48	113	98	70	205	31	17	31
11	47	91	83	159	53	157	92	66	177	46	31	26
12	44	100	102	137	54	146	86	66	128	29	21	25
13	40	128	101	142	57	141	88	62	135	25	18	23
14	50	127	94	120	80	141	98	60	125	33	19	20
15	56	120	135	126	71	142	137	84	121	36	33	25
16	46	117	172	125	68	142	157	71	123	43	18	26
17	48	104	168	155	74	89	150	71	113	35	14	25
18	46	104	167	146	39	116	175	65	108	45	18	22
19	48	102	168	128	70	126	209	66	103	34	20	22
20	44	102	165	137	62	105	214	63	95	28	20	23
21	49	56	161	125	57	97	268	61	83	34	21	20
22	50	58	152	142	55	95	268	60	57	37	22	24
23	50	58	151	132	52	95	268	55	39	46	20	27
24	53	55	147	116	53	101	235	50	36	34	18	26
25	50	56	137	118	52	101	148	42	34	28	21	28
26	47	53	134	108	48	101	142	42	32	27	22	25
27	44	54	137	103	47	100	224	42	33	25	22	22
28	47	51	147	109	43	100	218	38	37	28	21	20
29	58	47	165	103	-	97	199	40	39	29	20	23
30	53	51	183	98	-	90	182	32	45	26	18	27
31	54	-	161	92	-	97	-	130	-	27	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,450	65	33	46.8	0.269	0.31
November	2,202	128	47	73.4	.422	.47
December	3,674	183	46	119	.684	.79
Calendar year 1940	34,162	600	28	93.3	.536	7.31
January	4,690	306	92	151	.868	1.00
February	1,580	80	39	56.4	.324	.34
March	3,295	157	43	106	.609	.70
April	4,553	268	86	152	.874	.98
May	2,076	164	32	67.0	.385	.44
June	2,873	214	32	95.6	.551	.61
July	1,057	46	25	34.1	.196	.23
August	645	33	14	20.8	.120	.14
September	824	61	20	27.5	.158	.18
Water year 1940-41	28,919	306	14	79.2	.455	6.19

Note.- Backwater from aquatic vegetation Oct. 1 to Jan. 3, May 12 to Sept. 30; discharge computed on basis of seven discharge measurements, gage heights, weather records, and recorded range of stage (no gage-height record Aug. 24 to Sept. 1).

Grand River at Lansing, Mich.

Location.- Water-stage recorder, lat. 42°45'20", long. 84°34'55", in SW¼ sec. 5, T. 4 N., R. 2 W., at northwest city limits of Lansing, 3⅛ miles downstream from Cedar River.

Drainage area.- 1,230 square miles.

Records available.- November 1934 to September 1941. March 1901 to August 1906 at site at Seymour Street Bridge, 1⅛ miles upstream.

Extremes.- Maximum discharge during year, 2,960 second-feet (regulated) Jan. 3 (gage height, 6.46 feet); minimum, 6 second-feet (regulated) Aug. 26; minimum daily, 20 second-feet Aug. 25.
1934-41: Maximum discharge, 7,170 second-feet June 27, 1937 (gage height, 10.47 feet); minimum, that of Aug. 26, 1941; minimum daily, that of Aug. 25, 1941.

Remarks.- Records good except those for October and May to September, which are fair, and those for periods of no gage-height record, which are poor. Flow regulated by power plant upstream.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	382	330	2,010	588	379	792	724	390	230	138	58
2	230	438	390	2,030	540	226	832	711	360	265	93	126
3	146	345	400	2,740	616	816	830	700	340	305	58	120
4	159	578	400	2,640	557	2,050	891	567	390	294	89	122
5	210	588	380	2,450	500	2,140	1,190	487	430	166	192	118
6	256	304	400	1,560	456	1,830	1,320	495	410	232	126	85
7	284	278	510	1,520	504	1,500	1,460	500	370	177	128	93
8	959	377	500	1,360	472	1,240	1,340	575	380	271	110	246
9	530	337	550	1,310	226	876	1,240	879	410	217	95	87
10	434	307	900	1,070	493	988	1,040	577	440	218	50	226
11	419	512	1,120	1,080	330	1,000	1,050	418	448	196	174	105
12	372	524	1,100	838	447	804	850	173	550	157	86	94
13	362	731	1,070	862	656	800	836	347	800	127	57	70
14	470	652	871	562	1,010	789	790	392	1,100	182	44	52
15	431	536	748	672	1,120	928	462	432	1,030	228	130	96
16	510	480	1,340	520	972	957	794	508	937	210	63	94
17	605	400	2,030	950	861	778	824	502	643	200	103	129
18	466	440	1,860	1,040	461	612	1,040	403	575	239	84	92
19	470	420	1,740	886	554	795	2,370	508	537	169	90	102
20	292	390	1,330	720	397	750	2,300	438	421	107	106	92
21	474	340	1,430	666	457	747	2,640	366	405	138	182	54
22	442	430	1,300	939	549	752	2,560	411	554	169	151	96
23	344	370	1,200	982	449	740	2,190	334	559	188	106	112
24	393	320	1,160	868	371	812	1,770	377	536	182	94	116
25	347	420	852	699	444	858	1,360	356	458	180	20	135
26	400	380	916	508	328	828	1,310	322	371	117	48	102
27	264	450	1,040	528	324	797	1,100	330	265	139	108	69
28	476	440	1,360	520	308	769	1,050	322	297	122	88	116
29	351	470	1,390	500	-	751	982	227	266	170	108	84
30	390	410	2,130	530	-	641	832	209	296	170	71	211
31	346	-	2,270	520	-	714	-	278	-	155	46	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12,072	959	146	389	0.316	0.37
November	13,049	731	278	435	.354	.39
December	33,017	2,270	330	1,065	.866	1.00
Calendar year	-	-	-	-	-	-
January	34,070	2,740	500	1,099	.893	1.03
February	14,990	1,120	226	535	.435	.45
March	28,667	2,140	226	925	.752	.87
April	38,045	2,640	462	1,268	1.03	1.15
May	13,868	879	173	447	.363	.42
June	14,968	1,100	265	499	.406	.45
July	5,920	305	107	191	.155	.18
August	3,038	192	20	98.0	.080	.09
September	3,302	246	52	110	.089	.10
Water year 1940-41	215,006	2,740	20	589	.479	6.50

a No gage-height record Nov. 16 to Dec. 9, Jan. 30, 31, June 1-9; discharge computed on basis of weather records, records for stations at Jackson and Grand Rapids, and Cedar River at East Lansing.

Grand River at Grand Rapids, Mich.

Location.- Water-stage recorder, lat. 42°57'10", long. 85°41'15", at municipal sewage pumping plant near west limits of Grand Rapids, Kent County, three-quarters of a mile upstream from Plaster Creek. Datum of gage is 589.01 feet above mean sea level (levels by city of Grand Rapids).

Drainage area.- 4,900 square miles.

Records available.- October 1930 to September 1941. March 1901 to December 1905 and January 1906 to September 1918 (gage heights only) at site at Fulton Street Bridge in Grand Rapids.

Average discharge.- 11 years (1930-41) 2,699 second-feet.

Extremes.- Maximum discharge during year, 9,920 second-feet Jan. 5 (gage height, 5.43 feet); minimum observed, 710 second-feet Aug. 10 (gage height, -5.10 feet).
1930-41: Maximum discharge, 28,300 second-feet (revised, supersedes figure published in Water-Supply Paper 854) Feb. 16, 1938 (gage height, 13.27 feet); minimum observed, 341 second-feet Aug. 17, 1936; minimum daily, 381 second-feet Aug. 17, 1936.
A stage of 19.3 feet occurred at the Fulton Street gage Mar. 27, 1904 (discharge, 53,000 second-feet).

Remarks.- Records good except those below 1,000 second-feet, which are fair. Flow slightly regulated by power plants above station. City of Grand Rapids diverts about 30 second-feet above station, most of which is returned to river 1 mile below.

Cooperation.- Gage-height record furnished by city of Grand Rapids.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

-5.1	710	-1.0	2,940
-4.6	828	0	3,790
-4.0	1,030	2.0	5,750
-3.0	1,480	4.0	8,050
-2.0	2,160	5.4	9,920

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,240	1,810	1,740	7,090	3,020	2,300	4,240	3,260	1,480	1,110	955	857
2	1,280	1,880	1,880	8,050	3,020	2,090	4,060	2,780	1,330	1,110	938	938
3	1,240	1,880	1,670	8,960	2,860	3,520	4,330	2,540	1,240	1,070	842	1,010
4	1,110	1,880	2,230	9,780	2,760	7,330	4,330	2,460	1,330	1,110	842	1,010
5	1,240	1,950	2,020	9,780	2,620	8,310	4,420	2,380	1,430	1,010	828	888
6	1,240	1,950	2,090	9,360	2,620	8,440	4,720	2,380	1,540	1,110	814	888
7	1,330	2,020	2,540	8,440	2,540	8,440	5,320	2,620	1,480	1,200	904	842
8	1,480	2,090	2,780	7,690	2,460	8,050	5,750	2,940	1,430	1,030	801	1,200
9	1,880	1,950	2,940	7,210	2,090	7,450	5,750	3,100	1,480	1,030	842	1,480
10	2,380	1,740	3,610	6,410	2,460	6,850	5,320	2,780	1,380	1,070	752	1,480
11	2,160	1,950	4,330	5,750	2,300	6,850	4,920	2,780	1,430	1,010	972	1,330
12	1,810	2,300	4,720	5,320	2,300	6,410	4,330	2,860	1,380	1,110	1,030	1,330
13	2,020	2,230	4,520	4,920	2,380	6,190	4,060	2,540	1,670	1,010	1,070	1,240
14	1,880	2,540	3,700	4,240	3,340	6,190	3,970	2,300	2,020	972	1,030	1,240
15	1,950	2,620	3,260	3,700	4,520	6,410	3,610	2,230	2,380	955	1,110	1,200
16	2,090	2,540	4,150	3,180	4,820	6,520	3,430	2,300	2,700	888	1,200	1,150
17	2,160	2,300	5,640	4,060	4,920	5,750	3,610	2,460	2,620	904	1,070	1,150
18	2,230	2,300	6,630	4,520	3,790	5,750	3,700	2,460	2,620	1,010	955	1,030
19	2,230	2,160	7,090	4,420	4,330	7,330	3,880	2,620	2,230	972	1,070	990
20	2,230	2,230	6,850	4,620	4,520	7,330	4,620	2,300	1,950	955	990	972
21	2,160	2,230	6,740	5,020	4,150	5,970	5,640	2,160	1,740	938	1,030	972
22	2,090	2,300	6,410	5,120	3,880	5,530	6,080	2,160	1,600	990	1,070	1,010
23	1,880	2,300	5,970	4,620	3,700	5,530	6,300	2,020	1,540	1,070	1,030	920
24	1,880	2,160	5,750	4,150	3,430	5,640	6,080	1,880	1,480	1,030	990	955
25	1,880	2,230	5,530	4,150	3,100	5,530	5,420	1,760	1,540	1,030	1,030	920
26	1,740	2,230	5,320	4,060	2,940	5,320	4,820	1,810	1,600	1,010	1,150	872
27	1,670	2,020	5,420	3,700	2,540	5,020	4,330	1,740	1,430	972	990	842
28	1,670	2,090	5,320	3,520	2,460	4,820	4,060	1,600	1,540	990	955	1,010
29	1,810	2,090	5,640	3,260	-	4,520	3,520	1,540	1,330	972	814	1,010
30	1,740	2,020	6,300	3,100	-	4,240	3,260	1,380	1,200	990	814	1,280
31	1,740	-	6,740	3,100	-	4,330	-	1,360	-	938	814	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	55,440	2,380	1,110	1,788	0.365	0.42
November	63,990	2,620	1,740	2,133	.435	.49
December	139,530	7,090	1,670	4,501	.919	1.06
Calendar year 1940	949,685	11,400	814	2,595	.530	7.22
January	171,300	9,780	3,100	5,526	1.13	1.30
February	89,890	4,920	2,090	3,210	.655	.68
March	183,960	8,440	2,090	5,934	1.21	1.40
April	137,880	6,300	3,260	4,596	.938	1.05
May	71,520	3,260	1,380	2,307	.471	.54
June	50,120	2,700	1,200	1,671	.341	.38
July	31,566	1,200	888	1,018	.208	.24
August	29,702	1,200	762	958	.196	.23
September	32,016	1,480	842	1,067	.218	.24
Water year 1940-41	1,056,914	9,780	752	2,896	.591	8.03

Note.- Discharge for July 3 to Sept. 7 and Sept. 18-31 computed from graph based on fragmentary recorder record and once-daily staff-gage readings.

Cedar River at East Lansing, Mich.

Location.- Water-stage recorder and concrete dam, lat. 42°43'40", long. 84°28'40", in SW¼ sec. 18, T. 4 N., R. 1 W., at East Lansing, 3 miles upstream from Sycamore Creek and 4 miles upstream from mouth. Datum of gage is 824.96 feet above mean sea level.

Drainage area.- 355 square miles.

Records available.- March 1931 to September 1941. August 1902 to December 1903 at site three-quarters of a mile downstream.

Extremes.- Maximum discharge during year, 1,020 second-feet Jan. 3; maximum gage height, 5.64 feet Apr. 21; minimum discharge, 9.0 second-feet Sept. 16 (gage height, 2.96 feet).

1902-3, 1931-41: Maximum discharge, 4,020 second-feet Feb. 14, 1938 (gage height, 9.20 feet); minimum, 3 second-feet July 31, 1931.

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

Remarks.- Records fair except those below 30 second-feet, which are poor.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Mar. 27 to Apr. 24)

Oct. 1 to Jan. 20				Jan. 21 to Sept. 30	
3.1	22	4.3	391	3.0	11
3.2	41	4.6	524	3.1	23
3.4	87	5.0	720	3.2	41
3.6	141	5.5	992	Note.- Same as preceding table above 3.2 feet.	
3.8	203	6.0	1,290		
4.0	273				

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	103	105	746	116	87	168	127	59	39	11	15
2	45	113	110	772	174	90	177	127	59	37	10	16
3	29	97	92	992	168	292	187	121	52	35	10	15
4	24	116	97	880	119	880	190	113	61	23	10	13
5	48	100	108	552	119	853	236	110	68	19	15	40
6	63	113	113	452	119	772	465	113	70	35	23	22
7	263	100	169	395	103	538	506	138	68	18	19	14
8	259	90	259	311	103	391	469	153	59	20	16	13
9	197	80	277	248	75	303	395	153	52	39	13	12
10	153	85	387	203	87	269	323	144	52	19	9.9	20
11	130	122	404	210	90	266	269	127	41	18	13	18
12	110	203	354	187	95	234	230	110	48	41	13	19
13	80	187	319	190	174	200	210	95	75	33	12	16
14	82	159	228	130	439	187	190	77	108	22	15	14
15	159	133	223	156	434	255	168	105	127	15	30	9.9
16	174	116	448	147	277	266	165	108	130	18	28	10
17	165	97	694	151	230	170	217	118	119	25	18	12
18	144	116	628	288	150	165	292	116	97	35	29	9.9
19	124	110	487	262	144	184	354	110	80	26	19	16
20	121	113	400	220	141	144	799	92	65	19	16	14
21	133	108	395	193	121	135	992	85	54	13	15	15
22	124	119	358	203	113	144	772	102	54	15	34	14
23	113	127	323	237	116	156	547	68	56	14	19	12
24	87	108	284	171	100	174	425	77	50	30	20	18
25	95	124	255	159	100	220	315	77	43	19	11	19
26	103	108	259	150	87	223	244	65	39	16	26	15
27	70	105	288	121	83	217	206	59	33	18	20	16
28	92	103	417	116	75	217	190	54	31	14	13	18
29	100	77	628	121	-	217	165	52	33	13	19	18
30	92	87	936	108	-	200	147	48	30	16	16	15
31	85	-	880	124	-	174	-	54	-	18	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,523	263	24	114	0.321	0.37
November	3,419	203	77	114	.321	.36
December	10,925	936	92	352	.992	1.14
Calendar year 1940	53,032	1,650	11	145	.408	5.57
January	9,225	992	108	298	.839	.97
February	4,132	439	75	148	.417	.43
March	8,623	880	87	278	.783	.90
April	10,013	992	147	334	.941	1.05
May	3,090	153	48	100	.282	.33
June	1,913	130	30	63.8	.180	.20
July	722	41	13	23.3	.066	.08
August	535.9	34	9.9	17.3	.049	.06
September	478.8	40	9.9	16.0	.045	.05
Water year 1940-41	56,607.7	992	9.9	155	.437	5.94

Muskegon River at Evart, Mich.

Location.- Wire-weight gage, lat. 43°54', long. 85°15', in sec. 34, T. 18 N., R. 8 W., on highway bridge at east edge of Evart, half a mile upstream from Twin Creek.

Drainage area.- 1,450 square miles.

Records available.- November 1930 to June 1931, January 1934 to September 1941.

Extremes.- Maximum discharge observed during year, 3,750 second-feet Apr. 10 (gage height, 10.87 feet); minimum observed, 237 second-feet Aug. 28 (gage height, 6.58 feet).
1930-31, 1934-41: Maximum discharge observed, 5,110 second-feet Mar. 26, 1938 (gage height, 12.12 feet); minimum observed, that of Aug. 28, 1941.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

6.6	244	8.0	1,030
6.8	322	9.0	1,850
7.0	410	10.0	2,800
7.4	625	10.8	3,640

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	820	1,030	1,180	1,670	1,060	1,030	1,850	1,380	718	374	348	286
2	806	1,140	1,060	1,720	1,000	1,030	2,080	1,300	711	365	352	274
3	778	1,180	827	1,670	*1,180	1,110	2,030	1,300	679	356	352	274
4	771	1,180	625	1,500	1,100	1,110	2,800	1,180	673	356	339	267
5	813	1,180	607	1,500	1,030	1,110	3,200	1,100	661	356	322	278
6	1,060	1,180	813	1,380	960	1,110	3,310	1,140	613	348	318	286
7	869	1,180	883	1,300	1,000	1,130	3,420	1,420	583	335	314	286
8	848	1,180	1,140	1,220	1,030	1,170	3,530	1,420	560	344	318	294
9	834	1,180	1,220	1,180	960	1,080	3,640	1,380	548	a350	318	526
10	827	1,140	1,300	1,220	890	1,100	3,640	1,340	510	352	314	526
11	827	1,140	1,340	1,260	925	1,120	3,420	1,260	486	352	356	485
12	827	1,420	1,300	1,220	1,030	1,110	3,100	1,180	486	352	356	425
13	813	1,500	1,180	1,260	890	1,100	2,900	1,140	500	344	339	406
14	848	1,380	1,100	1,220	960	1,170	2,600	1,100	554	335	331	396
15	1,000	1,340	925	1,000	1,030	1,230	2,400	1,100	613	331	352	378
16	1,060	1,340	1,300	1,030	1,030	1,230	a2,300	1,180	619	339	352	383
17	1,030	1,300	1,180	1,100	1,030	1,170	2,160	1,260	589	348	352	365
18	1,030	1,300	1,380	1,180	960	1,050	2,080	1,180	554	344	326	344
19	1,000	1,340	1,380	1,180	a940	1,050	2,160	1,060	532	344	322	356
20	1,030	1,380	1,380	1,100	910	1,000	2,700	1,030	505	348	318	326
21	1,030	1,380	1,380	1,000	970	1,030	2,800	a1,000	475	356	306	322
22	1,000	1,380	1,460	1,100	1,020	1,030	2,700	1,000	460	348	302	331
23	1,000	1,380	1,420	a1,120	1,020	1,000	2,030	925	486	348	267	326
24	1,000	1,340	1,420	1,060	1,020	1,000	2,260	825	475	344	282	326
25	960	1,300	1,460	806	1,020	1,000	2,160	876	465	339	290	335
26	925	1,260	1,620	890	960	1,030	2,030	806	425	335	298	401
27	883	1,180	1,940	960	1,000	*1,180	1,900	737	396	339	274	415
28	848	1,140	1,980	925	1,030	a1,300	1,760	730	a395	335	252	a420
29	869	1,060	1,980	1,060	-	1,420	1,580	a730	392	339	274	425
30	925	1,100	1,900	1,100	-	1,380	1,500	724	392	339	267	425
31	1,030	-	1,850	1,030	-	1,760	-	711	-	344	294	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	28,361	1,060	771	915	0.631	0.73
November	37,530	1,500	1,030	1,251	.863	.96
December	40,530	1,980	607	1,307	.901	1.04
Calendar year 1940	349,160	2,720	365	954	.658	8.95
January	36,961	1,720	806	1,192	.822	.95
February	27,955	1,180	890	998	.688	.72
March	35,340	1,760	1,000	1,140	.786	.91
April	76,040	3,640	1,500	2,535	1.75	1.95
May	33,614	1,420	711	1,084	.748	.86
June	16,052	718	392	535	.369	.41
July	10,739	374	331	346	.239	.28
August	9,805	356	252	316	.218	.25
September	10,887	526	267	363	.250	.28
Water year 1940-41	363,814	3,640	252	997	.688	9.34

a No gage-height record; discharge computed on basis of records for station at Newaygo.
Note.- Stage-discharge relation affected by ice Feb. 20 to Mar. 20.

Muskegon River at Newaygo, Mich.

Location.- Water-stage recorder, lat. 43°25', long. 85°48', in sec. 24, T. 12 N., R. 13 W., in tailrace of power plant operated by Consumers Power Co. at Newaygo, 600 feet downstream from Penoyer Creek.

Drainage area.- 2,350 square miles.

Records available.- October 1930 to September 1941. June 1901 to December 1906 at site above Newaygo.

Average discharge.- 11 years (1930-41), 1,622 second-feet.

Extremes.- Maximum discharge during year, 3,760 second-feet Apr. 21 (gage height, 48.93 feet); minimum, about 150 second-feet June 4 (gage height, 45.66 feet); minimum daily, 558 second-feet Sept. 7.
1901-6, 1930-41: Maximum daily discharge, 11,600 second-feet Feb. 14, 1938 (gage height, 51.9 feet); minimum, that of June 4, 1941; minimum daily, 390 second-feet July 13, 1934.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Flow regulated at Croton Dam, 18 miles upstream, and by power plant at Newaygo.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

46.3	527	48.1	2,510
46.7	860	48.9	3,690
47.3	1,490		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,490	1,850	1,790	3,160	1,790	2,110	3,020	2,040	1,140	1,120	a920	772
2	1,420	1,290	2,110	3,240	1,790	2,110	3,160	2,130	1,140	1,100	693	779
3	1,300	1,160	2,040	3,240	1,790	2,240	3,160	1,850	1,530	1,150	685	637
4	1,240	1,790	1,850	2,940	1,980	2,300	3,160	1,790	1,340	803	882	790
5	1,230	1,850	1,530	2,180	2,040	2,300	3,160	1,850	1,090	734	920	661
6	1,230	1,850	1,140	1,850	2,110	2,300	3,390	1,850	1,100	740	947	621
7	1,240	1,850	1,490	2,140	2,110	2,300	3,620	2,040	1,130	915	910	558
8	1,260	1,850	1,440	2,790	1,850	2,300	3,620	2,180	1,130	975	a940	937
9	1,240	1,850	1,790	2,510	1,790	2,240	3,540	2,180	1,140	984	a700	1,270
10	1,310	1,850	1,980	2,300	1,790	2,240	3,620	2,180	1,130	985	a660	1,550
11	1,850	2,040	2,180	2,110	1,920	2,300	3,620	2,180	1,200	973	a930	1,790
12	1,850	2,300	2,180	2,180	2,110	2,370	3,620	2,180	1,360	951	a970	1,230
13	1,850	2,510	2,370	2,180	2,110	2,300	3,620	2,180	1,250	681	a940	1,060
14	1,850	3,160	2,240	2,180	2,110	2,300	3,390	2,180	1,140	922	960	883
15	1,850	2,510	1,670	2,180	2,110	2,300	3,160	2,180	1,140	966	1,120	637
16	1,850	1,790	1,730	1,850	2,110	2,300	3,240	2,110	1,100	949	859	851
17	1,790	1,790	2,240	1,790	2,110	2,300	3,160	1,790	1,110	996	661	1,020
18	1,850	1,790	2,180	1,790	2,240	1,920	3,160	1,850	1,140	1,100	898	1,040
19	1,850	2,040	2,300	1,790	2,180	1,790	3,240	1,980	1,180	712	937	1,030
20	1,280	2,180	2,370	1,790	2,110	1,530	3,240	2,180	1,220	689	908	671
21	1,570	1,980	2,370	1,790	2,110	1,850	3,540	2,180	1,110	851	909	629
22	1,790	2,180	2,370	1,920	2,110	1,850	3,620	2,180	1,110	937	766	1,250
23	1,850	2,180	2,580	2,110	2,110	1,850	3,620	1,850	1,140	a950	689	1,100
24	1,790	2,180	2,790	2,110	2,110	1,980	3,620	1,790	1,100	a950	668	1,090
25	1,790	2,180	2,790	1,790	2,110	2,370	3,390	1,790	1,100	a930	888	1,110
26	1,250	2,240	2,940	1,850	1,880	2,300	2,790	1,790	1,130	a800	1,210	1,110
27	1,160	2,440	3,160	1,790	2,110	2,300	2,860	1,790	1,140	a700	1,040	637
28	1,790	2,370	3,240	1,790	2,110	2,580	2,720	1,480	694	a940	925	1,120
29	1,790	2,180	3,160	1,850	-	2,790	2,860	1,170	645	960	764	1,100
30	1,790	1,320	3,160	1,790	-	2,790	2,440	1,120	1,050	959	638	1,330
31	1,790	-	3,160	1,850	-	2,790	-	1,140	-	886	759	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	49,190	1,850	1,160	1,587	0.675	0.78
November	60,550	3,160	1,160	2,018	.859	.96
December	70,340	3,240	1,140	2,269	.966	1.11
Calendar year 1940	620,118	3,530	578	1,694	.721	9.81
January	66,830	3,240	1,790	2,156	.917	1.06
February	56,800	2,240	1,790	2,029	.863	.90
March	69,300	2,790	1,530	2,235	.951	1.10
April	98,360	3,620	2,440	3,279	1.40	1.56
May	59,230	2,180	1,120	1,911	.813	.94
June	33,919	1,530	645	1,131	.481	.54
July	28,258	1,150	681	912	.388	.45
August	26,696	1,210	638	861	.366	.42
September	29,263	1,790	558	975	.415	.46
Water year 1940-41	648,736	3,620	558	1,777	.756	10.28

a No gage-height record; discharge computed on basis of records for station at Evart and weather records.

Pere Marquette River at Custer, Mich.

Location.- Wire-weight gage, lat. 43°56', long. 86°14', on line between secs. 21 and 22, T. 18 N., R. 16 W., three-quarters of a mile south of Custer and 1 mile downstream from South Branch.

Drainage area.- 702 square miles.

Records available.- August 1939 to September 1941.

Extremes.- Maximum discharge observed during year, 1,230 second-feet Apr. 21, 22; maximum gage height, 5.54 feet Feb. 22, backwater from ice; minimum observed, 310 second-feet Aug. 9, 10 (gage height, 2.12 feet).
1939-41: Maximum discharge observed, that of Apr. 21, 22, 1941; minimum observed, that of Aug. 9, 10, 1941.

Remarks.- Records fair.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.1	310	4.0	888
3.0	579	4.9	1,230

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	399	579	700	1,030	700	b660	1,070	824	609	429	354	354
2	384	579	b700	1,030	669	669	1,110	762	609	399	354	354
3	369	579	b700	1,030	669	700	1,150	731	579	399	354	339
4	369	579	b700	b960	639	731	1,190	700	579	399	339	339
5	369	579	b700	b920	639	762	1,230	669	549	399	339	354
6	384	579	b700	b880	639	762	1,230	669	549	399	324	354
7	399	579	b720	*b860	639	731	1,230	700	519	399	324	354
8	459	579	b740	b830	639	700	1,190	856	519	399	324	369
9	459	579	b760	b810	639	669	1,150	1,030	519	399	310	399
10	459	579	b780	b800	639	669	1,070	1,110	519	399	310	519
11	459	579	793	793	639	700	990	1,110	489	399	324	639
12	459	639	793	762	639	700	953	1,070	489	399	339	700
13	459	731	731	762	669	731	920	920	519	399	369	669
14	459	731	731	762	669	731	920	888	519	399	399	669
15	549	731	762	762	669	762	888	888	549	399	399	669
16	579	700	824	762	669	b760	856	888	549	399	429	609
17	579	669	888	762	669	b760	888	856	549	399	429	549
18	579	669	888	762	b670	b760	920	824	519	429	399	489
19	549	669	888	762	b660	b760	990	793	489	429	399	459
20	549	669	888	762	b660	b760	1,110	731	489	429	384	429
21	549	669	888	762	b660	b770	1,230	700	489	429	384	399
22	549	669	888	762	b660	b780	1,230	669	489	429	354	384
23	549	762	888	762	b660	793	1,190	639	489	399	339	369
24	519	824	888	762	b660	793	1,110	639	489	399	324	369
25	489	793	856	762	b660	793	1,030	609	459	384	324	384
26	459	762	888	762	b660	856	990	609	459	384	324	429
27	459	700	888	762	b660	888	990	579	459	369	324	519
28	459	700	953	731	b660	920	953	609	459	369	339	579
29	489	700	990	731	-	953	920	639	429	369	339	579
30	519	700	1,030	700	-	990	856	639	429	369	354	639
31	549	-	1,030	700	-	1,030	-	639	-	369	354	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,859	579	369	479	0.682	0.79
November	19,556	824	579	682	.943	1.05
December	25,573	1,030	700	825	1.18	1.35
Calendar year 1940	225,271	1,140	369	615	.876	11.91
January	24,997	1,030	700	806	1.15	1.32
February	18,404	700	639	657	.936	.97
March	24,043	1,030	660	776	1.11	1.27
April	31,554	1,230	856	1,052	1.50	1.67
May	23,989	1,110	579	774	1.10	1.27
June	15,360	609	429	512	.729	.81
July	12,369	429	369	399	.568	.65
August	10,961	429	310	354	.504	.58
September	14,266	700	339	476	.678	.76
Water year 1940-41	236,231	1,230	310	647	.922	12.49

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Manistee River near Sherman, Mich.

Location.- Wire-weight gage, lat. 44°26', long. 85°42', on line between sec. 36, T. 24 N., R. 12 W., and sec. 31, T. 24 N., R. 11 W., 150 feet upstream from 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 1934 to September 1941.

Average discharge.- 19 years (1903-15, 1934-41), 1,083 second-feet.

Extremes.- Maximum discharge observed during year, 2,460 second-feet Apr. 11 (gage height, 12.95 feet); minimum observed, 710 second-feet Aug. 18 (gage height, 9.23 feet).

1903-16, 1930-31, 1934-41: Maximum discharge observed, 3,500 second-feet Mar. 25, 1913 (gage height, 7.0 feet, datum then in use); minimum, 540 second-feet Aug. 9, 1936 (gage height, 8.55).

Remarks.- Records good except those for periods of ice effect and days of no gage-height record, which are fair.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

9.2	710	11.5	1,650
10.2	1,060	12.8	2,340

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	910	980	1,100	1,650	1,050	1,060	1,140	1,160	1,060	806	773	a800
2	910	1,020	1,060	1,650	1,100	1,140	1,230	1,140	1,060	806	773	840
3	910	1,060	1,040	1,650	1,180	980	1,360	1,140	1,140	773	773	806
4	910	1,060	1,000	1,600	945	945	1,500	1,100	1,020	773	741	806
5	910	1,100	980	1,600	910	910	1,700	1,060	945	773	741	806
6	980	1,140	1,000	1,550	945	910	1,800	1,060	910	773	741	773
7	1,060	1,140	1,020	*1,100	980	840	1,900	1,140	910	773	710	773
8	980	1,100	1,080	1,100	980	910	2,100	1,140	910	773	741	806
9	980	1,100	1,140	1,230	945	910	2,220	1,140	910	e06	710	840
10	945	1,100	1,200	1,320	1,000	910	2,160	1,140	875	773	710	840
11	945	1,140	1,200	1,180	1,100	910	2,340	1,100	875	773	741	840
12	910	1,230	1,200	1,100	1,050	910	2,000	1,060	875	773	a740	806
13	945	1,180	1,250	1,060	1,050	910	1,800	1,020	875	773	741	806
14	945	1,140	1,250	980	1,000	910	1,800	1,020	910	773	741	806
15	1,060	1,140	1,200	945	1,050	910	1,750	1,020	945	741	741	806
16	1,060	1,100	1,200	945	1,000	a1,000	1,700	1,060	910	773	741	806
17	1,060	1,100	1,200	1,020	1,000	1,000	1,750	1,100	910	773	741	806
18	1,320	1,100	1,250	1,140	980	960	1,700	1,060	875	806	710	806
19	1,230	1,180	1,250	1,020	940	940	1,750	1,060	875	840	741	773
20	1,100	1,280	1,300	1,000	920	960	1,950	1,020	840	840	741	773
21	1,100	1,320	1,350	950	1,000	1,000	2,050	1,020	840	840	741	773
22	1,140	1,320	1,400	1,000	1,000	960	2,050	980	840	806	741	773
23	980	1,320	1,450	1,060	1,000	945	1,950	980	840	806	741	741
24	945	1,280	1,500	1,040	945	945	1,750	980	640	773	741	773
25	945	1,230	1,550	1,000	1,020	945	1,550	945	840	773	741	875
26	945	1,180	1,600	960	945	945	1,410	945	840	773	741	1,020
27	945	1,140	1,750	940	945	*910	1,360	945	806	773	741	1,060
28	945	1,100	1,800	960	945	910	1,320	945	806	806	741	980
29	980	1,060	1,800	980	-	945	1,230	960	806	806	741	945
30	980	1,100	1,700	1,000	-	945	1,230	1,020	806	806	741	945
31	980	-	1,700	1,020	-	980	-	1,060	-	773	773	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	30,955	1,320	910	999	1.11	1.28
November	34,440	1,320	980	1,148	1.28	1.42
December	40,520	1,800	980	1,307	1.45	1.67
Calendar year 1940	377,181	1,800	741	1,031	1.15	15.58
January	35,750	1,650	940	1,153	1.28	1.48
February	27,925	1,180	910	997	1.11	1.15
March	29,355	1,140	840	947	1.05	1.21
April	51,550	2,340	1,140	1,718	1.91	2.13
May	32,560	1,180	945	1,050	1.17	1.35
June	26,894	1,140	806	896	.996	1.11
July	24,429	840	741	788	.876	1.01
August	22,974	773	710	741	.823	.95
September	25,003	1,060	741	833	.926	1.03
Water year 1940-41	382,355	2,340	710	1,048	1.16	15.79

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for Muskegon River at Newaygo and weather records.

Note.- Stage-discharge relation affected by ice Dec. 3-23, Jan. 20-22, 24-31, Feb. 1, 10-23, Mar. 17-22.

Rifle River at Michigan Highway 70, near Sterling, Mich.

Location.- Water-stage recorder, lat. 44°04', long. 84°02', in sec. 5, T. 19 N., R. 4 E., at bridge on Michigan Highway 70, 3 miles north of Sterling.

Drainage area.- 320 square miles.

Records available.- January 1937 to September 1941.

Extremes.- Maximum discharge during year, 1,680 second-feet Apr. 3 (gage height, 6.58 feet); minimum, 108 second-feet Aug. 6 (gage height, 1.28 feet).
1937-41: Maximum discharge observed, 2,760 second-feet Mar. 17, 1938; maximum gage height, 12.07 feet Mar. 25, 1939, (backwater from ice); minimum discharge, that of Aug. 6, 1941.

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.4	117	3.2	494
1.6	137	4.5	892
2.0	196	5.5	1,240
2.3	258	6.5	1,640

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a190	345	270	580	360	300	a1,250	272	272	132	154	212
2	183	508	270	565	350	340	*1,400	277	236	127	140	174
3	177	480	290	610	330	370	1,520	263	201	135	123	168
4	178	371	300	565	310	350	1,600	256	180	142	124	159
5	185	384	320	550	320	370	1,640	242	178	120	128	156
6	194	358	340	480	340	410	1,520	249	165	137	122	147
7	235	314	370	494	330	400	1,280	410	160	142	128	145
8	240	282	430	452	320	410	1,140	424	184	144	122	146
9	214	280	536	452	320	440	926	371	176	142	156	228
10	207	292	565	397	300	450	810	322	162	137	168	304
11	205	384	565	397	320	480	715	287	164	135	150	270
12	207	746	522	397	370	490	625	256	170	137	142	212
13	200	640	466	358	350	510	595	235	188	133	146	182
14	214	466	345	350	390	520	550	227	268	126	136	176
15	466	371	320	340	420	530	536	220	410	123	147	164
16	410	330	400	350	380	a540	438	270	317	136	144	177
17	297	317	540	360	390	a500	494	345	246	142	137	203
18	272	327	660	380	370	a520	508	294	207	145	133	178
19	a260	330	740	390	350	530	531	253	182	149	129	164
20	a250	345	800	370	340	550	1,140	229	162	149	135	158
21	a280	345	820	390	360	522	1,140	224	162	137	136	160
22	a290	371	780	400	350	536	778	205	162	127	213	149
23	a250	384	700	380	340	565	580	201	158	133	194	147
24	a230	384	560	360	310	625	494	183	140	156	164	153
25	222	317	384	350	320	670	384	178	140	140	150	160
26	214	287	509	380	300	762	371	172	138	146	141	191
27	210	277	858	370	310	892	345	189	137	162	150	191
28	210	282	892	340	280	1,000	317	200	137	158	137	185
29	231	265	858	350	-	810	280	222	141	149	141	200
30	358	268	670	360	-	892	272	224	141	162	140	256
31	371	-	610	370	-	1,060	-	240	-	176	186	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,650	466	177	247	0.772	0.89
November	11,050	746	265	368	1.15	1.28
December	16,690	892	270	538	1.68	1.94
Calendar year	-	-	-	-	-	-
January	12,887	610	340	416	1.30	1.50
February	9,530	420	280	340	1.06	1.11
March	17,344	1,060	300	559	1.75	2.02
April	24,179	1,640	272	806	2.52	2.81
May	7,940	424	172	256	.800	.92
June	5,684	410	137	189	.591	.66
July	4,379	176	120	141	.441	.51
August	4,516	213	122	146	.456	.52
September	5,515	304	145	184	.575	.64
Water year 1940-41	127,364	1,640	120	349	1.09	14.80

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage, records for Pine River at Alma, and weather records.
Note.- Stage-discharge relation affected by ice Dec. 1-8, 15-24, Jan. 14 to Mar. 15, Mar. 19, 28.

Shiawassee River at Owosso, Mich.

Location.- Water-stage recorder, lat. 43°00'54", long. 84°10'52", in SW¼ sec. 12, T. 7 N., R. 2 E., a quarter of a mile north of Owosso. Datum of gage is 707.82 feet above mean sea level.

Drainage area.- 538 square miles.

Records available.- March 1931 to September 1941.

Extremes.- Maximum discharge during year, 1,760 second-feet during period of no gage-height record in December or January (gage height, 5.77 feet); minimum, 10 second-feet July 2, Aug. 11.

1931-41: Maximum discharge, 3,670 second-feet Feb. 18, 1938 (gage height, 8.13 feet); minimum, 0.2 second-foot July 27, 1934 (gage height, 1.12 feet).

Maximum stage known, 726 feet above mean sea level, at site of former gage, during an ice jam in 1918.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Flow regulated by power plant at Shiawasseetown.

Cooperation.- Water-stage recorder inspected by employee of city of Owosso.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	165	177	1,050	260	160	290	283	85	69	35	40
2	79	176	201	1,100	296	180	300	249	83	50	40	47
3	71	169	140	1,500	255	250	320	231	83	52	42	37
4	76	167	160	1,240	229	950	350	203	62	63	28	34
5	71	167	130	945	247	890	390	203	74	55	36	36
6	81	163	150	848	220	780	430	176	87	43	31	42
7	135	158	170	735	240	780	469	191	88	61	48	34
8	182	136	220	585	240	712	446	192	81	61	25	56
9	188	153	260	446	220	640	435	198	82	44	18	42
10	181	137	350	419	200	660	404	171	64	45	19	43
11	167	175	470	362	180	620	362	181	90	74	23	42
12	144	204	450	340	210	545	327	174	47	58	56	52
13	118	242	370	320	350	*545	281	145	114	51	47	53
14	129	247	320	300	650	500	282	143	91	48	44	38
15	142	251	270	290	520	450	253	142	92	63	56	54
16	213	249	350	280	450	410	255	170	118	44	58	39
17	199	244	680	350	350	380	271	164	111	51	52	37
18	213	247	740	410	350	250	323	183	122	51	65	39
19	203	227	610	370	290	250	565	170	107	54	49	42
20	176	228	610	350	250	*b350	1,270	131	102	43	38	32
21	187	194	530	370	230	350	1,170	125	91	65	43	20
22	144	213	570	400	220	340	1,070	131	86	46	47	40
23	167	177	520	370	200	330	1,020	133	74	42	42	41
24	152	196	480	400	190	360	825	125	78	43	25	37
25	161	182	440	370	180	340	625	105	57	48	48	35
26	150	185	490	b320	180	*324	497	131	73	37	44	42
27	146	164	580	*b300	170	307	401	97	66	40	38	44
28	154	*175	700	b250	170	283	354	85	59	42	36	34
29	128	162	850	b270	-	305	311	87	50	46	37	41
30	144	144	1,100	b260	-	281	301	83	57	41	40	46
31	156	-	1,000	b250	-	300	-	87	-	35	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,527	213	70	146	0.271	0.31
November	5,697	251	136	190	.353	.39
December	14,188	1,100	130	458	.851	.98
Calendar year 1940	80,041	1,900	27	219	.407	5.53
January	15,800	1,500	250	510	.948	1.09
February	7,547	650	170	270	.502	.52
March	15,872	950	160	447	.831	.96
April	14,597	1,270	253	487	.905	1.01
May	4,889	283	83	158	.294	.34
June	2,474	122	47	82.5	.153	.17
July	1,565	74	35	50.5	.094	.11
August	1,242	65	18	40.1	.075	.09
September	1,219	56	20	40.6	.075	.08
Water year 1940-41	87,617	1,500	18	240	.446	6.05

Peak discharge.- Apr. 20 (1 p.m.) 1,420 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.- No gage-height record Dec. 3 to Jan. 3, Jan. 12-25, Feb. 6 to Mar. 5, Mar. 9-11, 14-19, 21-25, Mar. 31 to Apr. 6, Sept. 29, 30; discharge computed on basis of weather records and records for station at Fergus and for Flint River near Flint.

Shiawassee River near Fergus, Mich.

Location.- Wire-weight gage, lat. 43°15'17", long. 84°06'20", in sec. 22, T. 10 N., R. 3 E., at highway bridge, 1 1/5 miles east of Fergus and 1¾ miles upstream from Bear Creek.

Drainage area.- 637 square miles.

Records available.- January 1940 to September 1941.

Extremes.- Maximum discharge observed during year, 2,190 second-feet Jan. 3; maximum gage height observed, 10.14 feet Jan. 5, affected by ice; minimum discharge observed, 35 second-feet Aug. 11, 13 (gage height, 2.68 feet).

1940-41: Maximum discharge observed, 3,120 second-feet Mar. 31, 1940; maximum gage height observed, 11.60 feet Mar. 30, 1940, affected by ice; minimum discharge observed, that of Aug. 11, 13, 1941.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	197	140	1,250	320	170	344	324	84	49	47	49
2	84	208	140	1,370	320	190	364	290	84	60	43	45
3	84	208	140	2,190	320	350	386	260	84	60	41	51
4	75	208	140	1,680	310	1,100	432	246	90	51	43	49
5	78	186	130	1,200	250	1,000	590	220	72	55	45	49
6	78	175	200	1,000	250	900	590	220	78	53	40	43
7	104	175	220	880	290	760	562	208	84	57	40	43
8	146	175	260	750	270	710	534	220	90	49	45	47
9	175	155	320	620	230	680	508	220	84	55	45	53
10	197	155	400	550	200	700	482	220	78	55	45	57
11	197	155	540	480	180	730	432	208	72	49	35	53
12	165	220	520	480	210	670	386	208	97	53	36	49
13	155	246	450	420	300	600	344	197	67	57	36	51
14	137	232	390	380	800	640	306	197	120	57	51	55
15	165	246	310	350	730	640	290	186	104	55	53	53
16	165	246	440	330	520	540	290	186	90	51	53	51
17	220	246	800	420	430	420	290	197	120	55	57	53
18	220	232	830	480	360	330	324	208	112	49	60	49
19	220	220	700	440	310	330	408	197	128	51	64	43
20	208	220	700	410	280	420	915	165	104	53	57	47
21	208	208	720	400	260	400	1,370	146	97	51	57	47
22	208	186	650	460	240	400	1,100	155	90	53	51	40
23	175	197	590	430	220	420	1,100	146	78	55	53	41
24	175	175	560	460	210	410	1,000	137	72	53	49	41
25	175	186	540	430	200	400	830	137	84	47	49	47
26	175	165	590	390	190	400	650	104	62	45	47	45
27	175	165	650	370	190	400	508	120	72	51	49	43
28	165	165	830	350	180	*370	432	104	67	47	47	53
29	175	170	960	320	-	344	364	84	60	53	49	53
30	175	170	1,310	330	-	344	344	84	60	47	43	55
31	165	-	1,250	330	-	*364	-	84	-	51	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,928	220	75	159	0.250	0.29
November	5,892	246	155	196	.308	.34
December	16,420	1,310	130	530	.832	.96
Calendar year 1940	91,617	3,040	60	250	.392	5.35
January	19,950	2,190	320	644	1.01	1.16
February	8,570	800	180	306	.480	.50
March	16,132	1,100	170	520	.816	.94
April	16,475	1,370	290	549	.862	.96
May	5,678	324	84	183	.287	.33
June	2,584	128	60	86.1	.135	.15
July	1,627	60	45	52.5	.082	.09
August	1,471	64	35	47.5	.075	.09
September	1,455	57	40	48.5	.076	.08
Water year 1940-41	101,182	2,190	35	277	.435	5.89

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 29 to Dec. 25, Jan. 5 to Mar. 28.

Flint River at Genesee, Mich.

Location.- Wire-weight gage, lat. 43°06'25", long. 83°37'00", in sec. 10, T. 8 N., R. 7 E., at highway bridge at Genesee, three-quarters of a mile downstream from Butternut Creek. Datum of gage is 695.84 feet above mean sea level.

Drainage area.- 593 square miles.

Records available.- March 1931 to September 1941.

Average discharge.- 10 years, 280 second-feet.

Extremes.- Maximum discharge observed during year, 1,480 second-feet Jan. 3 (gage height, 18.66 feet); minimum observed, 18 second-feet Sept. 21 (gage height, 12.75 feet).
1931-41: Maximum discharge observed, 3,540 second-feet Feb. 9, 1938 (gage height, 22.52 feet); minimum discharge, about 10 second-feet Aug. 15, 1936.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage read twice daily.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67	111	120	1,250	180	160	365	210	78	90	38	35
2	66	111	130	1,240	190	180	365	184	78	84	39	36
3	67	111	140	1,440	180	220	228	175	66	72	37	34
4	61	111	150	1,280	170	560	246	158	72	70	35	34
5	68	111	150	880	180	660	265	134	73	64	33	33
6	73	111	150	800	160	650	325	104	70	56	31	31
7	90	104	160	720	150	630	465	64	73	51	30	31
8	126	104	200	700	170	600	465	90	64	46	30	32
9	134	104	240	620	180	550	425	142	61	45	34	32
10	118	104	310	550	180	520	405	166	59	47	30	32
11	118	130	460	530	180	600	365	134	57	47	34	29
12	118	210	480	480	170	580	345	90	58	45	36	30
13	118	220	430	410	180	560	405	150	65	43	38	34
14	118	170	390	320	580	540	425	150	79	41	43	30
15	111	150	360	320	540	560	405	150	82	40	83	27
16	134	150	480	300	490	530	285	166	90	39	83	23
17	142	150	600	200	420	470	210	158	90	36	83	22
18	142	150	560	220	370	460	246	142	90	48	59	26
19	142	150	540	220	370	530	365	184	84	49	44	26
20	142	150	540	230	290	*510	490	150	82	41	40	28
21	134	150	580	230	250	530	565	150	76	41	41	24
22	134	158	560	240	200	445	720	134	71	40	41	25
23	118	158	530	240	200	425	750	126	64	35	38	27
24	118	158	500	230	200	445	720	126	61	39	35	28
25	111	150	460	230	180	425	565	118	57	35	34	29
26	111	150	420	220	160	*425	425	111	51	33	40	29
27	104	140	390	210	160	325	345	104	49	36	34	30
28	97	140	480	*200	160	210	285	91	51	36	33	31
29	97	130	700	190	-	228	228	79	64	34	31	28
30	97	120	1,400	180	-	305	228	77	80	34	31	32
31	104	-	1,300	180	-	345	-	75	-	38	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,380	142	61	109	0.184	0.21
November	4,166	220	104	139	.234	.26
December	13,900	1,400	120	448	.755	.87
Calendar year 1940	83,873	2,760	47	229	.386	5.25
January	15,060	1,440	180	486	.820	.94
February	6,840	580	150	244	.411	.43
March	14,178	660	160	457	.771	.89
April	11,926	750	210	398	.671	.75
May	4,092	210	64	132	.223	.26
June	2,095	90	49	69.8	.118	.13
July	1,457	90	33	47.0	.079	.09
August	1,271	83	30	41.0	.069	.08
September	888	36	22	29.6	.050	.06
Water year 1940-41	79,253	1,440	22	217	.366	4.97

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 5 to Mar. 21. No gage-height record Nov.11-20, Nov. 27 to Jan. 1, June 29, 30, Sept. 22, 23, 25, 26; discharge computed on basis of records for station near Flint and weather records.

Flint River near Flint, Mich.

Location.- Water-stage recorder, lat. 43°02'20", long. 83°46'10", in SW¼ sec. 4, T. 7 N., R. 6 E., at sewage-treatment plant 2 miles downstream from Flint. Datum of gage is 678.80 feet above mean sea level.

Drainage area.- 927 square miles.

Records available.- August 1932 to September 1941.

Extremes.- Maximum discharge during year, 2,950 second-feet Jan. 3 (gage height, 7.28 feet); minimum, 14 second-feet Sept. 29.
1932-41: Maximum discharge, 6,970 second-feet Feb. 14, 1938 (gage height, 11.20 feet); minimum, 9.0 second-feet Aug. 7, 1934.

Remarks.- Records fair. Some regulation by reservoirs upstream. City of Flint diverts water above station for municipal and industrial use, but effluent from city sewage-treatment plant which enters river just below gage is included in flow at station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	208	117	1,990	b340	229	512	391	103	126	32	44
2	90	198	185	2,270	364	237	512	292	105	128	30	44
3	86	201	194	2,770	355	1,080	530	237	91	103	28	38
4	86	201	201	2,190	337	1,480	566	225	105	113	34	40
5	74	369	222	1,340	310	*1,190	705	361	101	84	34	38
6	135	233	198	1,130	306	1,190	730	72	91	76	66	34
7	434	190	249	980	301	1,130	705	159	90	72	37	31
8	152	62	346	922	260	950	655	201	88	61	32	40
9	208	98	418	950	158	895	655	237	82	61	34	47
10	229	160	558	895	237	895	620	211	72	100	28	57
11	225	249	730	758	257	950	544	198	66	84	83	37
12	211	350	730	610	265	868	476	102	93	71	70	33
13	182	382	705	615	454	840	400	168	134	55	41	31
14	231	324	600	481	1,040	868	499	160	128	60	41	30
15	283	288	576	384	868	980	458	162	151	61	124	31
16	283	218	868	468	730	1,010	366	162	157	70	57	31
17	301	274	960	526	705	868	404	185	137	60	49	30
18	288	237	950	540	630	643	418	185	a130	64	47	85
19	274	237	895	490	580	544	820	205	a120	56	46	40
20	253	237	*868	445	481	655	1,830	179	111	49	43	31
21	249	229	950	454	368	562	1,480	191	103	58	43	29
22	229	245	922	540	310	522	1,340	357	88	108	40	31
23	233	249	868	553	274	544	1,250	57	103	50	42	32
24	201	237	840	490	265	655	1,190	124	81	51	33	32
25	194	402	785	b450	225	680	1,040	133	74	47	37	30
26	174	104	730	b410	146	655	785	124	71	52	38	28
27	168	198	625	*b380	115	630	680	113	68	57	34	24
28	160	185	812	b360	176	615	535	115	72	81	34	23
29	195	168	1,600	b340	-	595	576	101	88	68	32	24
30	176	171	2,350	b320	-	553	490	97	93	45	31	44
31	171	-	2,190	b310	-	486	-	101	-	44	43	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,261	434	74	202	0.218	0.25
November	6,904	402	62	230	.248	.28
December	23,262	2,350	117	750	.809	.93
Calendar year 1940	127,811	3,750	55	349	.376	5.13
January	25,361	2,770	310	818	.882	1.02
February	10,857	1,040	115	388	.419	.44
March	23,979	1,490	289	774	.835	.96
April	21,791	1,830	396	726	.783	.87
May	5,685	391	57	183	.197	.23
June	2,996	157	66	99.9	.108	.12
July	2,215	128	44	71.5	.077	.09
August	1,365	124	28	44.0	.047	.05
September	1,089	85	23	36.3	.039	.04
Water year 1940-41	131,765	2,770	23	361	.389	5.28

Peak discharge.- Dec. 30 (4 a.m.) 2,510 sec.-ft.; Jan. 3 (12 m.) 2,950 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Raisin River at Monroe and weather records.
b Stage-discharge relation affected by ice.

Flint River near Fosters, Mich.

Location.- Chain gage, lat. 43°17'56", long. 83°55'58", in sec. 6, T. 10 N., R. 5 E., at bridge on Sheridan Road, 1 mile west of Fosters and 1 mile upstream from Birch Run. Datum of gage is 582.22 feet above mean sea level.

Drainage area.- 1,120 square miles.

Records available.- January 1940 to September 1941.

Extremes.- Maximum discharge observed during year, 4,260 second-feet Jan. 3 (gage height, 15.56 feet); minimum observed, 27 second-feet Aug. 6 (gage height, 3.67 feet).
1940-41: Maximum discharge observed, 5,600 second-feet Mar. 30, 1940 (gage height, 17.64 feet, backwater from ice); minimum observed, that of Aug. 6, 1941.

Remarks.- Records good except those for periods of backwater from leaves, which are fair and those for periods of ice effect, which are poor. Gage read twice daily.

Rating tables, water year 1940-41, except periods of ice effect or backwater from leaves (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 3

3.6	22	5.0	204	10.0	1,560
3.7	29	5.5	296	13.0	2,700
3.8	38	6.0	396	15.4	4,100
4.0	59	7.0	630		
4.5	123	8.0	908		

Jan. 4 to Sept. 30

4.5	123	9.0	1,100
5.0	195	11.0	1,700
5.8	331	13.0	2,520
6.8	540	14.7	3,540

Note.- Same as preceding table below 4.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	187	150	2,780	420	240	590	470	116	71	42	39
2	102	204	220	2,660	440	280	665	390	109	83	37	38
3	96	222	230	4,100	430	550	615	313	109	83	40	54
4	96	231	240	3,500	420	1,800	*665	277	109	71	35	48
5	102	277	250	2,700	390	1,650	890	260	109	71	34	36
6	102	418	260	1,700	400	1,450	1,100	410	96	65	28	33
7	187	277	320	1,400	380	1,250	1,020	165	96	71	28	36
8	418	231	390	1,200	360	1,150	865	172	96	59	44	36
9	187	146	500	1,150	320	1,020	815	243	96	65	54	37
10	196	178	640	1,150	290	1,000	765	260	96	77	34	59
11	222	204	800	1,100	320	1,050	715	243	90	77	34	54
12	213	356	960	980	350	1,000	615	226	96	65	34	59
13	196	484	940	860	580	940	540	226	109	59	77	42
14	196	418	800	720	1,500	1,000	492	226	123	54	59	34
15	336	508	750	600	1,300	1,030	590	210	123	54	47	38
16	316	316	980	550	1,100	1,050	515	226	123	54	71	44
17	296	296	1,250	610	940	790	470	226	123	48	71	42
18	277	316	1,200	700	820	*640	492	226	116	54	54	33
19	296	277	1,150	630	760	600	540	226	109	54	46	39
20	277	296	1,250	560	700	660	1,940	243	96	59	48	59
21	258	296	1,320	550	570	700	2,260	210	102	43	43	39
22	240	296	1,320	650	470	640	1,610	226	90	33	46	36
23	222	296	1,190	700	400	600	1,460	370	71	43	48	40
24	204	296	1,120	620	350	*640	1,370	116	59	54	46	47
25	187	296	1,030	560	310	840	1,220	165	59	54	42	44
26	187	222	1,030	520	280	790	990	151	54	54	38	46
27	170	130	1,060	490	250	765	765	151	54	48	36	43
28	162	187	1,160	450	190	740	690	144	54	46	38	41
29	170	204	1,560	420	-	715	515	137	48	59	34	45
30	187	154	2,960	400	-	665	690	123	46	77	39	44
31	196	-	3,140	390	-	640	-	116	-	54	40	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,396	418	96	206	0.184	0.21
November	8,219	508	130	274	.245	.27
December	30,170	3,140	150	973	.869	1.00
Calendar year 1940	148,459	4,500	60	406	.362	4.92
January	35,400	4,100	390	1,142	1.02	1.18
February	15,040	1,500	190	537	.479	.50
March	26,885	1,800	240	867	.774	.89
April	26,469	2,260	470	882	.788	.88
May	7,147	470	116	231	.206	.24
June	2,777	123	46	92.6	.083	.09
July	1,859	83	33	60.0	.054	.06
August	1,367	77	28	44.1	.039	.04
September	1,285	59	33	42.8	.038	.04
Water year 1940-41	163,014	4,100	28	447	.399	5.40

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 1-20, Jan. 4 to Mar. 24. Backwater from leaves on control Oct. 20 to Nov. 5; discharge computed on basis of gage heights, one discharge measurement, and weather records.

Farmers Creek near Lapeer, Mich.

Location.- Staff gage and concrete control, lat. 43°02', long. 83°20', at footbridge at Michigan Home and Training School, 2 miles west of Lapeer, Lapeer County. Datum of gage is 806.48 feet above mean sea level.
Drainage area.- 57 square miles.
Records available.- March 1933 to September 1941.
Extremes.- Maximum discharge observed during year, 134 second-feet Jan. 1; maximum gage height observed, 16.68 feet Mar. 6, affected by ice; minimum discharge observed, 0.6 second-foot Aug. 7, 8 (gage height, 14.92 feet).
1933-41: Maximum discharge observed (revised), 437 second-feet Feb. 15, 1938 (gage height, 18.10 feet); minimum not determined.
Revisions.- The maximum discharge for the water year 1938 has been revised to 437 second-feet Feb. 15 (gage height, 18.10 feet), and that for the water year 1940 to 377 second-feet Mar. 31 (gage height, 17.84 feet), superseding figures published in Water-Supply Papers 854 and 894.
Remarks.- Records good except those below 2.0 second-feet and those for periods of ice effect, which are fair. Occasional regulation at dam above station. Gage read twice daily
Revisions.- Revised figures of discharge, in second-feet, for the high-water periods in water years 1938 and 1940 are shown below. They supersede those published in the Water-Supply Papers 854 and 894.

Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)
1937-38		1937-38		1939-40	
Feb. 7.....	397	Feb. 11.....	149	Mar. 31....	377
8.....	339	14.....	377	Apr. 1....	303
9.....	249	15.....	417	2....	231
10.....	197	16.....	303		

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
February 1938.....	4,869	417	56	174	3.05	3.18
Water year 1937-38...	12,575.6	417	1.0	34.5	.605	8.21
Calendar year 1938...	11,716.1	417	1.0	32.1	.563	7.66
March 1940.....	724.5	377	6.7	23.4	.411	.47
April 1940.....	1,986	303	14	66.2	1.16	1.30
Water year 1939-40...	5,000.5	377	.5	13.7	.240	3.26

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.7	9.9	9.5	126	16	11	46	22	3.4	1.8	2.0	1.4
2	3.5	10	11	112	18	14	51	19	3.1	1.6	1.6	1.0
3	3.5	10	13	e4	19	27	55	18	3.1	1.5	1.6	1.0
4	3.5	11	13	76	17	29	51	17	3.5	1.4	1.4	1.0
5	3.4	11	13	68	15	40	47	15	3.9	1.4	1.0	1.0
6	3.1	10	12	58	14	64	46	12	3.7	1.4	1.0	.8
7	11	9.5	15	50	14	60	47	15	3.5	1.4	.6	.8
8	10	9.1	15	43	13	46	43	15	3.4	1.4	.6	.9
9	10	8.7	16	36	13	39	40	16	2.7	1.4	1.0	1.0
10	12	8.3	22	31	12	40	37	17	2.4	1.4	.8	1.0
11	12	9.9	23	30	11	42	34	16	2.2	1.4	1.4	1.0
12	12	11	27	30	11	40	31	16	2.4	1.6	1.4	1.0
13	10	12	39	26	15	*42	28	14	3.1	1.6	1.4	1.0
14	9.5	14	*44	23	24	41	27	13	3.9	1.5	1.4	.8
15	13	14	35	22	28	40	27	12	3.9	1.4	2.4	.8
16	13	9.5	40	24	33	51	25	12	5.1	1.5	2.4	.8
17	13	12	41	22	32	56	24	14	5.1	1.6	2.4	.8
18	15	12	43	21	29	42	24	14	5.1	2.0	2.4	.8
19	16	12	*57	17	26	27	33	14	4.8	2.0	2.4	.8
20	16	12	62	19	23	27	48	12	4.2	2.0	2.0	.8
21	15	13	55	20	21	25	112	10	3.4	2.0	2.0	.8
22	14	13	48	23	18	24	119	9.5	3.1	1.6	1.6	.8
23	13	14	43	23	16	30	89	9.5	2.9	1.5	1.4	.8
24	12	14	40	23	15	42	68	7.9	2.7	1.4	1.2	.8
25	11	14	36	25	14	*47	52	7.9	2.4	1.4	1.4	.8
26	9.9	12	35	23	13	42	41	7.5	2.2	1.4	1.4	.8
27	8.7	11	37	24	12	31	36	5.7	1.8	1.4	1.4	.8
28	8.3	11	41	*21	11	47	32	4.8	1.5	1.6	1.6	.8
29	8.3	11	62	19	-	43	27	3.9	1.6	2.0	1.5	.8
30	8.7	11	70	18	-	49	25	3.5	2.0	2.0	1.4	1.0
31	8.7	-	112	16	-	46	-	3.6	-	2.0	1.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	310.8	16	3.1	10.0	0.175	0.20
November.....	339.9	14	8.3	11.3	.198	.22
December.....	1,129.5	112	9.5	36.4	.639	.74
Calendar year 1940	6,332.9	377	.5	17.3	.304	4.13
January.....	1,153	126	16	37.2	.653	.75
February.....	503	33	11	18.0	.316	.33
March.....	1,204	64	11	38.8	.681	.79
April.....	1,365	119	24	45.5	.798	.89
May.....	376.7	22	3.5	12.2	.214	.25
June.....	96.1	5.1	1.5	3.20	.056	.06
July.....	49.6	2.0	1.4	1.60	.028	.03
August.....	47.5	2.4	.6	1.53	.027	.03
September.....	26.7	1.4	.8	.89	.016	.02
Water year 1940-41.....	6,601.8	126	.6	18.1	.318	4.31

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 14, Jan. 4-7, Feb. 16 to Mar. 2, Mar. 5-14.

Tittabawassee River at Midland, Mich.

Location.- Water-stage recorder, lat. 40°36', long. 84°15', in NE¼ sec. 28, T. 14 N., R. 2 E., 0.5 mile south of Midland and 1 mile downstream from Chippewa River. Datum of gage is 590.28 feet above mean sea level, datum of 1929.

Drainage area.- 2,400 square miles.

Records available.- March 1936 to September 1941.

Extremes.- Maximum discharge during year, 5,880 second-feet Mar. 24 (gage height, 7.48 feet); minimum, 69 second-feet (regulated) Sept. 18 (gage height, -0.12 foot).
1936-41: Maximum discharge, 21,100 second-feet Feb. 7, 1938 (gage height, 15.72 feet); minimum, 69 second-feet Sept. 27, 1940 and Sept. 18, 1941.

Remarks.- Records good except those for period of no gage-height record, which are fair. Water is diverted from river a short distance above station for industrial use; small part returned to river a quarter of a mile below station; remainder returned 1 mile below and below control. Low flow regulated by power plants above station.

Cooperation.- Gage-height record and records of diversion furnished by Dow Chemical Co.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 2, June 5 to Sept. 8)

0.0	107	2.0	1,140
.3	210	3.0	1,830
.6	343	4.5	3,030
.9	496	6.0	4,380
1.2	669	7.0	5,380

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	591	1,200	460	3,840	1,060	594	4,580	1,270	290	403	164	161
2	943	865	372	4,020	1,110	542	4,880	1,210	319	206	157	166
3	926	714	a500	4,380	1,140	1,270	4,780	725	582	210	157	170
4	525	939	a900	4,680	1,200	1,330	4,580	455	552	199	214	127
5	284	968	a880	3,390	1,280	1,560	4,380	626	342	196	167	127
6	368	1,180	944	2,570	1,190	1,210	4,480	798	406	185	117	120
7	362	1,440	1,030	2,120	903	960	4,200	1,230	548	278	120	156
8	403	1,330	793	1,940	650	825	3,660	1,430	367	203	154	474
9	383	666	1,250	1,890	664	668	3,300	954	243	181	288	1,820
10	448	516	2,160	1,620	592	1,140	2,940	1,140	270	354	156	1,360
11	984	884	1,990	1,350	1,490	2,090	3,030	696	260	311	585	1,040
12	519	1,970	1,760	1,610	921	2,470	2,850	1,140	470	199	323	982
13	292	2,240	1,250	1,570	1,040	2,040	1,750	1,310	794	192	154	854
14	652	1,550	811	1,240	1,690	2,640	1,360	699	949	181	160	630
15	634	1,190	730	1,230	1,240	3,300	1,820	860	437	154	221	346
16	1,060	861	1,840	1,340	951	3,750	1,750	963	422	304	164	466
17	1,210	650	2,490	1,620	1,060	2,500	1,900	787	780	174	174	1,180
18	1,200	1,090	2,970	1,580	1,530	1,470	1,690	506	689	171	252	866
19	710	1,290	3,330	834	900	1,390	2,200	1,000	956	199	424	704
20	484	1,380	3,160	1,280	762	1,790	3,480	970	534	185	305	240
21	724	934	2,780	1,480	1,360	2,180	4,110	920	351	154	171	294
22	964	1,380	2,260	1,860	1,340	1,960	3,480	1,160	636	133	378	605
23	867	1,270	2,570	1,540	548	2,790	3,120	612	515	192	185	295
24	915	872	2,600	1,220	824	4,880	2,870	309	418	167	154	200
25	695	1,200	2,080	783	842	5,280	2,790	358	368	157	154	232
26	637	1,390	2,260	601	992	4,680	2,430	628	322	143	248	246
27	510	1,130	3,660	707	1,130	4,380	1,150	739	565	586	348	175
28	1,030	1,050	3,840	918	794	4,580	994	684	640	286	218	234
29	1,100	1,210	3,930	1,000	-	4,780	954	647	296	560	242	181
30	724	872	4,020	1,280	-	4,780	1,150	400	349	214	197	742
31	704	-	3,930	1,160	-	5,280	-	281	-	192	223	-

Month	Observed				Diversion (second-feet)†	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	21,848	1,210	284	705	62	767	0.320	0.37
November	34,281	2,240	516	1,143	50	1,193	.497	.55
December	63,530	4,020	372	2,049	47	2,096	.873	1.01
Calendar year 1940	402,817	6,820	173	1,101	66	1,167	.486	6.62
January	57,153	4,880	601	1,844	48	1,892	.788	.91
February	29,193	1,690	548	1,043	52	1,095	.456	.47
March	79,609	5,280	542	2,568	53	2,621	1.09	1.26
April	86,658	4,880	954	2,889	56	2,945	1.23	1.37
May	25,507	1,430	281	823	72	895	.373	.43
June	14,670	956	243	489	81	570	.238	.27
July	7,269	586	133	234	82	316	.132	.15
August	6,974	585	117	225	81	306	.128	.15
September	15,213	1,820	120	507	87	594	.248	.28
Water year 1940-41	441,905	5,280	117	1,211	64	1,275	.531	7.22

† Diversion by Dow Chemical Co., for industrial use.
a No gage-height record; discharge computed on basis of recorded range of stage, records for Grand River at Grand Rapids, and weather records.

Salt River near North Bradley, Mich.

Location.- Staff gage, lat. 43°42', long. 84°28', at Pere Marquette Railroad bridge 1½ miles southeast of North Bradley, Midland County.
Drainage area.- 138 square miles.
Records available.- June 1934 to September 1941.
Extremes.- Maximum discharge observed during year, about 1,200 second-feet Mar. 24 (gage height, 9.12 feet, affected by ice); minimum observed, 2.0 second-feet Aug. 8-10 (gage height, 0.36 foot).
1934-41: Maximum discharge observed, 4,460 second-feet (revised) Feb. 7, 14, 1938; maximum gage height, 13.77 feet Feb. 6, 1938 (backwater from ice); minimum discharge observed, 1.9 second-feet July 24, 1934.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Gage read twice daily.
Revisions.- Revised figures of discharge, in second-feet, for the high-water period in the water year 1938, superseding those published in Water-Supply Paper 854, are given herein:

Feb. 7.....3,620
14.....3,620

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
February 1938.....	16,722	3,620	28	597	4.33	4.51
Water year 1937-38.	28,623.5	3,620	3.5	78.4	.568	7.71
Calendar year 1938.	28,251.5	3,620	3.5	77.4	.561	7.61

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	27	20	159	30	24	224	27	11	6.0	4.8	2.4
2	8.4	33	24	252	31	22	*188	24	10	6.8	4.1	2.4
3	8.4	32	23	416	32	27	164	20	10	5.9	3.8	2.9
4	7.8	30	24	324	29	35	134	20	10	5.6	3.2	3.8
5	8.4	27	24	211	24	35	164	18	8.8	5.0	3.2	3.4
6	8.6	25	26	134	25	34	176	18	8.4	5.3	2.5	2.4
7	14	23	32	74	26	33	134	29	7.4	5.6	2.4	2.5
8	12	20	37	64	26	34	101	44	6.5	5.3	2.0	3.8
9	11	18	46	56	26	40	81	36	6.8	4.8	2.0	164
10	11	18	60	48	24	38	72	28	6.8	5.0	2.0	a600
11	10	28	84	44	*24	44	58	24	6.8	5.3	4.5	212
12	9.8	83	*80	45	23	49	62	22	9.6	5.0	10	67
13	9.5	60	53	44	26	60	52	18	13	5.0	6.8	40
14	13	45	45	39	30	100	51	17	13	4.5	7.1	27
15	28	42	42	42	35	250	48	18	16	4.5	7.1	20
16	33	36	60	39	40	400	47	20	14	4.8	8.0	12
17	27	34	270	40	40	300	58	22	11	5.6	6.5	12
18	21	29	290	44	34	200	76	21	9.2	5.6	5.6	12
19	19	25	190	41	28	130	76	18	8.0	5.0	5.0	9.6
20	18	26	130	39	28	95	370	16	6.2	5.0	4.3	9.2
21	18	26	160	37	27	110	224	15	5.9	4.5	4.3	8.4
22	16	32	180	35	27	230	188	14	6.8	4.5	4.3	7.7
23	15	36	180	34	27	600	112	13	7.7	4.5	3.6	7.7
24	15	34	150	35	27	1,100	81	12	7.4	4.5	3.4	7.4
25	13	30	150	33	26	860	62	12	6.8	5.0	2.7	7.7
26	12	25	198	31	24	544	53	12	6.5	5.0	2.7	6.5
27	12	25	211	32	25	480	43	12	5.6	4.5	3.2	8.0
28	11	28	266	30	25	480	35	11	5.3	4.1	2.9	8.8
29	14	30	224	29	-	385	32	10	7.1	4.3	2.4	9.2
30	27	26	185	*30	-	236	28	10	8.4	4.5	2.4	19
31	31	-	172	29	-	248	-	10	-	4.8	2.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	470.5	33	7.8	15.2	0.110	0.13
November.....	953	83	18	31.8	.230	.26
December.....	3,636	290	20	117	.848	.98
Calendar year 1940.....	14,096.1	935	4.4	38.5	.279	3.82
January.....	2,510	416	29	81.0	.587	.68
February.....	789	40	23	28.2	.204	.21
March.....	7,223	1,100	22	233	1.69	1.95
April.....	3,184	370	28	106	.768	.86
May.....	591	44	10	19.1	.138	.16
June.....	260.0	16	5.3	8.67	.063	.07
July.....	157.8	8.0	4.1	5.09	.037	.04
August.....	131.3	10	2.0	4.24	.031	.04
September.....	1,298.8	600	2.4	43.3	.314	.35
Water year 1940-41	21,204.4	1,100	2.0	58.1	.421	5.73

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of lower limit of stage as noted by observer, and weather records.
Note.- Stage-discharge relation affected by ice Dec. 3-25, Jan. 22 to Mar. 24.

Chippewa River near Mount Pleasant, Mich.

Location.- Water-stage recorder, lat. 43°37'35", long. 84°42'30", 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 1941.

Extremes.- Maximum discharge during year, 762 second-feet Sept. 11; maximum gage height, 6.83 feet Feb. 4, backwater from ice; minimum discharge, 34 second-feet July 27; minimum gage height, 2.93 feet May 28.
1930-31, 1932-41: Maximum discharge observed, 3,120 second-feet Feb. 6, 1938 (gage height, 12.02 feet); minimum observed, 19 second-feet Aug. 16, 1936.

Remarks.- Records good except those for periods of ice effect, which are fair, and those for periods of no gage-height record, which are poor. Regulation at low stages by power plant above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a120	188	175	410	240	200	a420	269	132	87	74	64
2	a130	202	203	436	230	200	a430	246	130	104	77	71
3	a125	205	190	554	230	200	a450	237	132	101	90	69
4	a120	202	220	429	220	210	a470	222	118	95	64	71
5	a110	193	210	358	210	230	a500	216	118	93	77	67
6	a120	188	220	350	210	250	a580	208	109	101	71	64
7	a130	182	230	330	200	310	a680	263	109	93	56	67
8	a130	177	239	*320	200	350	a660	332	107	81	79	74
9	a140	179	248	335	200	310	a560	320	107	90	77	268
10	137	179	254	365	200	210	a500	287	107	118	79	608
11	128	209	268	357	200	238	455	257	104	115	62	732
12	125	268	269	280	210	*215	410	237	107	118	127	527
13	97	267	263	301	220	287	395	225	135	98	110	440
14	127	229	230	299	280	371	395	216	161	84	84	377
15	173	218	202	281	310	450	380	205	164	84	122	341
16	200	208	297	294	290	343	365	219	190	79	128	277
17	173	205	442	262	282	236	377	214	161	77	112	266
18	156	208	401	266	270	290	395	205	132	74	95	251
19	157	199	347	246	290	273	410	190	121	71	112	225
20	149	202	356	248	280	272	546	182	112	74	87	216
21	164	214	377	274	270	*a260	638	179	104	79	79	231
22	156	248	368	256	260	a350	561	176	101	79	69	219
23	142	257	368	288	250	a410	500	167	107	79	109	214
24	157	243	338	280	240	a440	410	167	98	74	74	190
25	158	234	317	270	230	a460	374	147	84	77	77	188
26	161	205	411	280	220	a480	350	144	90	59	80	185
27	152	208	500	260	210	a470	314	145	95	54	80	190
28	150	208	506	270	210	a450	308	141	90	64	80	199
29	156	*211	521	250	-	a440	281	138	98	61	77	202
30	179	219	489	*250	-	a420	263	109	98	90	74	219
31	185	-	425	240	-	a430	-	138	-	69	64	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,507	200	97	145	0.349	0.40
November	6,353	268	177	212	.510	.57
December	9,882	521	175	319	.767	.88
Calendar year 1940	78,466	1,030	80	214	.514	7.00
January	9,639	554	240	311	.748	.86
February	6,642	310	200	237	.570	.59
March	10,055	480	200	324	.779	.90
April	13,377	680	263	446	1.07	1.20
May	6,401	332	109	206	.495	.57
June	3,521	190	84	117	.281	.31
July	2,622	118	54	84.6	.203	.23
August	2,646	128	56	85.4	.205	.24
September	7,112	732	64	237	.570	.64
Water year 1940-41	82,757	732	54	227	.546	7.39

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of two discharge measurements, recorded range of stage, records for Grand River at Grand Rapids, and weather records.
Note.- Stage-discharge relation affected by ice Dec. 3-7, Jan. 6-8, Jan. 24 to Mar. 8, Mar. 18.

Pine River at Alma, Mich.

Location.- Water-stage recorder, lat. 43°23', long. 84°39', in sec. 34, T. 12 N., R. 3 W., in Alma, 270 feet downstream from highway bridge. Datum of gage is 717.44 feet above mean sea level, datum of 1929.

Drainage area.- 288 square miles.

Records available.- October 1930 to September 1941.

Average discharge.- 11 years, 159 second-feet.

Extremes.- Maximum discharge during year, 772 second-feet (regulated) Dec. 31 (gage height, 4.73 feet); minimum, about 2 second-feet (regulated) May 10.
1930-41: Maximum discharge observed, 4,070 second-feet Feb. 6, 1938 (gage height, 10.43 feet), from rating curve extended above 2,000 second-feet; minimum observed, about 2 second-feet July 23, 1938, May 10, 1941.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Occasional regulation by dam above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	129	51	280	152	b130	399	130	67	43	60	30
2	55	133	87	416	159	b140	382	126	66	37	56	33
3	53	126	116	468	161	b160	294	121	81	39	47	22
4	56	135	116	*317	142	94	365	117	70	38	43	31
5	52	131	121	294	124	180	341	107	71	38	39	39
6	57	104	128	193	125	169	452	113	69	38	38	39
7	69	109	140	257	134	173	434	283	68	36	37	33
8	72	117	160	317	b140	156	349	221	66	35	36	45
9	87	114	186	301	b140	173	341	130	53	35	36	62
10	89	109	180	264	*b130	327	301	79	51	38	27	102
11	84	143	200	226	b120	342	*256	161	45	38	48	121
12	71	131	200	228	115	*278	228	139	55	41	50	111
13	71	151	193	228	140	357	214	120	71	40	57	87
14	81	160	159	200	160	480	114	114	121	40	56	70
15	91	140	109	160	186	509	87	107	150	39	55	58
16	124	121	72	144	186	434	173	107	131	45	58	53
17	133	122	149	160	180	a350	193	126	99	45	58	46
18	119	122	294	193	175	a290	346	137	91	45	58	43
19	102	116	301	221	117	a250	264	116	70	40	58	43
20	99	105	309	186	109	a240	271	98	70	40	60	44
21	111	116	309	173	124	*b240	286	80	56	42	54	45
22	114	126	325	170	133	278	174	79	50	45	53	44
23	97	138	325	166	144	357	230	89	52	41	49	41
24	79	147	286	b170	b140	462	214	75	46	42	50	35
25	83	138	256	154	130	452	180	68	46	44	158	40
26	84	117	256	144	b130	452	164	67	46	46	54	39
27	79	109	286	159	105	408	159	70	41	46	18	42
28	84	108	317	155	b120	325	160	68	45	50	17	44
29	91	187	365	135	-	357	165	57	43	58	18	43
30	96	134	390	139	-	365	147	57	43	52	32	73
31	115	-	502	146	-	390	-	67	-	58	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,655	133	52	85.6	0.297	0.34
November	3,838	187	104	128	.444	.50
December	6,888	502	51	222	.771	.89
Calendar year 1940	51,800	1,130	19	142	.493	6.68
January	6,766	468	135	218	.757	.87
February	3,921	186	105	140	.486	.51
March	9,318	509	94	301	1.05	1.21
April	7,683	452	87	256	.889	.99
May	3,429	283	57	111	.385	.44
June	2,033	150	41	67.8	.235	.26
July	1,314	58	35	42.4	.147	.17
August	1,496	158	16	48.3	.168	.19
September	1,558	121	22	51.9	.180	.20
Water year 1940-41	50,899	509	16	139	.483	6.57

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Chippewa River near Mount Pleasant.
b Stage-discharge relation affected by ice.

Cass River at Frankenmuth, Mich.

Location.- Water-stage recorder, lat. 43°19'42", long. 83°45'28", on line between secs. 27 and 28, T. 11 N., R. 6 E., at highway bridge 1 mile west of Frankenmuth and 2.6 miles upstream from Dead Creek.

Drainage area.- 848 square miles.

Records available.- February 1908 to March 1909, July 1935 to September 1936, June 1939 to September 1941.

Extremes.- Maximum discharge during year, 2,600 second-feet Dec. 30 (gage height, 11.13 feet); minimum daily, 2 second-feet July 27.
1908-9, 1935-36, 1939-41: Maximum discharge observed, 9,530 second-feet Mar. 16, 1908 (gage height, 20.98 feet, site and datum then in use); minimum daily discharge, 2 second-feet Sept. 28, 1908, July 27, 1941.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, and those below 50 second-feet, which are poor. Flow regulated by mill above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	94	222	1,640	210	200	610	216	22	67	28	a25
2	96	96	132	1,540	150	380	585	82	65	74	89	a60
3	85	151	120	*2,110	170	1,020	*561	57	90	76	41	a30
4	87	96	150	1,990	170	735	550	140	78	27	132	a50
5	52	94	140	1,500	200	900	622	204	56	54	134	a35
6	24	114	150	a1,000	150	870	760	74	53	26	59	a25
7	70	142	269	a600	140	870	1,080	56	55	56	29	a12
8	163	91	247	a500	170	840	990	155	14	88	a45	a20
9	187	59	138	a550	130	a700	660	190	45	96	a30	a27
10	101	61	407	a480	170	a700	561	70	54	98	a15	a35
11	91	100	403	a500	170	800	526	66	65	36	a25	30
12	86	225	384	360	200	740	412	58	54	66	a80	26
13	120	128	a350	270	180	750	293	96	54	29	a40	21
14	101	85	a300	330	900	770	299	61	53	54	a50	17
15	112	176	a250	410	1,000	860	366	42	36	30	a70	18
16	123	193	480	300	850	850	391	169	79	9	a30	18
17	137	77	870	*260	700	780	313	228	84	50	a14	18
18	101	82	840	300	520	720	240	199	137	31	a25	16
19	69	71	810	320	370	660	427	85	129	13	a30	16
20	54	154	685	250	250	750	458	139	87	10	22	16
21	95	296	710	290	200	720	1,020	70	66	28	20	13
22	120	163	710	250	210	700	930	56	50	120	21	8
23	105	84	710	240	130	710	622	64	115	162	46	14
24	84	52	635	260	200	840	526	118	82	68	20	18
25	61	79	598	200	160	840	499	51	81	14	12	a22
26	90	253	573	240	140	760	360	64	25	4	60	a30
27	60	*148	598	280	170	710	88	48	6	2	35	a20
28	74	71	760	200	150	685	199	96	38	71	a27	a16
29	62	99	1,140	230	-	685	267	82	23	139	a30	a20
30	85	92	2,280	140	-	a630	257	96	47	57	a25	a30
31	94	-	2,190	180	-	573	-	90	-	32	a13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,902	187	24	93.6	0.110	0.13
November	3,646	296	52	122	.144	.16
December	18,301	2,280	120	590	.696	.80
Calendar year 1940	85,835	4,140	13	235	.277	3.76
January	17,720	2,110	140	572	.675	.78
February	8,160	1,000	130	291	.343	.36
March	22,718	1,020	200	733	.864	1.00
April	15,472	1,080	88	516	.608	.68
May	3,222	228	42	104	.123	.14
June	1,843	137	6	61.4	.072	.08
July	1,687	162	2	54.4	.064	.07
August	1,297	134	12	41.8	.049	.06
September	706	60	8	23.5	.028	.03
Water year 1940-41	97,674	2,280	2	268	.316	4.29

Peak discharge.- Dec. 30 (11 a.m.) 2,600 sec.-ft.; Jan. 3 (11 p.m.) 2,420 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of available recorded ranges of stage, weather records, records for Flint River near Flint and Cedar River at East Lansing, and typical shape of weekly regulation.
Note.- Stage-discharge relation affected by ice Dec. 3-6, Jan. 12 to Mar. 2, Mar. 11-22.

Sebewaing River (State drain) near Sebewaing, Mich.

Location.- Water-stage recorder, lat. 43°43', long. 83°26', on line between secs. 16 and 21, T. 15 N., R. 9 E., at highway bridge on Rescue Road, 1⅛ miles upstream from East Fork and 1½ miles southeast of Sebewaing. Prior to Apr. 9, wire-weight gage at same site and datum.

Drainage area.- 62 square miles.

Records available.- January 1940 to September 1941.

Extremes.- Maximum discharge observed during year, 426 second-feet Dec. 29; maximum gage height observed, 6.29 feet Mar. 18, backwater from ice; no flow for long periods.
1940-41: Maximum discharge observed, 1,740 second-feet Mar. 29, 1940 (gage height, 8.1 feet); no flow for long periods.

Remarks.- Records good except those below 2 second-feet, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Gage read twice daily Oct. 1 to Apr. 8.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	0.7	79	3	2.5	42	1.4	0.2	0		0
2	0	1.5	.6	164	3	3	31	1.3	.1	0		0
3	0	3.8	.7	224	3	6	*30	1.0	.1	1.1		0
4	0	2.5	.8	66	2.5	10	32	.8	.2	.5		0
5	0	2.0	.9	50	2.5	60	146	.7	.2	.2		0
6	0	1.6	2	41	2.5	55	89	.7	.1	.1		0
7	.3	1.2	5	22	2.5	50	45	1.1	0	a0		0
8	.6	.9	7	12	2.5	45	33	1.6	0	a0		.2
9	.4	.6	9	9	2.5	38	25	2.0	0	a0		.4
10	.3	1.1	11	9	2.5	45	20	1.6	0	a0		0
11	.2	2.2	13	9.5	2.5	60	15	1.3	0	a0		0
12	.1	2.2	14	8.5	2.5	70	11	.9	0	a0		0
13	0	5.9	*13	8	6	90	10	.7	0	0		0
14	.1	3.5	11	7.5	*100	70	9.5	.5	.2	a0		0
15	1.8	2.7	9	7	120	60	e.5	.5	.3	a0		0
16	4.2	2.2	13	6.5	100	55	6.6	.5	.4	a0		0
17	2.5	2.0	26	7	80	65	8.0	.6	1.1	a0		0
18	2.0	2.1	22	7	45	55	8.5	.6	.7	a1		0
19	1.6	2.2	16	8	30	30	12	.5	.5	0		0
20	2.1	2.5	17	7	20	28	22	.3	.3	a0		0
21	1.1	2.4	22	6	15	26	16	.2	.2	a0		0
22	.3	2.2	20	6	10	45	9.2	.3	.1	a0		0
23	.2	2.0	19	7	8	60	7.0	.4	.1	a0		0
24	.2	1.8	17	6	5.5	65	5.5	.4	0	a0		0
25	.2	.5	18	6	4	60	4.2	.3	0	0		0
26	.1	.6	28	4.5	3	55	3.2	.2	0	0		0
27	.1	.9	47	4	2.5	*50	2.8	.1	0	0		0
28	0	.6	92	3	2	*54	2.3	.1	0	0		0
29	0	.6	214	3	-	47	2.0	0	0	0		0
30	.2	.6	183	3	-	35	1.6	.1	0	0		.3
31	.2	-	98	3	-	*31	-	.1	-	0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18.8	4.2	0	0.61	0.0098	0.01
November	55.1	5.9	.2	1.84	.030	.03
December	949.7	214	.6	30.6	.494	.57
Calendar year 1940	3,171.6	680	0	8.67	.140	1.89
January	803.5	224	3	25.9	.418	.48
February	582.5	120	2	20.8	.335	.35
March	1,425.5	90	2.5	46.0	.742	.86
April	657.9	146	1.6	21.9	.353	.39
May	20.8	2.0	0	.67	.011	.01
June	4.8	1.1	0	.16	.0026	.003
July	2.9	1.1	0	.09	.0015	.002
August	0	0	0	0	0	0
September	.9	.4	0	.03	.00048	.0005
Water year 1940-41	4,522.4	224	0	12.4	.200	2.71

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage, and weather records.
Note.- Stage-discharge relation affected by ice Dec. 1-26, Jan. 7 to Mar. 28.

East Fork of Sebewaing River (Columbia drain) near Sebewaing, Mich.

Location.- Water-stage recorder, lat. 43°44', long. 83°24', on line between secs. 10 and 11, T. 15 N., R. 9 E., at highway bridge on Gettel Road, 2¼ miles upstream from mouth and 2½ milee southeast of Sebewaing. Prior to Apr. 1, 1941, wire-weight gage at same site and datum.

Drainage area.- 38 equare miles.

Records available.- January 1940 to September 1941.

Extremes.- Maximum discharge observed during year, 110 second-feet Jan. 3; maximum gage height, 4.93 feet Mar. 17, backwater from ice; no flow for long periods.
1940-41: Maximum discharge observed, 614 second-feet Mar. 29, 1940; maximum gage height, 7.07 feet Mar. 29, 1940, affected by ice; no flow for long periods.

Remarks.- Records good except those below 2 second-feet, which are fair, and those for periods of ice effect, which are poor. Gage read twice daily Oct. 1 to Mar. 31.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 7 to Nov. 29)

0.9	0	1.4	5.6	1.8	28
1.1	.6	1.5	9.3	2.0	47
1.2	1.5	1.6	14	2.2	72
1.3	3.1	1.7	21	2.4	103

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1.2	1	28	1.0	1	18	0.4				
2	0	2.4	1	37	1.4	1.5	14	.4				
3	0	2.6	1	93	1.4	1.5	12	.3				
4	0	2.4	1	81	1.4	2	11	.2				
5	0	2.4	1	45	1.3	40	51	.1				
6	0	1.6	.9	28	1.3	35	51	.2				
7	0	1.3	2.4	14	1.3	30	22	.4				
8	.3	1.1	4	7.0	1.2	25	15	.4				
9	.1	1.0	4	5.1	1.1	20	11	.5				
10	.1	1.4	4.5	4.5	1.1	25	8.2	.6				
11	0	4.0	5.5	4.5	1.2	*35	6.6	.6				
12	0	8.9	9	4.3	1.2	42	4.8	.5				
13	0	9.3	*7	4.3	2	52	4.0	.4				
14	.1	3.1	6	4.3	*40	45	3.5	.3				
15	.7	2.0	5	3.8	60	38	3.5	.2				
16	.7	1.3	9	3.1	53	36	2.6	.2				
17	1.1	1.0	15	3.1	45	44	2.6	.2				
18	.9	.9	11	3.6	25	38	4.3	.1				
19	.7	.9	10	3.5	18	28	4.8	.1				
20	.7	1.3	9	3	13	23	9.3	.1				
21	.5	1.6	13	3	9	20	8.9	0				
22	.5	1.5	12	2.6	6	26	4.5	0				
23	.4	2.4	11	2.2	4.5	30	2.8	0				
24	.4	2.4	9	2.2	3	33	2.0	.2				
25	.3	2.0	8	2.0	2	30	1.4	0				
26	.3	1.8	10	2.0	1.5	26	1.2	0				
27	.2	1.5	21	1.8	1.5	*21	1.0	0				
28	.1	1.2	27	1.3	1.5	*27	.9	0				
29	.1	1.2	39	.9	-	22	.7	0				
30	.5	1	62	.9	-	19	.5	0				
31	.4	-	35	.8	-	14	-	0				

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9.1	1.1	0	0.29	0.0076	0.009
November	66.7	9.3	.9	2.22	.058	.07
December	354.3	62	.9	11.4	.300	.35
Calendar year 1940	1,696.12	220	0	4.63	.122	1.67
January	399.7	93	.8	12.9	.339	.39
February	299.9	60	1.0	10.7	.282	.29
March	829	52	1	26.7	.703	.81
April	283.1	51	.5	9.44	.248	.28
May	6.4	.6	0	.21	.0055	.006
June	0	0	0	0	0	0
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
Water year 1940-41	2,248.2	93	0	6.16	.162	2.20

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 30 to Dec. 5, Dec. 8-26, Jan. 19-21, Feb. 13 to Mar. 27.

Black River near Port Huron, Mich.

Location.- Chain gage, lat. 42°59', long. 82°32', in sec. 2, T. 6 N., R. 16 E., at highway bridge 6 miles west of Port Huron and 10 miles upstream from mouth.

Drainage area.- 634 square miles.

Records available.- April to June 1931, October 1932 to September 1941.

Extremes.- Maximum discharge observed during year, 2,500 second-feet Jan. 3; maximum gage height observed, 13.66 feet Dec. 30, ice jam; minimum discharge observed, 4.6 second-feet Sept. 20; minimum gage height observed, 4.57 feet Sept. 15, 16, 18-20. 1931, 1932-41: Maximum discharge observed, 6,980 second-feet Feb. 7, 1938 (gage height, 19.29 feet), from rating curve extended above 5,200 second-feet; minimum observed, 4.0 second-feet June 22, 1931 (gage height, 4.48 feet).

Remarks.- Records fair, except those for periods of ice effect or no gage-height record, which are poor. Gage read once daily.

Rating tables, water year 1940-41, except periods of ice effect or backwater from leaves and debris (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 30						Dec. 31 to Sept. 30					
4.8	15	5.3	64	5.9	188	4.5	4.3	5.0	32	5.7	149
4.9	22	5.4	79	6.3	311	4.6	7.3	5.1	42	6.0	233
5.0	30	5.5	96	7.3	480	4.7	12	5.2	54	7.6	800
5.2	51	5.6	116	10.1	1,800	4.8	16	5.3	68	9.0	1,360
						4.9	23	5.5	104	11.1	2,250

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	40	81	1,300	102	60	265	125	29	23	16	10
2	22	54	76	1,520	108	70	318	108	28	18	11	9.0
3	20	52	73	2,250	93	100	318	96	27	17	9.8	7.0
4	19	50	70	a1,600	102	510	300	89	32	17	7.7	7.7
5	20	56	61	1,100	82	510	440	82	32	17	7.3	8.1
6	21	52	73	820	93	615	720	76	28	17	9.0	7.3
7	56	48	a90	740	91	650	1,200	76	28	17	11	6.7
8	52	43	104	800	78	545	1,240	73	31	17	11	5.8
9	55	41	134	660	a70	388	580	75	29	14	11	6.4
10	58	41	246	500	62	352	440	67	26	15	10	7.7
11	50	91	398	400	62	400	370	64	22	22	14	7.0
12	43	175	470	330	78	470	335	64	27	17	39	7.0
13	39	162	564	240	117	560	a320	58	33	a15	28	6.4
14	48	108	564	190	250	670	300	54	48	12	21	5.5
15	129	94	641	150	900	740	265	61	127	12	22	4.9
16	88	88	800	*160	780	a800	282	61	102	11	18	4.9
17	100	81	1,100	170	650	a720	300	89	76	11	14	5.5
18	89	72	*1,300	180	450	640	335	82	54	12	12	4.9
19	79	72	1,200	167	300	540	650	96	42	21	14	4.9
20	79	72	950	135	250	450	1,720	76	36	16	12	4.6
21	72	70	700	167	190	335	1,960	71	30	15	11	a6
22	64	67	520	175	150	300	1,120	62	28	14	10	6.1
23	61	74	440	170	140	300	580	58	24	15	11	6.4
24	56	a76	390	154	100	318	405	43	22	15	9.4	6.4
25	50	73	370	142	82	335	318	40	21	14	9.4	7.0
26	48	*67	360	125	76	*318	265	41	20	13	12	6.4
27	44	89	450	114	72	282	218	43	20	12	11	6.4
28	42	64	700	114	66	282	189	36	20	12	9.4	9.0
29	40	67	1,100	100	-	282	154	34	a22	16	7.0	8.1
30	46	70	1,800	100	-	249	142	34	27	28	6.7	9.0
31	43	-	1,600	96	-	233	-	31	-	26	7.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,650	129	17	53.2	0.084	0.10
November	2,208	175	40	73.6	.116	.13
December	17,425	1,800	61	562	.886	1.02
Calendar year 1940	87,658	6,000	14	240	.379	5.14
January	14,869	2,250	96	480	.757	.87
February	5,594	900	62	200	.315	.33
March	13,024	800	60	420	.662	.76
April	16,049	1,960	142	535	.844	.94
May	2,065	125	31	66.6	.105	.12
June	1,091	127	20	36.4	.057	.06
July	501	28	11	16.2	.026	.03
August	402.4	39	6.7	13.0	.021	.02
September	202.1	10	4.6	6.74	.011	.01
Water year 1940-41	75,080.5	2,250	4.6	206	.325	4.39

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Flint River near Flint.

Note.- Stage-discharge relation affected by ice Dec. 16 to Jan. 1, Jan. 5-18, Feb. 14 to Mar. 3, Mar. 11-15, 18-20. Backwater from leaves and debris, Aug. 24 to Sept. 30; discharge computed on basis of gage heights and two discharge measurements.

Clinton River at Mount Clemens, Mich.

Location.- Water-stage recorder, lat. 42°35'45", long. 82°54'35", on Moravian Drive highway bridge, a quarter of a mile downstream from confluence of North and South Branches and half a mile west of Mount Clemens. Auxiliary wire-weight gage 8,500 feet downstream on Gratiot Avenue Bridge. Datum of gages is 570.43 feet above mean sea level, datum of 1929.

Drainage area.- 733 square miles.

Records available.- May 1934 to September 1941:

Extremes.- Maximum discharge during year, 5,460 second-feet Dec. 30 (gage height, 13.93 feet); minimum, about 10 second-feet Sept. 28 (gage height, 3.18 feet).
1934-41: Maximum discharge observed, 11,100 second-feet Feb. 14, 1938 (gage height, 19.64 feet); minimum, that of Sept. 28, 1941; minimum gage height, 2.90 feet Oct. 15, 1934.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Discharge computed by using fall as determined by auxiliary wire-weight gage as a factor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	189	240	1,550	260	190	409	322	139	78	103	57
2	119	210	230	1,440	411	210	314	307	120	71	69	54
3	121	214	210	*2,290	398	400	266	294	129	56	78	58
4	127	183	200	1,560	272	3,210	276	279	126	67	79	59
5	123	142	230	952	260	1,990	757	262	183	60	60	77
6	141	152	300	620	250	1,440	719	257	140	73	77	64
7	243	157	450	700	230	1,060	719	243	134	69	94	58
8	283	146	600	580	210	766	698	238	160	63	83	71
9	213	152	502	510	200	522	609	267	101	86	78	50
10	195	143	726	450	190	498	543	263	101	66	a76	32
11	170	237	858	420	200	517	501	239	76	130	a110	45
12	139	722	661	380	210	561	476	219	101	163	a250	50
13	135	514	991	360	309	551	452	208	151	96	a130	62
14	154	360	657	330	486	*732	429	191	173	83	a90	48
15	278	297	473	350	644	675	403	201	224	76	a170	36
16	296	265	*1,350	340	457	596	389	278	168	69	a140	56
17	245	265	a2,700	550	387	500	634	250	149	71	a110	69
18	246	248	1,840	650	320	400	710	286	121	75	100	48
19	201	237	1,090	600	310	440	1,220	249	112	79	89	58
20	255	257	775	500	290	a380	a4,000	215	106	89	98	53
21	262	255	779	440	270	a340	3,690	184	88	83	74	57
22	232	257	743	480	250	a320	1,580	204	101	82	66	41
23	221	265	688	530	240	a360	1,160	234	91	76	56	42
24	207	242	621	470	220	*400	746	200	88	61	79	44
25	188	238	585	380	230	405	558	171	90	67	170	a90
26	178	*235	555	330	200	390	502	141	87	75	111	40
27	172	198	614	280	190	392	458	131	84	72	114	68
28	176	190	760	260	200	382	400	·119	85	94	97	31
29	175	160	1,720	270	-	402	386	134	76	167	74	25
30	183	200	5,040	250	-	375	353	130	77	179	66	31
31	174	-	3,160	280	-	384	-	116	-	126	57	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,995	296	119	193	0.263	0.30
November	7,350	722	142	245	.334	.37
December	30,346	5,040	200	979	1.34	1.54
Calendar year 1940	142,214	5,040	65	389	.531	7.21
January	19,322	2,290	250	623	.850	.98
February	6,094	644	190	289	.394	.41
March	19,788	3,210	190	638	.870	1.00
April	24,379	4,000	276	813	1.11	1.24
May	6,832	322	116	220	.300	.35
June	3,581	224	76	119	.162	.18
July	2,726	179	56	87.9	.120	.14
August	3,068	250	56	99.0	.135	.16
September	1,574	90	25	52.5	.072	.08
Water year 1940-41	133,057	5,040	25	365	.498	6.75

* Winter discharge measurement made on this day.
a No gage-height record at one of the two gages; discharge computed on basis of gage height at the other of the two gages and weather records.
Note.- Slope-stage-discharge relation affected by ice Nov. 28 to Dec. 8, Jan. 6 to Feb. 1, Feb. 5-12, Feb. 18 to Mar. 3, Mar. 17-19.

River Rouge at Detroit, Mich.

Location.- Chain gage, lat. 42°21'40", long. 83°15'15", on line between secs. 33 and 34, T. 1 S., R. 10 E., in Detroit and 3 miles above Middle River Rouge. Datum of gage is 579.90 feet above mean sea level.

Drainage area.- 194 square miles.

Records available.- November 1930 to September 1941.

Average discharge.- 11 years, 83.2 second-feet.

Extremes.- Maximum discharge observed during year, 1,100 second-feet Dec. 30; maximum gage height observed, 14.15 feet Mar. 4, ice jam; minimum discharge, 11 second-feet Aug. 14 (gage-height, 3.89 feet).

1930-1941: Maximum discharge observed, 3,630 second-feet Feb. 20, 1939 (gage height, 18.87 feet), from rating curve extended above 1,000 second-feet; minimum observed, 2.7 second-feet Aug. 11, 1934 (gage height, 3.50 feet).

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage read once daily.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	32	a70	a350	60	50	73	45	a70	16	14	13
2	22	48	73	370	a120	a60	81	39	65	15	13	13
3	21	a45	67	720	100	300	98	37	45	15	a14	15
4	19	62	62	552	80	800	116	a36	34	14	15	17
5	19	51	66	a340	70	400	240	36	32	14	15	19
6	a40	42	73	250	60	286	a260	42	31	a14	14	16
7	112	35	89	210	53	207	207	48	29	14	14	a15
8	185	27	a130	160	52	155	165	58	a29	17	14	15
9	102	24	196	130	a45	a140	145	69	28	14	15	14
10	45	a60	196	115	47	125	116	62	27	13	a15	14
11	31	125	185	110	47	a130	112	a58	24	18	a16	14
12	21	a200	180	a105	47	a120	102	48	29	19	a15	13
13	a18	a170	160	100	62	a100	a93	45	112	a19	a14	14
14	20	a130	130	66	175	a95	85	48	116	14	14	a15
15	69	a100	a120	*83	274	a110	77	73	a80	12	35	16
16	112	a85	310	83	a170	a130	77	207	58	12	a25	18
17	94	a66	760	130	112	116	145	165	39	12	a19	17
18	58	a74	*370	200	65	102	262	a140	35	13	19	15
19	32	a70	274	a170	80	89	382	112	32	19	17	15
20	a30	73	229	130	85	77	a420	54	30	a16	15	15
21	45	69	229	110	77	62	370	39	29	13	15	a15
22	39	65	a210	130	65	58	274	30	a31	a12	16	15
23	39	62	185	160	a63	a65	185	32	33	a12	14	15
24	35	a59	175	100	58	81	145	33	22	a18	a17	15
25	34	*54	155	85	52	*77	102	a35	20	a15	25	15
26	31	51	145	a74	45	73	81	37	17	a13	29	14
27	a25	45	145	66	45	69	a67	35	17	a14	22	14
28	22	39	165	66	40	62	59	35	17	a13	17	a15
29	20	45	a400	66	-	69	48	30	a17	a12	15	15
30	20	65	1,030	60	-	a67	45	42	16	a13	14	14
31	22	-	482	60	-	65	-	48	-	a14	a13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,404	185	18	45.3	0.234	0.27
November	2,073	200	24	69.1	.356	.40
December	7,061	1,030	52	228	1.18	1.35
Calendar year 1940	33,078	1,030	11	90.4	.466	6.33
January	5,351	720	60	173	.892	1.03
February	2,249	274	40	80.3	.414	.43
March	4,340	800	50	140	.722	.83
April	4,631	420	45	154	.794	.89
May	1,818	207	30	58.6	.302	.35
June	1,164	116	16	38.8	.200	.22
July	449	19	12	14.5	.075	.09
August	529	35	13	17.1	.088	.10
September	450	19	13	15.0	.077	.09
Water year 1940-41	31,519	1,030	12	86.4	.445	6.05

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Cedar River at East Lansing.
Note.- Stage-discharge relation affected by ice Dec. 3-5, 12-14, Jan. 6 to Feb. 13, Feb. 19 to Mar. 5.

Raisin River at Monroe, Mich.

Location.- Water-stage recorder and concrete dam, lat. 41°54'50", long. 83°23'15", at municipal water supply plant in Monroe, 4 miles upstream from mouth. Datum of gage is 570.00 feet above mean sea level (city of Monroe bench mark).

Drainage area.- 1,020 square miles.

Records available.- September 1937 to September 1941.

Extremes.- Maximum discharge during year, 2,630 second-feet Jan. 3 (gage height, 7.42 feet); minimum, 11 second-feet Sept. 19, 20; minimum gage height observed, 3.22 feet Aug. 26 (gates in dam open).
1937-41: Maximum discharge, 5,330 second-feet, Feb. 20, 1939 (gage height, 8.87 feet); minimum, that of Sept. 19, 20, 1941; minimum gage height observed, that of Aug. 26, 1941.

Remarks.- Records good except those below 100 second-feet, which are fair, and those for day of ice effect or period of no gage-height record, which are poor.

Cooperation.- Water-stage recorder inspected by employees of city of Monroe.

Rating table, water year 1940-41, except day of ice effect
(gage height, in feet, and discharge, in second-feet)

5.5	9.0	6.0	316
5.6	34	6.3	705
5.7	78	6.6	1,160
5.8	141	7.0	1,840
5.9	217	7.4	2,630

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	114	148	2,110	293	141	378	353	148	479	31	51
2	90	141	160	2,360	282	169	466	328	302	390	37	46
3	68	102	175	2,570	316	262	584	304	415	282	37	79
4	63	134	176	2,320	282	378	624	316	390	225	34	78
5	73	120	169	1,950	274	597	940	304	304	169	40	102
6	58	120	175	*1,400	293	1,030	1,420	304	234	148	37	151
7	88	114	209	970	252	940	1,530	262	217	165	28	177
8	96	162	201	865	209	692	1,380	272	185	117	25	74
9	102	148	293	763	209	557	1,100	243	162	90	25	94
10	108	114	341	570	235	518	850	252	193	73	34	108
11	114	155	390	570	191	505	705	243	155	108	39	73
12	120	141	415	440	201	531	610	252	155	155	68	53
13	58	127	453	479	217	557	531	262	220	209	73	34
14	118	189	492	272	378	597	531	234	428	217	58	37
15	148	252	570	304	664	651	518	225	440	169	48	32
16	141	243	734	366	895	678	390	234	390	117	37	31
17	114	234	1,210	466	970	b748	638	282	304	77	34	28
18	193	225	1,380	570	453	778	1,290	341	304	73	31	25
19	162	209	1,460	544	341	792	1,920	390	272	77	28	18
20	108	185	1,340	610	341	678	1,660	341	217	92	31	22
21	134	148	1,030	518	316	664	1,460	272	185	66	44	34
22	96	185	821	544	341	*428	1,190	234	174	71	44	29
23	114	177	734	570	304	341	1,020	209	176	70	44	29
24	96	155	651	466	316	390	836	209	243	70	40	40
25	108	169	518	453	262	353	705	177	217	68	a40	37
26	127	155	505	415	202	341	584	155	148	44	a45	31
27	78	177	440	390	209	353	518	155	148	53	a55	28
28	127	169	440	328	177	341	466	108	141	37	a50	22
29	120	177	606	293	-	341	403	148	162	48	52	22
30	114	155	1,620	304	-	328	378	162	278	48	46	17
31	102	-	1,970	293	-	316	-	108	-	40	46	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,316	193	58	107	0.105	0.12
November	4,896	252	102	163	.160	.18
December	19,826	1,970	148	640	.627	.72
Calendar year 1940	102,471	1,970	31	280	.275	3.74
January	25,073	2,570	272	809	.793	.91
February	9,423	970	177	337	.330	.34
March	15,995	1,030	141	516	.506	.58
April	25,625	1,920	378	854	.837	.93
May	7,679	390	108	248	.243	.28
June	7,305	440	141	244	.239	.27
July	4,047	479	37	131	.128	.15
August	1,281	73	25	41.3	.040	.05
September	1,602	177	17	53.4	.052	.06
Water year 1940-41	126,068	2,570	17	345	.338	4.59

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on the basis of one discharge measurement, records for Grand River at Jackson, and weather records.
b Stage-discharge relation affected by ice.

Maumee River at Antwerp, Ohio

Location.- Water-stage recorder, lat. 41°11'56", long. 84°44'40", in sec. 22, T. 3 N., R. 1 E., just downstream from highway bridge 1 mile north of Antwerp, 7 miles downstream from State line, and 10 miles upstream from Marie DeLarme Creek. Datum of gage is 695.49 feet above mean sea level, adjustment of 1912.

Drainage area.- 2,049 square miles.

Records available.- September 1921 to December 1935, April 1939 to September 1941.

Average discharge.- 16 years, 1,468 second-feet.

Extremes.- Maximum discharge during year, 3,720 second-feet June 14 (gage height, 7.32 feet); minimum, 56 second-feet Sept. 30 (gage height, 0.53 foot).
1921-35, 1939-41: 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).

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 27 to Sept. 30)

0.5	57	1.4	251	4.0	1,420
.6	72	1.6	312	5.0	2,060
.8	106	2.0	446	6.0	2,740
1.0	148	2.5	645	7.0	3,480
1.2	197	3.0	879		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	172	254	1,730	501	520	581	471	202	200	97	77
2	114	205	300	1,920	471	432	929	432	367	200	90	77
3	104	197	334	2,460	468	411	1,540	404	482	182	86	88
4	101	182	275	2,670	490	401	1,660	401	566	165	83	86
5	108	205	367	2,250	520	664	1,990	377	2,300	160	82	90
6	97	202	408	1,660	505	1,080	2,600	360	2,740	153	82	101
7	106	197	370	1,340	501	1,110	2,740	360	2,090	167	78	139
8	165	190	404	*1,140	475	980	2,390	380	1,400	177	75	110
9	148	194	374	954	350	758	2,060	387	980	194	72	99
10	150	218	468	904	375	645	1,660	408	735	192	72	97
11	223	205	689	782	425	712	1,300	486	560	180	72	86
12	266	272	758	712	450	1,220	1,060	468	1,250	220	68	85
13	223	254	879	602	581	1,360	904	450	3,100	281	70	83
14	190	341	1,080	602	879	1,140	830	408	3,640	237	70	83
15	197	432	1,220	540	1,660	1,250	689	367	3,330	205	72	80
16	296	560	1,300	520	1,920	1,250	645	377	2,810	155	85	75
17	325	468	1,600	493	1,800	1,140	782	377	2,320	153	88	78
18	251	377	2,180	624	*1,600	1,080	1,060	357	1,800	141	74	83
19	139	341	2,180	854	980	782	1,280	360	1,420	137	72	77
20	237	303	2,060	758	806	689	1,420	397	1,200	130	82	69
21	223	296	1,860	854	750	712	1,540	384	904	114	78	66
22	275	281	1,660	929	700	712	1,600	367	520	118	77	64
23	180	275	1,300	929	650	645	1,420	318	428	120	75	62
24	130	260	1,060	980	800	540	1,220	290	394	112	75	62
25	172	257	879	904	854	540	1,030	251	377	108	83	64
26	205	296	782	782	624	520	830	251	278	104	88	63
27	162	315	712	667	602	512	712	257	234	116	93	63
28	180	296	689	689	540	505	624	226	205	104	101	58
29	174	290	712	581	-	490	560	218	182	97	93	57
30	192	263	929	560	-	478	509	194	184	101	86	57
31	192	-	1,300	512	-	464	-	200	-	102	85	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,649	325	97	182	0.089	0.10
November	8,394	560	172	280	.137	.15
December	29,383	2,180	254	948	.463	.53
Calendar year 1940	370,248	13,500	83	1,012	.494	6.70
January	31,902	2,670	493	1,029	.502	.58
February	21,277	1,920	350	760	.371	.39
March	23,742	1,360	401	766	.374	.43
April	38,165	2,740	509	1,272	.621	.69
May	10,983	486	194	354	.173	.20
June	36,998	3,640	182	1,233	.602	.67
July	4,825	281	97	156	.076	.09
August	2,504	101	68	80.8	.039	.04
September	2,379	139	57	79.3	.039	.04
Water year 1940-41	216,201	3,640	57	592	.289	3.91

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Feb. 8-12, 21-24.

Maumee River near Defiance, Ohio

Location.- Water-stage recorder, lat. 41°17'30" (revised), long. 84°16'50" (revised), in NW¼ sec. 22, T. 4 N., R. 5 E., just upstream from Independence Dam, 150 feet downstream from point of diversion to Miami and Erie Canal, 4 miles downstream from mouth of Auglaize River, and 4¾ miles east of Defiance. Datum of gage is 659.12 feet above mean sea level.
Drainage area.- 5,530 square miles.
Records available.- November 1924 to December 1935, March 1939 to September 1941.
Average discharge.- 12 years (1925-35, 1939-41), 3,410 second-feet (bypass flow in Miami and Erie Canal not included).
Extremes.- Maximum discharge during year, 8,550 second-feet Jan. 4 (gage height, 3.8 feet); minimum, 30 second-feet Sept. 28 (gage height, 1.38 feet).
1924-35, 1939-41: Maximum discharge, 87,000 second-feet Jan. 16, 1930 (gage height, 12.9 feet); minimum, 18 second-feet Aug. 2, 1934 (gage height, 1.24 feet).
Remarks.- Records fair. Flow affected by regulation of Auglaize River at hydroelectric plant of Toledo Edison Co., 3 miles south of Defiance. Diversion into Miami and Erie Canal above etation not included in records; for miscellaneous measurements of this canal, see page 183.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 10 to Dec. 11, and June 20 to July 15)

Oct. 1 to Jan. 4

1.5	154	2.3	1,890
1.6	304	2.6	2,840
1.7	480	3.0	4,360
1.9	880	3.5	6,850
2.0	1,110		

Jan. 5 to Sept. 30

1.4	40	2.3	1,770
1.5	117	2.6	2,710
1.6	226	3.0	4,240
1.7	380	3.2	5,160
1.8	570	3.5	6,830
2.0	1,000		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	178	271	392	5,840	822	570	2,200	1,100	398	736	117	99
2	143	239	357	7,700	844	490	3,130	911	1,290	921	99	81
3	154	206	288	8,260	1,020	911	3,430	799	1,600	799	99	90
4	143	255	271	7,700	1,020	822	4,460	674	2,480	470	99	167
5	143	239	357	4,730	1,140	933	7,340	799	4,640	434	90	214
6	132	206	357	3,240	1,140	1,390	7,680	777	7,290	314	81	117
7	239	222	480	2,510	1,070	1,770	7,680	632	6,040	452	81	226
8	239	206	538	2,010	777	1,570	5,980	844	3,820	282	81	156
9	206	206	735	1,890	632	1,390	3,950	611	2,260	214	72	178
10	339	222	776	1,600	777	1,240	3,280	653	1,710	319	72	136
11	322	339	839	1,490	632	2,610	2,610	611	1,240	416	99	108
12	322	239	1,660	1,070	822	1,950	2,040	777	1,550	214	146	126
13	357	374	2,740	1,140	1,320	2,220	1,740	674	4,980	254	90	117
14	322	538	1,810	822	3,360	2,260	1,550	632	7,680	268	81	146
15	339	596	1,730	715	5,110	2,710	1,340	799	7,680	298	136	108
16	339	596	3,790	756	5,980	2,480	1,600	632	7,230	298	108	81
17	445	673	3,680	1,760	4,680	2,540	2,130	530	5,450	190	90	81
18	480	654	3,640	1,490	3,240	1,860	2,780	674	3,590	255	108	72
19	445	480	3,870	1,240	2,260	1,630	2,780	888	2,960	445	108	81
20	339	427	3,560	1,420	1,360	1,740	3,130	756	2,130	146	178	90
21	304	410	3,020	1,600	1,220	1,770	2,610	715	1,710	146	146	90
22	357	392	2,610	1,690	1,100	1,320	2,450	777	1,390	214	108	90
23	410	410	2,250	1,980	955	1,190	2,380	715	1,020	254	99	72
24	410	339	1,730	1,690	1,190	1,220	2,040	416	694	226	99	72
25	288	357	1,390	1,290	1,070	978	1,710	416	591	178	178	90
26	239	357	1,390	1,220	1,050	1,000	1,360	470	611	202	126	65
27	255	410	1,160	1,340	866	933	1,170	330	570	214	156	58
28	222	339	1,090	978	844	911	1,190	346	591	202	126	51
29	239	357	2,840	1,000	-	822	1,000	363	541	380	117	45
30	239	357	5,640	888	-	866	955	298	416	167	246	65
31	222	-	5,640	866	-	1,000	-	470	-	117	136	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,811	480	132	284		
November	10,916	673	206	364		
December	60,630	5,640	271	1,956		
Calendar year 1940	1,011,293	40,300	113	2,763		
January	71,925	8,260	715	2,320		
February	46,301	5,980	632	1,654		
March	45,096	2,710	490	1,455		
April	87,695	7,680	955	2,923		
May	20,089	1,100	298	648		
June	84,132	7,680	398	2,804		
July	10,025	921	117	323		
August	3,572	246	72	115		
September	3,172	226	45	106		
Water year 1940-41	452,364	8,260	45	1,239		

Maumee River at Waterville, Ohio

Location.- Water-stage recorder, lat. 41°30'00", long. 83°42'46", at highway bridge at Waterville, Lucas County, 3 miles downstream from Tontogany Creek. Datum of gage is 596.33 feet above mean sea level, adjustment of 1912.

Drainage area.- 6,314 square miles.

Records available.- November 1898 to December 1901, August 1921 to December 1935, March 1939 to September 1941.

Average discharge.- 16 years (1921-35, 1939-41), 4,059 second-feet.

Extremes.- Maximum discharge during year, 12,700 second-feet Jan. 3 (gage height, 5.72 feet); minimum, 32 second-feet Sept. 29.
1921-35, 1939-41: Maximum discharge recorded, 75,000 second-feet Jan. 16, 1930 (gage height, 13.60 feet); minimum, that of Sept. 29, 1941.

Remarks.- Records good except those below 150 second-feet and those for period of ice effect, which are fair. Low flow slightly regulated by power plants above station.

Rating table, water year 1940-41 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 3 and July 28 to Sept. 30)

1.4	40	1.8	264	2.7	1,650	4.0	5,350
1.5	70	1.9	372	3.0	2,320	4.5	7,260
1.6	115	2.0	500	3.3	3,100	5.0	9,350
1.7	180	2.4	1,100	3.6	3,980	5.5	11,700

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	222	410	8,480	1,090	1,050	1,810	875	575	a500	174	239
2	188	500	545	9,880	1,030	785	4,270	860	605	f635	148	128
3	174	197	f385	11,900	1,350	755	3,760	815	1,330	976	141	154
4	160	174	375	10,300	1,370	1,230	4,470	800	2,010	785	122	205
5	174	385	400	f5,910	1,410	1,060	9,270	635	3,670	530	128	266
6	197	350	450	a3,900	1,300	1,460	9,580	680	6,860	530	115	307
7	230	141	545	a3,000	1,350	1,880	8,700	785	6,860	436	102	188
8	174	188	590	2,300	1,210	2,040	7,650	650	4,990	436	74	148
9	174	214	695	2,000	1,010	1,730	4,990	770	2,500	329	70	275
10	180	256	905	*1,750	920	1,320	3,890	560	1,990	318	67	247
11	275	637	875	1,700	950	2,390	3,210	605	1,460	385	70	167
12	307	670	1,180	1,500	890	2,800	2,800	635	1,410	385	115	110
13	264	122	3,330	1,200	1,210	2,540	2,200	770	3,140	266	97	115
14	318	195	2,670	1,250	4,250	2,880	1,780	710	7,250	275	97	141
15	410	605	2,270	1,000	6,100	3,240	1,670	665	8,060	329	141	174
16	329	740	4,150	850	7,250	3,640	1,300	890	7,650	372	154	160
17	398	650	5,170	950	6,290	2,580	a2,500	755	6,480	340	128	134
18	410	620	4,470	1,750	3,470	2,110	a2,800	560	4,470	275	92	88
19	423	635	4,300	1,900	2,600	2,800	a3,000	605	3,240	431	106	92
20	462	575	4,270	1,500	*2,000	2,100	a3,200	890	2,440	329	106	97
21	307	436	3,700	1,750	1,900	2,060	a2,900	860	1,930	214	134	97
22	286	545	2,940	1,800	1,800	1,930	a2,600	875	1,590	197	160	92
23	410	385	2,600	2,000	1,700	1,330	h2,420	650	1,330	214	154	102
24	318	449	2,130	2,300	1,600	1,370	h2,270	725	998	286	134	92
25	350	350	1,650	2,000	1,540	1,110	h1,880	530	710	239	230	262
26	264	430	1,390	1,500	1,350	1,080	h1,670	487	650	188	275	118
27	214	755	1,350	1,450	1,330	1,050	1,320	560	650	197	205	45
28	188	575	1,350	1,400	1,110	1,060	1,110	340	620	239	197	40
29	247	449	2,180	1,300	-	1,110	1,140	296	a600	222	214	36
30	423	350	8,640	1,160	-	982	935	230	a540	340	222	47
31	197	-	8,700	1,130	-	1,050	-	545	-	264	340	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,611	462	160	278	0.044	0.05
November	12,800	755	122	427	.068	.08
December	74,615	8,700	375	2,407	.381	.44
Calendar year 1940	1,166,944	48,000	88	3,188	.505	6.87
January	90,810	11,900	850	2,929	.464	.53
February	59,360	7,250	890	2,120	.336	.35
March	54,522	3,640	755	1,759	.279	.32
April	101,095	9,580	935	3,370	.534	.60
May	20,613	890	230	665	.105	.12
June	86,608	8,060	540	2,887	.457	.51
July	11,482	976	188	370	.059	.07
August	4,512	340	67	146	.023	.03
September	4,386	307	36	146	.023	.03
Water year 1940-41	529,414	11,900	36	1,450	.230	3.13

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station near Defiance.
f Computed on basis of partly estimated gage height.
h Computed on basis of tape-gage readings by observer.
Note.- Stage-discharge relation affected by ice Dec. 4-6, Jan. 8-30, and Feb. 19-24.

St. Marys River near Fort Wayne, Ind.

Location.- Water-stage recorder, lat. 41°00', long. 85°08', in sec. 35, T. 30 N., R. 12 E., 130 feet downstream from highway bridge, 4 miles south of Fort Wayne, and 12 miles upstream from mouth.

Drainage area.- 753 square miles.

Records available.- November 1930 to September 1941 in reports of Geological Survey. October 1924 to October 1925 and July to September 1927 in reports of Indiana Department of Conservation.

Extremes.- Maximum discharge during year, 2,970 second-feet June 13 (gage height, 9.50 feet); minimum, 12 second-feet Sept. 30 (gage height, 0.59 foot).
1930-41: Maximum discharge observed, 9,430 second-feet Jan. 17, 1937 (gage height, 16.83 feet), from rating curve extended above 4,000 second-feet; minimum observed, 3.4 second-feet Oct. 19, 1934 (gage height, 0.28 foot).

Remarks.- Records good except those for periods of ice effect or shifting control, which are fair.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	38	56	176	90	80	126	77	318	45	20	20
2	25	42	61	476	95	75	384	79	277	38	20	20
3	25	54	75	681	110	80	429	77	466	32	18	19
4	24	45	58	527	115	95	418	74	2,240	41	17	25
5	24	36	50	360	140	90	771	65	2,610	61	16	25
6	24	33	55	400	160	80	874	62	1,900	81	16	27
7	23	37	49	380	150	80	762	63	1,120	113	16	37
8	24	38	51	300	130	85	629	67	735	119	16	31
9	21	35	54	260	115	82	514	64	527	91	17	31
10	22	34	60	210	105	80	394	55	361	105	16	31
11	22	38	*71	150	110	99	297	50	651	230	18	30
12	21	50	97	115	130	106	230	45	2,490	202	22	26
13	24	53	287	100	170	100	196	43	2,970	140	21	25
14	25	50	277	84	240	104	166	40	2,790	90	21	22
15	24	42	216	*70	350	110	146	38	2,370	82	25	20
16	33	38	380	90	370	105	135	39	1,880	74	30	19
17	29	34	603	120	350	110	166	52	1,410	53	25	18
18	27	31	441	145	330	105	212	101	1,080	40	25	18
19	24	30	318	140	250	100	181	97	846	43	26	18
20	25	30	268	170	230	95	173	86	603	59	25	18
21	44	28	206	220	210	90	159	80	350	45	25	18
22	44	27	156	190	160	85	142	62	218	35	23	17
23	41	27	128	185	130	80	130	49	277	30	23	16
24	36	27	117	150	105	79	119	56	196	32	23	16
25	40	28	105	100	96	76	108	95	126	32	22	15
26	50	30	100	110	*94	75	99	71	96	26	25	15
27	52	33	95	120	80	71	94	52	75	23	32	15
28	46	40	91	105	80	73	88	44	62	22	28	14
29	38	44	90	100	-	73	86	38	52	20	26	13
30	38	53	96	105	-	68	82	39	52	20	24	13
31	38	-	105	98	-	67	-	129	-	20	22	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	958	52	21	30.9	0.041	0.05
November	1,125	54	27	37.5	.050	.06
December	4,816	603	49	155	.206	.24
Calendar year 1940	133,041	4,800	18	364	.483	6.57
January	6,437	681	70	208	.276	.32
February	4,695	370	80	168	.223	.23
March	2,698	110	67	87.0	.116	.13
April	8,310	874	82	277	.368	.41
May	1,989	129	38	64.2	.085	.10
June	29,148	2,970	52	972	1.29	1.44
July	2,044	230	20	65.9	.088	.10
August	683	32	16	22.0	.029	.03
September	632	37	13	21.1	.028	.03
Water year 1940-41	63,535	2,970	13	174	.231	3.14

Peak discharge.- June 5 (7 a.m.) 2,670 sec.-ft.; June 13 (2 p.m.) 2,970 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 5 to Mar. 9, Mar. 16-23. Shifting-control method used Oct. 1 to Dec. 14, Sept. 14-30.

Tiffin River at Stryker, Ohio

Location.- Water-stage recorder, lat. 41°30'05", long. 84°25'50", in SW¼ sec. 5, T. 6 N., R. 4 E., at abandoned electric railroad bridge at west edge of Stryker. Prior to Jan. 18, 1941, staff gage at same site and datum. Datum of gage is 685.5 feet above mean sea level, adjustment of 1912.

Drainage area.- 444 square miles.

Records available.- October 1940 to September 1941. September 1921 to September 1928 at site about 3 miles downstream, published as Tiffin River near Stryker, Ohio.

Extremes.- Maximum discharge during year, 1,140 second-feet Jan. 1 (gage height, 9.24 feet); minimum, 5.0 second-feet Sept. 20; minimum gage height, 0.99 foot Aug. 11. 1921-28, 1940-41: Maximum discharge, 2,160 second-feet Dec. 15, 1927; minimum, that of Sept. 20, 1941.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Staff gage read twice daily prior to Jan. 18.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a20	51	40	1,140	105	55	261	120	52	205	12	7.8
2	a20	55	40	1,120	105	50	418	112	71	124	9.7	7.4
3	a20	54	40	*1,050	105	90	380	105	64	70	8.3	8.3
4	a20	52	43	956	85	350	330	95	59	49	7.4	14
5	a20	52	45	720	70	500	527	86	56	40	7.4	15
6	a25	50	50	518	75	350	685	80	59	32	6.9	24
7	a35	48	60	400	80	250	631	81	56	28	6.5	15
8	a100	48	70	300	70	190	480	88	48	29	6.0	11
9	a70	45	100	*340	65	140	355	95	40	27	6.0	9.2
10	a50	45	150	175	55	150	286	99	42	23	6.0	7.8
11	a40	69	200	170	50	240	236	99	38	22	7.6	6.5
12	a35	130	268	140	85	350	199	89	64	30	14	6.5
13	31	249	405	130	200	318	174	76	79	30	12	6.0
14	28	168	442	120	500	292	160	70	90	23	9.7	6.0
15	55	88	299	105	680	330	140	68	99	21	10	5.8
16	125	108	508	110	560	380	174	75	82	22	11	5.8
17	90	68	*796	150	350	280	568	105	70	20	12	6.5
18	62	62	920	280	200	240	631	102	61	22	11	5.5
19	48	55	*920	310	*110	230	605	88	55	24	10	5.2
20	40	55	*675	250	105	200	580	75	46	21	10	5.2
21	38	55	480	220	100	175	542	64	40	17	8.8	6.0
22	38	56	355	200	90	156	480	62	36	16	8.3	5.8
23	36	64	286	250	85	156	392	58	34	14	7.4	5.8
24	36	71	242	200	80	161	305	52	61	30	7.4	6.5
25	36	72	224	165	75	159	249	49	84	22	9.7	6.9
26	36	*68	199	150	70	148	211	45	66	16	14	7.8
27	36	40	199	135	65	139	180	45	49	17	19	9.7
28	36	35	242	120	60	134	164	40	44	15	15	11
29	40	38	418	115	-	129	149	36	66	20	12	13
30	42	40	832	110	-	125	134	34	124	30	9.7	12
31	49	-	1,030	105	-	126	-	42	-	18	7.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,357	125	20	43.8	0.099	0.11
November	2,091	249	35	69.7	.157	.18
December	10,578	1,030	40	341	.768	.89
Calendar year	-	-	-	-	-	-
January	10,254	1,140	105	331	.745	.86
February	4,280	680	50	153	.345	.36
March	6,593	500	50	213	.480	.55
April	10,626	685	134	354	.797	.89
May	2,335	120	34	75.3	.170	.20
June	1,835	124	34	61.2	.138	.15
July	1,077	205	14	34.7	.078	.09
August	302.6	19	6.0	9.76	.022	.03
September	263.0	24	5.2	8.77	.020	.02
Water year 1940-41	51,591.6	1,140	5.2	141	.318	4.33

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 11, Jan. 7 to Mar. 12, Mar. 18-21.

Bean Creek at Powers, Ohio

Location.- Water-stage recorder, lat. 41°40'40", long. 84°13'50", in NE¼ sec. 24, T. 9 S., R. 1 E., at bridge on U. S. highway 20, 1 mile east of Powers and 2¼ miles up upstream from Iron Creek. Prior to Jan. 18, 1941, wire-weight gage at same site and datum. Datum of gage is 722.6 feet above mean sea level, adjustment of 1912.

Drainage area.- 238 square miles.

Records available.- October 1940 to September 1941.

Extremes.- Maximum discharge during year, 860 second-feet Dec. 30 (gage height, 6.55 feet, from graph based on gage readings); minimum discharge, 6.4 second-feet Sept. 17; minimum gage height, 0.62 foot Aug. 7-10.

Remarks.- Records good except those computed by shifting-control method, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Wire-weight gage read twice daily prior to Jan. 18.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a12	28	30	428	55	35	128	85	66	63	10	8.0
2	a12	29	30	488	55	30	164	80	53	40	9.7	7.7
3	a12	28	30	*524	50	60	138	72	42	31	9.4	8.8
4	a12	27	35	402	45	200	138	60	42	27	9.1	16
5	a12	28	40	267	45	150	311	55	46	24	8.8	20
6	a15	27	45	220	50	115	334	51	44	21	8.5	12
7	a25	27	50	178	45	85	251	58	36	21	8.3	9.7
8	a35	27	60	156	40	75	206	67	31	19	8.0	8.8
9	a25	26	70	*139	35	70	175	70	33	19	8.0	8.3
10	a22	28	90	128	30	60	153	78	28	18	7.7	8.3
11	20	64	115	119	35	65	134	40	31	30	8.5	7.7
12	19	128	114	110	50	75	120	f58	36	29	8.8	7.4
13	17	100	224	100	70	90	114	f51	46	22	8.5	7.4
14	18	71	164	80	320	130	104	f48	79	19	8.3	7.2
15	38	57	122	70	250	267	99	44	64	16	9.7	7.2
16	45	50	486	80	150	206	133	74	54	17	9.1	6.9
17	34	47	608	90	120	178	267	89	47	16	8.8	6.6
18	28	42	*385	170	*95	160	283	71	44	18	8.5	6.9
19	27	40	*283	120	90	150	300	59	38	18	9.4	7.2
20	26	39	*228	100	85	130	376	48	29	16	8.5	7.2
21	25	43	199	90	75	99	368	44	26	16	8.0	6.9
22	24	44	170	85	70	109	300	43	23	15	8.0	6.9
23	23	46	150	120	65	124	220	40	22	16	7.7	7.2
24	22	53	116	100	60	119	192	35	62	19	7.7	7.2
25	22	50	107	90	55	112	164	33	49	16	10	7.2
26	22	39	106	80	50	101	145	34	35	14	10	7.2
27	24	*35	118	70	45	93	129	27	32	13	8.8	8.0
28	24	30	146	65	40	84	119	27	32	13	8.5	8.3
29	25	30	422	60	-	81	111	24	46	12	8.0	8.3
30	27	30	719	55	-	75	96	24	133	12	8.0	9.1
31	27	-	524	55	-	79	-	32	-	11	7.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	719	45	12	23.2	0.097	0.11
November	1,313	128	26	43.8	.184	.21
December	5,966	719	30	192	.807	.93
Calendar year	-	-	-	-	-	-
January	4,839	524	55	156	.655	.76
February	2,176	320	30	77.7	.326	.34
March	3,407	267	30	110	.462	.53
April	5,772	376	96	192	.807	.90
May	1,651	99	24	53.3	.224	.26
June	1,349	133	22	45.0	.189	.21
July	643	63	11	20.7	.087	.10
August	268.0	10	7.7	8.65	.036	.04
September	255.6	20	6.6	8.52	.036	.04
Water year 1940-41	28,357.6	719	6.6	77.7	.326	4.43

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on the basis of weather records.
f Computed on basis of partly estimated gage-height record.
Note.- Stage-discharge relation affected by ice Nov. 27 to Dec. 10, Jan. 12 to Mar. 14, Mar. 18-20. Discharge determined by shifting-control method Oct. 11 to Nov. 26, Dec. 11-15, July 26 to Sept. 30.

Auglaize River near Fort Jennings, Ohio

Location.- Water-stage recorder, lat. 40°56'55", long. 84°15'58", in SE¼ sec. 15, T. 1 S., R. 5 E., at highway bridge 3½ miles northeast of Fort Jennings and 6 miles upstream from Ottawa River. Datum of gage is 713.9 feet above mean sea level, adjustment of 1912.
Drainage area.- 333 square miles.
Records available.- August 1921 to December 1935, October 1940 to September 1941.
Average discharge.- 15 years, 280 second-feet.
Extremes.- Maximum discharge during year, 1,500 second-feet June 4 (gage height, 8.20 feet); minimum, 5.8 second-feet Sept. 4 (gage height, 1.20 feet).
1921-35, 1940-41: 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 fair except those for periods of ice effect or no gage-height record, which are poor. Some diversion from Lake St. Marys by Miami & Erie Canal into Jennings Creek, tributary to Auglaize River above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 9 to Dec. 2)

Oct. 1 to Aug. 14

1.3	12	2.0	61	3.0	202	5.0	632
1.5	20	2.2	89	3.5	285	6.0	870
1.7	32	2.4	125	4.0	385	7.0	1,140
1.9	50	2.7	161	4.5	501	8.0	1,440

Aug. 15 to Sept. 30

1.3	8.0	1.9	39
1.4	11	2.1	59
1.5	14	2.3	87
1.6	19	2.6	141
1.7	24	3.0	202
1.8	31		

Note.- Same as preceding table above 3.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	30	39	226	50	50	150	32	218	54	26	8.9
2	10	35	25	226	55	100	200	40	320	56	24	9.2
3	11	34	24	501	70	200	190	40	276	56	21	7.3
4	11	32	23	*352	90	180	180	40	1,240	61	22	6.5
5	11	28	25	220	85	150	350	39	1,440	60	20	17
6	12	28	27	150	80	130	310	38	888	53	19	21
7	12	25	29	*94	75	120	260	41	398	43	20	18
8	12	28	32	80	70	110	210	45	285	39	28	16
9	12	28	35	65	65	100	170	46	207	44	38	13
10	12	29	40	60	60	110	141	42	142	46	24	13
11	14	29	48	55	55	120	125	41	126	46	17	13
12	14	28	64	50	70	130	110	39	573	43	14	14
13	15	26	80	45	99	150	98	35	1,200	40	11	14
14	16	25	94	40	242	200	88	34	1,110	38	11	14
15	26	25	128	40	745	250	78	36	1,380	32	11	13
16	26	26	128	50	407	200	84	39	948	31	17	13
17	25	24	128	55	242	170	103	43	469	34	16	12
18	26	27	149	65	158	150	114	169	418	38	15	12
19	25	24	126	140	*130	130	123	137	301	45	15	11
20	22	22	94	130	110	110	99	80	187	46	14	12
21	24	23	65	110	100	90	77	62	142	38	13	11
22	22	18	56	100	90	80	62	52	119	31	13	11
23	21	23	49	80	80	70	57	48	99	32	14	10
24	21	23	44	75	75	65	49	53	83	32	13	8.6
25	16	22	41	70	70	60	44	50	70	30	19	8.6
26	24	22	41	65	65	60	40	46	64	40	21	10
27	28	26	36	65	60	60	39	50	58	29	15	11
28	26	28	36	60	55	60	38	41	54	28	14	10
29	25	31	53	55	-	60	35	33	54	24	15	11
30	29	39	213	55	-	60	32	31	62	26	12	13
31	29	-	363	50	-	60	-	44	-	26	8.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	587	29	10	18.9		
November	808	39	18	26.9		
December	2,335	363	23	75.3		
Calendar year	-	-	-	-		
January	3,429	501	40	111		
February	3,553	745	50	127		
March	3,585	250	50	116		
April	3,656	350	32	122		
May	1,586	189	31	51.2		
June	12,931	1,440	54	431		
July	1,231	61	24	39.7		
August	540.9	38	8.9	17.4		
September	362.1	21	6.5	12.1		
Water year 1940-41	34,604.0	1,440	6.5	94.8		

* Winter discharge made on this day.
Note.- No gage-height record Oct. 1-8, Feb. 24 to Apr. 6; discharge computed on basis of weather records and records of station near Defiance. Stage-discharge relation affected by ice Dec. 3-10, Jan. 5 to Feb. 12, Feb. 19-23.

Auglaize River near Defiance, Ohio

Location.- Water-stage recorder, lat. 41°14'15", long. 84°24'02", in NE¼ sec. 9, T. 3 N., R. 4 E., 125 feet downstream from dam and power plant of Toledo Edison Co., a quarter of a mile upstream from Jackson ditch, and 3 miles south of Defiance. Datum of gage is 660.00 feet above mean sea level, adjustment of 1912.

Drainage area.- 2,329 square miles.

Records available.- April 1915 to December 1935, October 1940 to September 1941. May to August 1903 at site at highway bridge 1¾ miles downstream.

Average discharge.- 21 years (1915-35, 1940-41), 1,563 second-feet.

Extremes.- Maximum discharge during year, 5,250 second-feet June 6 (gage height, 9.87 feet); minimum daily, 19 second-feet Nov. 20, 24.
1915-35, 1940-41: Maximum daily discharge, 38,700 second-feet Jan. 15, 1930; minimum, 6 second-feet Oct. 17, 1923.

Remarks.- Records good except those for period of no gage-height record, which are poor. Flow regulated by power plant above station. Some diversion from Lake St. Marys by Miami & Erie Canal into Jennings Creek, tributary to Auglaize River above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a40	38	20	2,180	138	57	1,150	305	328	345	40	33
2	a35	37	118	3,200	247	115	1,320	118	1,200	650	38	32
3	a35	37	22	3,300	406	418	1,290	193	1,220	409	38	32
4	a35	37	27	2,950	460	228	2,550	30	2,320	171	38	74
5	a35	35	26	842	574	242	3,300	160	4,080	242	42	81
6	a30	37	26	776	534	240	3,170	135	4,220	122	45	33
7	a30	33	26	791	444	288	3,100	32	3,240	273	43	204
8	a30	28	27	522	291	302	2,010	270	1,860	88	40	35
9	a80	31	133	504	166	150	864	32	990	42	37	81
10	30	33	60	438	257	286	886	59	676	266	38	37
11	94	37	103	435	238	1,360	810	33	554	129	80	32
12	31	31	1,030	52	334	106	527	184	1,280	112	66	57
13	30	32	734	257	897	135	334	92	3,300	43	33	33
14	31	93	35	208	1,670	254	436	90	3,820	43	35	96
15	46	32	72	208	2,730	934	388	186	3,690	92	62	33
16	33	31	1,390	172	2,780	432	762	262	3,560	154	33	32
17	32	112	283	916	1,640	636	807	30	2,470	48	33	26
18	32	25	156	234	456	824	322	38	1,470	366	35	27
19	32	20	428	42	455	568	592	510	1,040	108	48	27
20	32	19	384	520	606	544	684	276	740	35	136	26
21	33	21	143	715	478	541	331	309	653	37	89	27
22	88	104	266	636	400	242	208	170	506	176	37	26
23	108	20	184	600	161	332	306	309	309	181	37	30
24	63	19	124	410	308	224	211	30	130	35	37	30
25	88	62	43	129	260	258	228	94	104	37	134	50
26	37	20	280	270	281	272	127	186	162	113	40	33
27	37	22	118	530	255	250	72	45	160	38	110	23
28	38	51	45	177	357	236	262	45	408	180	38	26
29	38	21	1,790	244	-	233	133	149	37	248	42	26
30	38	68	2,270	256	-	215	126	31	258	37	183	37
31	38	-	2,390	232	-	318	-	256	-	37	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,379	108	30	44.5		
November	1,186	112	19	39.5		
December	12,733	2,390	20	411		
Calendar year	-	-	-	-		
January	22,746	3,300	42	734		
February	17,813	2,780	138	636		
March	11,238	1,360	57	363		
April	27,806	3,300	72	927		
May	4,659	510	30	150		
June	44,785	4,220	37	1,493		
July	4,857	650	35	157		
August	1,752	183	33	56.5		
September	1,339	204	23	44.6		
Water year 1940-41	152,293	4,220	19	417		

a No gage-height record; discharge based on record of power-plant operation and computed leakage through dam.

Blanchard River near Findlay, Ohio

Location.- Water-stage recorder, lat. 41°03'21", long. 83°41'17", on east line sec. 10, T. 1 N., R. 10 E., at highway bridge 2 miles northwest of Findlay. Datum of gage is 754.55 feet above mean sea level.

Drainage area.- 343 square miles.

Records available.- November 1923 to December 1935, October 1940 to September 1941.

Average discharge.- 12 years (1924-35, 1940-41), 212 second-feet.

Extremes.- Maximum discharge during year, 958 second-feet Jan. 2 (gage height, 4.05 feet); minimum, 1.7 second-feet Sept. 28 (gage height, 0.74 feet).
1923-35, 1940-41: Maximum discharge, 6,320 second-feet Dec. 1, 1927 (gage height, 14.5 feet); minimum, 0.4 second-foot Aug. 26, 27, and Sept. 3, 1934.
The flood of March 1913 reached a stage of 18.5 feet.

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 8 to June 13, June 15-29, July 1-22, and Sept. 8-30)

0.7	2.1	1.2	33	2.6	361
.8	4.2	1.3	45	3.0	533
.9	7.5	1.5	77	3.4	730
1.0	13	1.9	154	3.8	885
1.1	22	2.3	259		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	21	30	559	32	33	131	25	39	300	18	18
2	5.0	8.0	26	650	50	36	188	25	57	150	30	13
3	4.5	9.2	19	792	80	40	173	23	82	82	25	12
4	5.0	9.7	15	*446	75	50	154	22	196	54	21	13
5	5.5	10	13	203	70	62	466	23	285	33	17	31
6	4.0	11	12	*152	60	57	455	20	291	23	12	57
7	4.5	9.7	14	133	55	46	305	23	154	19	8.0	93
8	4.9	9.2	12	106	51	43	200	24	90	66	5.0	43
9	5.8	8.6	12	91	62	46	152	23	57	36	3.0	28
10	5.2	10	12	75	56	48	124	21	43	20	3.5	27
11	4.5	29	12	68	48	62	101	18	35	14	4.0	13
12	6.2	17	60	50	68	68	84	16	41	12	5.5	12
13	4.2	14	137	63	112	60	74	15	119	12	8.0	10
14	4.9	13	103	41	406	84	68	14	564	13	25	7.5
15	35	9.2	86	48	505	116	60	12	384	14	75	8.6
16	6.5	9.2	101	45	285	124	63	17	224	12	150	6.5
17	8.0	8.6	116	74	198	114	68	23	161	8.0	250	7.2
18	6.2	9.7	93	208	104	101	79	77	137	13	150	6.5
19	5.8	8.6	75	216	*108	75	81	79	108	9.2	60	5.8
20	5.5	9.7	54	188	95	70	88	43	65	72	35	4.5
21	5.5	9.2	43	112	74	60	70	27	46	48	20	3.6
22	6.5	9.7	34	129	62	56	56	20	35	29	14	5.2
23	5.5	7.5	32	108	57	48	44	19	29	25	10	4.5
24	6.6	8.0	26	56	50	48	40	16	24	18	9.7	4.5
25	8.0	9.2	22	48	52	46	36	18	21	13	25	4.5
26	7.2	10	22	40	46	45	35	15	14	10	30	4.0
27	6.8	13	24	37	45	45	30	12	12	7.0	132	2.9
28	6.8	11	23	34	41	45	29	12	16	5.0	73	2.0
29	9.7	13	315	32	-	45	26	5.2	223	10	45	2.3
30	8.6	22	902	31	-	45	26	5.2	699	20	33	3.8
31	8.6	-	812	30	-	46	-	33	-	19	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	216.7	35	4.0	6.99	0.020	0.02
November	347.0	29	7.5	11.6	.034	.04
December	3,257	902	12	105	.306	.35
Calendar year	-	-	-	-	-	-
January	5,042	850	30	163	.475	.55
February	2,947	505	32	105	.306	.32
March	1,863	124	33	60.1	.175	.20
April	3,506	466	26	117	.341	.38
May	725.4	79	5.2	23.4	.068	.08
June	4,251	699	12	142	.414	.46
July	1,166.2	300	5.0	37.6	.110	.13
August	1,317.7	250	3.0	42.5	.124	.14
September	453.9	93	2.0	15.1	.044	.05
Water year 1940-41	25,092.9	902	2.0	68.7	.200	2.72

* Winter discharge measurement made on this day.

Note.- No gage-height record Oct. 1-7, July 23 to Aug. 22; discharge computed on basis of records for Portage River at Woodville and Sandusky River near Upper Sandusky. Stage-discharge relation affected by ice Jan. 25 to Feb. 7, Mar. 3, 4.

Portage River at Woodville, Ohio

Location.- Water-stage recorder, lat. 41°26'55", long. 83°21'41", in sec. 28, T. 6 N., R. 13 E., at highway bridge in Woodville. Datum of gage is 615.14 feet above mean sea level, adjustment of 1912.

Drainage area.- 433 square miles.

Records available.- July 1928 to December 1935, October 1939 to September 1941.

Extremes.- Maximum discharge during year, 2,600 second-feet Dec. 30 (gage height, 7.46 feet); minimum, 1.7 second-feet Sept. 30 (gage height, 1.89 feet).

1928-35, 1939-41: Maximum discharge, 9,150 second-feet Jan. 15, 1930 (gage height, 12.96 feet); minimum, 0.3 second-foot Aug. 26, 1931; minimum gage height, 1.60 feet July 25, 26, 1934.

Flood of March 1913 reached a stage of 17 feet, from information furnished by local residents.

Remarks.- Records good except those for periods of shifting control, which are fair and of ice effect, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	22	63	1,500	60	45	168	70	113	220	29	4.4
2	6.4	29	150	1,610	80	46	770	70	133	124	46	3.4
3	6.0	47	60	2,040	100	57	476	68	94	62	35	3.3
4	6.4	36	75	1,040	100	65	338	61	95	38	18	4.4
5	7.2	25	55	300	90	70	1,000	62	109	26	10	5.5
6	7.2	18	40	200	80	80	1,000	58	121	20	6.6	6.9
7	7.6	17	35	150	75	65	528	51	88	15	4.4	17
8	7.2	18	35	120	60	40	358	55	62	18	3.8	27
9	6.4	14	30	100	55	45	269	101	51	24	3.4	15
10	6.0	14	30	80	50	50	206	115	47	19	3.1	10
11	7.2	22	35	*66	35	67	159	92	40	13	3.3	8.5
12	11	58	60	60	40	159	128	67	39	16	4.0	7.6
13	12	84	784	55	125	184	109	44	83	29	3.3	7.6
14	12	52	506	50	600	220	99	38	70	21	3.3	6.6
15	19	34	244	60	1,130	338	95	36	54	12	7.3	4.4
16	55	25	390	57	483	352	88	34	40	13	7.6	3.8
17	47	21	770	80	250	300	92	36	45	26	9.1	3.1
18	29	18	416	325	175	210	109	35	47	57	8.5	2.7
19	21	17	250	382	225	225	113	29	40	49	7.3	2.7
20	18	14	184	175	*160	155	117	24	31	31	48	2.5
21	16	14	154	200	100	120	99	18	25	19	4.0	2.9
22	14	14	119	150	90	100	83	16	20	12	3.6	2.7
23	13	15	95	120	80	79	73	13	23	8.5	3.4	2.5
24	11	16	78	100	70	70	67	10	27	7.6	3.8	2.4
25	10	13	72	75	60	71	64	11	26	6.9	6.4	2.4
26	10	14	68	70	60	71	62	11	20	5.8	11	2.2
27	13	17	61	65	55	71	64	8.0	14	5.5	19	2.2
28	14	13	61	60	50	73	64	6.9	11	4.4	13	2.3
29	16	16	544	58	-	75	68	5.5	19	4.8	9.6	1.9
30	18	17	2,440	56	-	75	75	5.5	133	9.5	7.6	1.9
31	19	-	2,040	55	-	73	-	28	-	13	5.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	453.6	55	6.0	14.6	0.034	0.04
November	733	84	13	24.4	.056	.06
December	9,984	2,440	30	322	.744	.86
Calendar year 1940	91,940.7	4,010	1.5	251	.580	7.90
January	9,459	2,040	50	305	.704	.81
February	4,738	1,130	35	169	.390	.41
March	5,651	352	40	118	.273	.31
April	6,941	1,000	62	231	.533	.59
May	1,281.9	115	5.5	41.4	.096	.11
June	1,720	133	11	57.3	.132	.15
July	930.0	220	4.4	30.0	.069	.08
August	305.0	46	3.1	9.84	.023	.03
September	169.8	27	1.9	5.66	.013	.01
Water year 1940-41	40,366.3	2,440	1.9	111	.256	3.46

Peak discharge.- Dec. 30 (12 m.) 2,600 sec.-ft.; Jan. 3 (6 a.m.) 2,360 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 2-10, Jan. 5-15, 20-31, Feb. 1-14, 17-28, Mar. 4-10, 17-22.

Sandusky River near Bucyrus, Ohio

Location.- Water-stage recorder, lat. 40°48'13", long. 83°00'21", in NE¼ sec. 10, T. 3 S., R. 16 E., at highway bridge 1½ miles west of Bucyrus and 12 miles downstream from Loss Creek.

Drainage area.- 89.8 square miles.

Records available.- August 1925 to November 1935, July 1938 to September 1941.

Average discharge.- 13 years, 75.5 second-feet.

Extremes.- Maximum discharge during year, 2,120 second-feet Dec. 29 (gage height, 7.14 feet); minimum, 0.4 second-foot Sept. 29; minimum gage height, 0.66 foot July 24.
1925-35, 1938-41: Maximum discharge observed, 6,900 second-feet Dec. 14, 1927 (gage height, 9.15 feet); minimum, that of Sept. 29, 1941.
Flood of March 23, 1913, reached a stage of 14.5 feet, from floodmarks.

Remarks.- Records good except those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	13	b15	238	47	17	39	7.5	18	8.1	6.2	2.5
2	3.8	6.3	b14	420	99	18	68	7.2	9.9	5.2	17	2.5
3	4.0	6.3	b13	268	b80	b30	52	6.6	12	4.5	5.0	3.3
4	4.0	5.8	b12	*131	b60	b150	48	6.0	71	4.0	2.0	4.0
5	3.6	5.2	12	75	b45	b80	88	6.0	76	3.6	2.4	4.7
6	3.8	4.7	11	b50	b40	b50	77	6.0	38	3.8	2.2	7.8
7	5.2	5.2	11	b40	b50	b43	55	10	23	4.5	1.7	4.7
8	5.2	3.1	11	b35	b38	b40	45	9.9	17	5.0	1.8	3.8
9	4.7	2.5	13	b31	b35	b38	37	12	13	4.7	1.8	3.6
10	4.7	4.0	13	b29	b32	38	33	11	10	4.7	1.4	4.0
11	4.7	13	12	b27	b34	54	29	8.8	8.5	4.5	2.9	3.1
12	4.7	15	44	b25	b50	79	26	6.9	16	3.3	11	3.8
13	4.5	11	259	b24	b200	59	22	6.0	76	2.2	27	5.2
14	5.4	6.6	100	b23	511	75	21	4.2	66	4.0	9.6	3.3
15	.15	3.6	56	b23	352	106	18	4.7	53	4.7	52	2.7
16	4.0	2.2	173	b25	120	87	20	13	92	3.6	137	2.7
17	9.7	1.6	207	120	b75	b60	19	8.1	73	3.1	32	2.5
18	8.1	4.2	79	287	b55	b45	22	10	47	6.4	10	2.5
19	7.2	5.0	60	132	b45	b35	21	9.2	27	10	8.8	2.7
20	4.7	6.0	51	64	b40	b32	17	7.5	19	28	6.9	2.0
21	4.5	4.7	43	53	*38	b30	14	6.0	14	8.8	5.8	1.6
22	4.2	5.2	36	b50	33	b29	13	7.2	11	3.8	4.2	1.6
23	6.0	5.2	31	b48	29	29	12	8.8	8.8	2.0	3.6	1.6
24	5.8	5.8	26	b46	26	33	11	9.5	5.8	1.4	2.4	1.8
25	6.3	4.7	24	b42	b23	43	9.9	6.9	4.0	2.4	7.4	1.6
26	6.0	16	23	b40	b21	38	9.5	5.8	3.8	1.8	6.9	1.6
27	6.0	31	25	b39	b19	34	8.8	5.5	3.6	2.5	7.5	1.0
28	6.3	44	54	b38	b18	35	8.8	4.5	5.5	2.4	6.0	.6
29	9.2	24	1,180	b38	-	36	8.5	4.5	7.0	3.1	4.2	.6
30	8.5	17	1,160	39	-	31	8.1	2.7	4.7	6.9	3.3	.6
31	7.2	-	340	41	-	29	-	17	-	7.1	2.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	180.3	15	3.3	5.82	0.065	0.07
November	281.9	44	1.6	9.40	.105	.12
December	4,108	1,180	11	133	1.48	1.71
Calendar year 1940	27,570.0	2,400	1.1	75.3	.839	11.44
January	2,541	420	23	82.0	.913	1.05
February	2,515	811	18	89.8	1.00	1.04
March	1,503	150	17	48.5	.540	.62
April	860.6	88	8.1	28.7	.320	.36
May	239.0	17	2.7	7.71	.086	.10
June	833.6	92	3.6	27.8	.310	.35
July	160.1	28	1.4	5.16	.057	.07
August	392.9	137	1.4	12.7	.141	.16
September	84.0	7.8	.6	2.80	.031	.03
Water year 1940-41	13,699.4	1,180	.6	37.5	.418	5.68

Peak discharge.- Dec. 29 (12 p.m.) 2,120 sec.-ft.; Feb. 14 (2 p.m.) 913 sec.-ft.
* Winter discharge measurement made this day.
b Stage-discharge relation affected by ice.

Sandusky River near Upper Sandusky, Ohio

Location.- Water-stage recorder, lat. 40°51'02", long. 83°15'23", in sec. 21, T. 2 S., R. 14 E., at highway bridge three-quarters of a mile upstream from Rock Run and 2 miles northeast of Upper Sandusky.

Drainage area.- 299 square miles.

Records available.- October 1921 to December 1935, January 1938 to September 1941.

Average discharge.- 17 years, 242 second-feet.

Extremes.- Maximum discharge during year, 3,180 second-feet Dec. 30 (gage height, 7.00 feet); minimum, 1.3 second-feet Sept. 24 (gage height, 0.93 foot).

1921-35, 1938-41: Maximum discharge, 8,900 second-feet Dec. 15, 1927 (gage height, 10.5 feet); minimum, 0.9 second-foot Sept. 24, 1939; minimum gage height, 0.67 foot Sept. 6, 7, 1934.

Flood in June 1937 reached a stage of 14.3 feet, from marks in gage well.

Remarks.- Records good except those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	21	62	949	b80	b64	90	32	29	79	16	11
2	6.9	25	50	1,050	b110	b64	161	35	47	47	21	8.5
3	6.4	40	44	1,200	b130	b70	166	28	40	35	21	8.5
4	6.9	26	b40	*671	b140	b130	140	26	208	27	21	6.4
5	5.9	19	b38	b400	b120	b200	301	25	411	23	14	6.9
6	6.4	16	b36	b260	b100	b160	321	25	231	19	9.0	6.9
7	7.4	16	35	b190	b80	b130	208	32	130	36	5.9	9.0
8	4.8	14	34	b155	b150	b115	155	34	87	19	5.3	11
9	6.4	11	30	b130	b175	b108	124	32	63	16	3.2	12
10	6.9	12	28	b110	b130	106	106	30	49	11	3.7	9.5
11	6.9	20	29	b100	b100	106	106	28	38	13	4.3	6.4
12	5.3	25	42	b88	163	126	90	27	92	66	10	6.4
13	6.4	47	290	b82	234	142	79	24	177	35	7.9	5.3
14	5.9	35	462	b80	1,050	124	71	21	224	19	13	5.9
15	11	27	211	b83	1,420	163	65	19	183	12	66	5.3
16	14	21	237	87	602	221	65	25	313	9.5	140	3.5
17	27	19	549	105	338	192	68	30	363	7.4	165	3.7
18	16	17	355	538	b260	b155	73	49	228	13	73	3.7
19	10	14	198	564	b215	b130	74	29	124	46	38	3.7
20	14	13	150	b400	b185	b122	68	27	81	41	23	2.6
21	17	13	124	b250	*b165	99	60	24	58	28	17	3.5
22	15	17	108	b185	b135	89	49	22	44	27	12	2.9
23	14	18	92	b150	b110	81	46	19	35	19	9.5	1.8
24	8.5	18	82	b125	b95	74	42	26	29	12	8.5	1.4
25	9.0	16	76	b115	b82	79	40	23	25	9.5	12	2.1
26	10	20	73	b105	b73	87	38	19	20	7.4	39	2.9
27	16	57	70	b97	b68	86	35	15	16	6.9	25	4.0
28	15	82	97	b92	b65	81	34	13	15	5.3	24	4.3
29	14	81	820	b87	-	82	35	11	72	6.9	23	4.3
30	15	62	2,850	b83	-	82	35	9.0	177	16	21	4.8
31	12	-	1,920	b80	-	78	-	18	-	18	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	324.8	27	4.8	10.5	0.035	0.04
November	822	82	11	27.4	.092	.10
December	9,232	2,850	28	298	.997	1.15
Calendar year 1940	80,230.7	4,870	2.1	219	.732	9.97
January	8,611	1,200	80	278	.930	1.07
February	6,595	1,420	65	236	.789	.82
March	3,546	221	64	114	.381	.44
April	2,945	321	34	98.2	.328	.37
May	777.0	49	9.0	25.1	.084	.10
June	3,609	411	15	120	.401	.45
July	729.9	79	5.3	23.5	.079	.09
August	866.3	165	3.2	27.9	.093	.11
September	168.2	12	1.4	5.61	.019	.02
Water year 1940-41	38,226.2	2,850	1.4	105	.351	4.76

Peak discharge.- Dec. 30 (10 p.m.) 3,180 sec.-ft.; Feb. 15 (3 a.m.) 1,680 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Sandusky River near Mexico, Ohio

Location.- Water-stage recorder, lat. 41°02'39", long. 83°11'42", in sec. 13, T. 1 N., R. 14 E., at highway bridge 3 miles upstream from Honey Creek and 4½ miles north of Mexico.

Drainage area.- 776 square miles.

Records available.- March 1923 to December 1935, July 1938 to September 1941.

Average discharge.- 15 years, 544 second-feet.

Extremes.- Maximum discharge during year, 4,280 second-feet Dec. 31 (gage height, 10.73 feet); minimum, 4.0 second-feet Sept. 25, 26, 29, 30 (gage height, 1.50 feet).
1923-35, 1938-41: Maximum discharge observed, 15,200 second-feet Mar. 22, 1927 (gage height, 19.9 feet); minimum observed, 4 second-feet Aug. 25, 1928, and Sept. 25, 26, 29, 30, 1941.
Flood in June 1937 reached a stage of 22.5 feet, according to information furnished by local residents.

Remarks.- Records good except those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	39	145	3,650	200	130	172	72	105	646	137	31
2	18	41	125	2,640	236	120	353	72	130	630	120	27
3	18	45	120	2,580	365	130	392	71	137	244	70	25
4	19	54	115	1,900	400	200	358	70	212	132	53	20
5	18	55	109	988	375	300	645	67	731	102	42	20
6	16	54	105	503	335	400	875	64	955	80	35	26
7	14	51	86	380	315	375	699	68	592	67	29	30
8	14	46	76	315	328	200	470	72	422	61	25	28
9	14	41	68	275	407	185	342	76	270	65	23	25
10	13	40	62	245	392	180	278	78	174	54	22	23
11	13	45	60	*230	350	183	231	76	129	50	19	21
12	14	42	72	205	265	202	211	74	142	46	33	18
13	14	48	165	190	328	213	183	72	868	169	55	16
14	14	55	619	180	918	234	158	68	1,110	122	41	14
15	18	70	702	170	2,340	255	145	64	998	76	86	11
16	25	76	407	180	1,740	315	137	64	895	60	302	9.3
17	33	60	568	185	863	339	148	71	1,020	46	288	8.8
18	30	51	975	595	475	275	174	76	737	44	200	7.7
19	25	44	583	1,160	350	240	178	137	454	71	113	7.2
20	26	41	361	700	330	215	166	112	275	115	74	6.7
21	29	36	278	400	*320	190	146	86	178	93	54	5.8
22	28	35	234	350	270	172	134	74	129	65	44	5.8
23	30	34	195	315	235	156	112	70	101	57	36	5.8
24	30	37	168	300	210	143	102	72	83	49	29	5.8
25	31	37	146	275	185	136	93	64	70	41	27	4.6
26	35	39	132	265	170	137	86	71	60	34	25	4.6
27	40	42	125	250	155	146	82	71	53	30	93	4.6
28	42	68	127	240	140	145	78	60	46	28	93	4.6
29	34	200	657	225	-	143	76	54	49	50	62	4.3
30	30	191	3,380	217	-	145	74	48	130	169	49	4.3
31	33	-	4,120	206	-	141	-	48	-	109	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	737	42	13	23.8	0.031	0.04
November	1,717	200	34	57.2	.074	.08
December	15,085	4,120	60	487	.628	.72
Calendar year 1940	196,501.3	10,200	5.8	537	.692	9.42
January	20,314	3,650	170	655	.844	.97
February	12,997	2,340	140	464	.598	.62
March	5,245	400	120	201	.259	.30
April	7,298	875	74	243	.313	.35
May	2,242	137	48	72.3	.093	.11
June	11,255	1,110	46	375	.483	.54
July	3,625	646	28	117	.151	.17
August	2,320	302	19	74.8	.096	.11
September	424.9	31	4.3	14.2	.018	.02
Water year 1940-41	84,259.9	4,120	4.3	231	.298	4.03

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 2-4, Jan. 7-15, 20-30, Feb. 3-7, 18-28, Mar. 1-10, 18-21.

Sandusky River near Fremont, Ohio

Location.- Water-stage recorder, lat. 41°18'28", long. 83°09'32", in sec. 17, T. 4 N., R. 15 E., at highway bridge 2½ miles downstream from Wolf Creek and 3½ miles southwest of Fremont.

Drainage area.- 1,248 square miles.

Records available.- November 1923 to December 1935, July 1938 to September 1941. November 1898 to March 1901 at site 4 miles downstream.

Average discharge.- 15 years (1923-35, 1938-41), 841 second-feet.

Extremes.- Maximum discharge during year, 6,650 second-feet Dec. 30; maximum gage height, 5.35 feet, ice jam, Feb. 9; minimum discharge, 5.0 second-feet Sept. 27, 28 (gage height, 0.80 foot).

1923-35, 1938-41: Maximum gage height, 11.1 feet Jan. 15, 1930 (discharge, not determined); maximum gage height, 11.4 feet (ice jam) Mar. 3, 1940; minimum discharge, that of Sept. 27, 28, 1941.

Remarks.- Records good except those for period of no gage-height record, which are fair, and those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	52	218	5,460	293	b210	286	130	82	320	134	39
2	36	57	b175	4,270	321	b200	826	126	a100	839	152	34
3	36	63	b150	4,270	429	212	761	118	a150	545	118	32
4	36	57	b140	3,050	625	260	677	110	a300	253	79	32
5	34	66	b135	1,730	655	b350	1,490	106	a800	162	63	34
6	39	69	b130	1,100	536	b550	1,770	98	1,230	122	49	36
7	39	69	b125	737	470	b450	1,350	102	965	95	42	29
8	32	69	b120	645	b600	b350	880	110	564	86	36	29
9	36	63	b115	574	b1,000	b300	625	118	439	72	34	32
10	34	63	110	517	b800	b270	498	114	321	72	26	32
11	32	69	102	*400	b650	266	400	114	216	76	24	29
12	34	82	143	314	b550	293	336	110	196	69	32	26
13	39	79	314	299	498	321	299	102	760	63	52	26
14	34	72	749	286	974	367	260	98	1,530	137	63	22
15	46	76	1,120	273	2,880	426	229	95	1,450	126	63	19
16	79	82	880	253	b2,750	517	207	98	1,180	88	162	15
17	60	92	965	273	b1,500	b540	212	95	1,250	79	329	19
18	44	85	1,250	681	b750	b500	240	95	1,230	63	280	19
19	44	79	1,040	b1,400	b600	b450	293	110	761	54	185	15
20	60	76	635	b1,150	b500	b380	293	152	470	69	110	17
21	52	79	461	b665	b440	b350	253	130	299	130	79	15
22	46	66	367	b575	b390	299	218	102	207	106	60	13
23	46	66	321	b510	b350	253	196	88	162	76	49	11
24	42	66	273	b470	b315	229	166	79	126	66	42	8.4
25	49	57	229	b435	b280	218	152	79	102	54	34	10
26	49	57	212	b400	b260	218	143	76	88	46	34	7.7
27	54	66	190	b380	b240	218	138	76	82	42	29	5.6
28	54	79	190	b360	b225	224	134	79	79	34	54	5.6
29	52	88	1,410	b345	-	224	130	72	122	44	85	8.4
30	57	218	6,300	b330	-	224	130	63	229	101	60	8.4
31	54	-	6,300	314	-	224	-	66	-	224	49	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,365	79	32	44.7	0.036	0.04
November	2,262	218	52	75.4	.060	.07
December	24,669	6,300	102	802	.643	.74
Calendar year 1940	324,362	15,100	15	886	.710	9.66
January	32,466	5,460	253	1,047	.839	.97
February	19,941	2,880	225	712	.571	.59
March	9,893	550	200	319	.256	.30
April	13,592	1,770	130	453	.363	.40
May	3,111	152	63	100	.080	.09
June	15,542	1,530	79	518	.415	.46
July	4,312	839	34	139	.111	.13
August	2,608	329	24	84.1	.067	.08
September	629.1	39	5.6	21.0	.017	.02
Water year 1940-41	130,610.1	6,300	5.6	358	.287	3.89

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for stations near Bucyrus, Upper Sandusky, and Mexico.

b Stage-discharge relation affected by ice.

Cuyahoga River at Old Portage, Ohio

Location.- Water-stage recorder, lat. 41°08'04", long. 81°32'49", at Old Portage, Summit County, at highway bridge, 1¼ miles downstream from Little Cuyahoga River and 4 miles northwest of Akron.

Drainage area.- 405 square miles.

Records available.- September 1921 to December 1935, March 1939 to September 1941.

Average discharge.- 16 years (1921-35, 1939-41), 426 second-feet.

Extremes.- Maximum discharge during year, 3,040 second-feet July 7 (gage height, 8.57 feet); minimum, 28 second-feet July 6, 7 (gage height, 0.37 foot).
1921-35, 1939-41: Maximum discharge, 3,820 second-feet Apr. 5, 1929 (gage height, 10.1 feet); minimum, 25 second-feet Dec. 7, 11, 1934.

Remarks.- Records fair. Diurnal fluctuation caused by power plants above station. Flow regulated by Lake Rockwell, about 16 miles above gage, where a mean of 37 second-feet was diverted for municipal supply of city of Akron. Sewage returned to river below station.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 12 to Sept. 30 for discharges above 104 second-feet)

0.4	29	1.1	121	3.0	638
.5	36	1.4	177	4.0	990
.7	56	1.7	245	5.0	1,390
.8	70	2.0	330	6.0	1,810

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	194	226	1,560	390	282	427	106	151	94	126	81
2	108	178	242	1,520	372	318	427	106	153	100	49	134
3	108	135	359	1,310	382	342	414	44	139	83	65	90
4	84	128	309	1,110	337	458	398	39	216	45	136	235
5	69	165	316	858	331	464	457	78	230	38	89	141
6	48	149	294	721	379	652	488	112	180	32	87	94
7	111	151	367	647	436	773	452	155	183	614	91	48
8	110	147	450	573	408	821	443	139	231	422	104	129
9	107	119	466	500	351	725	406	151	246	159	46	139
10	66	116	450	452	397	607	362	48	169	136	39	180
11	106	232	435	389	376	594	323	36	148	100	176	102
12	67	221	523	332	381	599	283	105	263	106	175	a90
13	54	199	803	337	465	546	271	92	286	52	79	a80
14	91	190	789	308	730	564	300	90	203	135	87	a65
15	183	207	755	316	710	623	321	123	233	63	516	a55
16	107	304	990	324	747	628	304	156	335	261	223	88
17	92	246	1,270	397	788	613	225	118	255	159	216	88
18	88	290	932	413	697	499	207	106	226	446	175	91
19	68	259	823	433	642	484	138	171	175	612	192	48
20	63	181	755	348	563	534	180	149	131	378	157	78
21	47	115	654	399	501	513	174	136	84	357	139	47
22	142	178	558	447	435	501	178	140	82	501	113	38
23	91	273	486	756	400	518	160	158	110	484	121	92
24	85	259	432	798	346	598	140	102	105	359	97	81
25	81	294	368	729	339	677	138	87	71	284	129	67
26	71	286	348	716	321	720	65	143	77	145	118	83
27	42	220	346	723	306	720	84	118	44	112	112	84
28	64	174	500	628	322	666	97	88	85	146	114	41
29	109	182	1,140	543	-	597	110	106	78	161	108	62
30	108	310	1,810	475	-	513	100	57	107	165	73	80
31	72	-	1,640	425	-	482	-	64	-	183	51	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,782	183	42	89.7		
November	6,102	310	115	203		
December	19,835	1,810	226	640		
Calendar year 1940	174,537	2,830	42	477		
January	19,487	1,560	308	629		
February	12,852	788	306	459		
March	17,631	821	282	569		
April	8,102	488	65	270		
May	3,323	171	36	107		
June	4,995	335	44	166		
July	6,932	614	32	224		
August	4,003	516	39	129		
September	2,711	235	38	90.4		
Water year 1940-41	108,755	1,810	32	298		

Peak discharge.- Dec. 17 (9 a.m.) 1,190 sec.-ft.; Dec. 30 (4 p.m.) 1,900 sec.-ft.; June 12 (4:30 p.m.) 1,640 sec.-ft.; July 7 (7-8 p.m.) 3,040 sec.-ft.; July 18 (9 p.m.) 2,300 sec.-ft.; Aug. 15 (8 a.m.) 1,810 sec.-ft.

a No gage-height record; discharge computed on basis of records for station at Independence.

Cuyahoga River at Independence, Ohio

Location.- Water-stage recorder, lat. 41°23'44", long. 81°37'54", in T. 6 N., R. 12 W., at highway bridge 1 mile northeast of Independence. Datum of gage is 584.14 feet above mean sea level (levels by city of Cleveland).

Drainage area.- 709 square miles.

Records available.- September 1903 to July 1906, September 1921 to May 1923, September 1927 to December 1935, March 1940 to September 1941.

Average discharge.- 10 years (1921-22, 1927-35, 1940-41), 638 second-feet.

Extremes.- Maximum discharge during year, 6,570 second-feet Dec. 29 (gage height, 14.2 feet); minimum, 52 second-feet Sept. 22, 23 (gage height, 2.40 feet).
1921-23, 1927-35, 1940-41: Maximum discharge, 10,800 second-feet Jan. 19, 1929 (gage height, 18.9 feet); minimum, 14 second-feet Nov. 30, 1930; minimum combined discharge of river and canal, 48 second-feet Aug. 29, 1933.

Remarks.- Records good except those for periods of ice effect, which are fair. A small amount of water from Tuscarawas River is diverted into this basin at Portage Lakes. Water is diverted 6 miles above station, at Brecksville, into the Ohio Canal and carried past station; measurements of canal made as follows:

Date	Second-feet	Date	Second-feet	Date	Second-feet
Oct. 21	48.9	Feb. 17	50.5	June 12	49.8
Nov. 30	52.4	Mar. 17	50.7	July 15	50.2
Dec. 18	51.5	Apr. 15	55.8	Aug. 16	59.5
Jan. 21	45.7	May 26	46.2	Sept.15	57.5

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	160	895	2,450	b615	b400	770	178	231	171	242	86
2	166	426	542	2,890	b710	*b370	724	184	250	144	186	96
3	138	243	536	2,450	b640	923	702	172	239	154	106	152
4	139	194	411	1,790	b570	2,050	590	116	381	134	104	252
5	113	212	463	1,360	b530	1,110	961	97	485	85	182	234
6	9e	232	413	1,110	b560	b900	913	149	286	78	136	216
7	79	212	640	b950	b800	b1,000	841	198	266	101	128	136
8	136	215	81e	b815	b700	b1,050	747	288	288	1,430	130	80
9	144	206	672	b710	b620	b1,000	656	274	276	405	136	158
10	142	179	626	b630	b560	b900	581	228	239	248	82	178
11	110	250	584	b570	b590	b1,000	542	130	211	293	62	178
12	145	396	1,000	b500	b630	b1,000	456	102	215	242	339	130
13	109	288	2,240	b440	1,060	b900	422	171	389	184	180	126
14	89	278	1,360	b420	2,280	1,140	414	156	443	113	125	114
15	221	270	1,140	b400	1,740	1,180	443	210	502	193	721	74
16	226	336	1,520	b420	1,410	1,160	418	470	936	179	570	132
17	164	339	*1,680	b630	*1,310	1,110	422	338	550	302	287	122
18	163	315	1,410	b950	1,060	*b820	429	254	362	44e	222	115
19	150	331	1,180	b730	957	b730	486	208	284	2,040	236	113
20	136	328	1,080	b550	841	b750	355	234	230	770	227	78
21	120	267	961	*b500	747	b800	316	210	198	529	192	95
22	117	212	817	b900	679	b800	336	204	166	516	172	62
23	192	330	724	1,900	612	794	304	228	132	590	160	67
24	152	357	634	1,410	559	889	299	215	170	426	145	110
25	143	331	586	1,210	b520	961	243	164	160	355	138	104
26	140	329	516	1,010	b480	961	241	148	134	243	171	90
27	128	449	546	b920	b450	961	153	197	133	176	164	108
28	85	356	1,240	b830	b420	913	170	186	138	159	147	92
29	124	286	4,160	b750	-	817	192	152	252	190	144	67
30	191	358	4,320	b670	-	724	194	158	156	265	139	92
31	157	-	3,060	b640	-	679	-	110	-	441	108	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,323	226	79	139		
November	8,683	449	160	289		
December	36,774	4,320	411	1,186		
Calendar year	-	-	-	-		
January	31,505	2,890	400	1,016		
February	22,630	2,280	420	808		
March	28,792	2,050	370	929		
April	14,320	961	153	477		
May	6,127	470	97	198		
June	8,682	936	132	289		
July	11,604	2,040	78	374		
August	6,079	721	62	196		
September	3,657	252	62	122		
Water year 1940-41	183,176	4,320	62	502		

Peak discharge.- Dec. 13 (4 a.m.) 3,040 sec.-ft.; Dec. 29 (9 p.m.) 6,570 sec.-ft.; Jan. 2 (6 p.m.) 3,420 sec.-ft.; Mar. 4 (3 a.m.) 3,180 sec.-ft.; July 8 (5:30 a.m.) 2,780 sec.-ft.; July 19 (6 a.m.) 3,300 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Little Cuyahoga River at Akron, Ohio

Location.- Water-stage recorder and sharp-crested weir, lat. 41°03'34", long. 81°28'32", at foot of Seiberling Street, Akron, Summit County, half a mile downstream from mouth of Springfield Lake outlet. Datum of gage is 997.41 feet above mean sea level.

Drainage area.- 42.0 square miles.

Records available.- July 1920 to December 1935, March 1939 to September 1941.

Average discharge.- 17 years, 34.1 second-feet.

Extremes.- Maximum discharge during year, 652 second-feet July 7 (gage height, 3.02 feet); minimum, 5.5 second-feet Nov. 10 (gage height, 0.12 foot).
1920-35, 1939-41: Maximum discharge not determined; no flow June 24, July 14, 1923 because of regulation above etation.

Remarks.- Records fair. Some water is pumped from below station and returned to stream above station. Amount of diversions not known.

Cooperation.- Gage-height record furnished by Goodyear Tire & Rubber Co.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 18-29, Mar. 12-31, May 30 to June 1, June 3, 4, 15, 16, July 7-9, 15-21, Aug. 11, 12, 15, 16, Sept. 3)

0.2	10.6	0.8	85.4
.3	19.2	1.0	120
.4	29.7	1.3	179
.6	55.2		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a19	32	36	38	f21	23	27	20	24	13	18	13
2	a20	26	22	47	f23	23	21	17	17	13	16	17
3	a20	16	19	39	f20	38	17	13	20	13	15	23
4	a21	17	23	28	f24	54	22	14	36	11	22	23
5	a21	17	24	22	f24	31	34	20	26	11	21	23
6	a22	17	23	27	28	26	33	21	17	12	17	20
7	22	17	33	26	38	22	29	28	16	134	17	14
8	21	17	27	26	30	22	21	28	13	117	18	17
9	20	17	22	24	27	24	23	24	15	30	16	17
10	19	17	20	21	23	29	22	a24	14	18	13	24
11	19	39	19	21	23	36	19	a23	14	16	29	21
12	17	26	49	20	31	26	16	a22	17	15	33	18
13	16	19	66	21	63	27	17	a21	20	13	17	17
14	18	17	30	20	87	30	21	21	19	20	15	16
15	27	18	22	19	50	29	21	21	31	34	103	19
16	17	17	52	21	34	30	22	21	34	84	47	17
17	17	17	39	33	32	24	21	17	21	34	21	17
18	17	21	27	37	28	21	18	13	17	82	17	16
19	17	20	21	26	29	26	16	20	15	160	16	14
20	19	22	21	24	27	27	18	20	15	50	15	14
21	20	20	20	21	29	20	27	19	14	32	15	14
22	18	19	19	35	29	17	24	22	13	26	17	17
23	18	18	21	44	28	17	23	24	16	22	13	13
24	18	19	20	26	28	20	22	16	16	20	11	13
25	17	21	18	21	28	19	19	11	14	19	17	12
26	15	26	22	21	27	17	16	17	13	24	15	17
27	17	39	28	27	27	17	15	17	13	23	17	17
28	19	27	57	26	24	17	21	16	20	21	17	14
29	24	22	142	24	-	16	21	15	23	23	f14	17
30	28	22	90	24	-	18	20	26	16	26	11	15
31	21	-	47	f24	-	21	-	31	-	27	10	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	604	28	15	19.5		
November	642	39	16	21.4		
December	1,079	142	18	34.8		
Calendar year 1940	12,193	396	12	33.3		
January	833	47	19	26.9		
February	882	87	20	31.5		
March	767	54	16	24.7		
April	646	34	15	21.5		
May	622	31	11	20.1		
June	559	36	13	18.6		
July	1,143	160	11	36.9		
August	643	103	10	20.7		
September	509	24	12	17.0		
Water year 1940-41	8,929	160	10	24.5		

Peak discharge.- Dec. 29 (6 p.m.) 192 sec.-ft.; July 7 (4:30 p.m.) 652 sec.-ft.; July 16 (12:30 a.m.) 161 sec.-ft.; July 18 (7:30 p.m.) 314 sec.-ft.; (11 p.m.) 307 sec.-ft.; Aug. 15 (7 a.m.) 227 sec.-ft.

a No gage-height record; discharge interpolated.

f Computed on basis of partly estimated gage-height record.

Chagrin River at Willoughby, Ohio

Location.- Water-stage recorder, lat. 41°37'51", long. 81°24'13", at city water works, 800 feet downstream from East Branch, 1 mile southeast of Willoughby, Lake County, and 5 miles upstream from mouth.

Drainage area.- 251 square miles.

Records available.- July 1925 to November 1935, October 1939 to September 1941.

Average discharge.- 12 years, 280 second-feet (not including diversion).

Extremes.- Maximum discharge during year, 5,960 second-feet Dec. 29 (gage height, 8.54 feet); minimum daily, 13 second-feet Sept. 25.

1925-35, 1940-41: Maximum discharge, 20,500 second-feet June 26, 1931 (gage height, 9.90 feet, site and datum then in use); minimum, 3.0 second-feet July 25, 26, 1934.

Flood of Mar. 23, 1913, reached a stage of 17.3 feet, present datum, from flood-marks.

Remarks.- Records good except those for periods of ice effect, which are poor. Water is diverted just above station for municipal supply of city of Willoughby.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	58	882	632	197	110	378	70	51	49	95	21
2	36	138	475	1,260	266	120	340	66	53	39	47	21
3	34	110	225	1,120	220	350	245	64	46	25	31	20
4	32	77	180	564	160	2,200	209	56	83	29	25	21
5	31	64	160	275	150	800	284	56	147	26	22	37
6	26	68	150	230	200	400	361	55	93	26	20	44
7	28	66	350	215	250	275	296	64	62	46	17	34
8	34	58	639	210	215	250	216	105	51	417	17	28
9	36	51	324	206	200	225	170	108	44	194	16	23
10	34	51	274	193	180	200	161	108	39	86	18	25
11	31	85	236	190	170	450	161	81	36	53	20	23
12	31	229	886	184	160	550	136	68	46	104	58	22
13	29	152	2,030	178	350	300	120	62	70	56	58	20
14	29	108	735	158	500	375	112	62	62	44	37	18
15	47	91	390	164	900	500	108	106	70	24	104	17
16	64	88	705	155	400	500	100	361	133	29	181	17
17	53	86	717	645	250	450	118	226	86	70	75	18
18	55	118	*422	1,140	*140	*280	248	138	58	46	46	17
19	49	152	292	500	125	325	288	105	46	309	37	17
20	51	150	232	270	115	350	193	83	40	115	34	16
21	47	197	209	*215	110	450	150	73	37	60	29	16
22	44	167	181	250	108	500	158	62	31	42	26	14
23	40	130	164	2,030	105	522	138	70	31	36	25	14
24	39	112	147	668	103	532	120	68	29	31	23	17
25	37	108	138	386	100	450	105	60	26	28	29	13
26	36	95	133	259	100	332	100	55	25	26	77	14
27	34	144	147	210	100	270	88	47	23	21	44	14
28	36	187	*649	200	100	242	81	44	25	21	32	16
29	34	*158	3,500	197	-	219	75	42	171	19	28	16
30	42	147	3,000	197	-	190	73	40	80	22	25	17
31	47	-	988	193	-	216	-	40	-	362	22	-

Month	Observed				Diversion† (mean sec.-ft.)	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	1,203	64	26	38.8	1.53	40.3	0.161	0.19
November	3,445	229	51	115	1.49	116	.462	.52
December	19,560	3,500	133	631	1.43	632	2.52	2.90
Calendar year 1940	129,219	3,990	18	353	1.50	354	1.41	19.23
January	13,294	2,030	155	429	1.43	430	1.71	1.97
February	5,974	900	100	213	1.42	214	.853	.89
March	12,933	2,200	110	417	1.52	419	1.67	1.92
April	5,332	378	73	178	1.53	180	.717	.80
May	2,645	361	40	85.3	1.71	87.0	.347	.40
June	1,794	171	23	59.8	1.91	61.7	.246	.27
July	2,455	417	19	79.2	1.98	81.2	.324	.37
August	1,318	181	16	42.5	2.06	44.6	.178	.21
September	610	44	13	20.3	1.87	22.2	.088	.10
Water year 1940-41	70,563	3,500	13	193	1.66	195	.777	10.54

Peak discharge.- Dec. 13 (1 a.m.) 3,290 sec.-ft.; Dec. 29 (10 p.m.) 5,960 sec.-ft.; Jan. 23 (1:30 a.m.) 2,870 sec.-ft.; Mar. 4 (3 a.m.) 3,980 sec.-ft.

* Winter discharge measurement made on this day.

† Diversion for municipal supply of city of Willoughby.

Note.- Stage-discharge relation affected by ice Dec. 3-7, Jan. 5-8, 19-22, 27, 28, Feb. 3 to Mar. 22.

Grand River near Madison, Ohio

Location.- Water-stage recorder, lat. 41°44'26", long. 81°02'48", at highway bridge half a mile upstream from Griswold Creek and 2 miles south of Madison, Lake County. Datum of gage is 674.47 feet above mean sea level, adjustment of 1912.

Drainage area.- 587 square miles.

Records available.- July 1922 to December 1935, February 1938 to September 1941.

Average discharge.- 16 years, 609 second-feet.

Extremes.- Maximum discharge during year, 5,500 second-feet Dec. 13 (gage height, 7.75 feet); minimum, 0.8 second-foot Aug. 7, 8 (gage height, 0.57 foot).
1922-35, 1938-41: Maximum discharge, 16,400 second-feet Jan. 19, 1929 (gage height, 12.0 feet); practically no flow July 31, Aug. 1-2, 1934.

Remarks.- Records fair except those for periods of ice effect, which are poor.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 27 to June 4, June 11, 12, June 22 to Aug. 15, Aug. 23-25, Aug. 31 to Sept. 30)

Oct. 1 to Dec. 29

0.9	9.5	1.8	94	5.0	1,640
1.0	13.2	2.0	135	5.5	2,090
1.1	17.7	2.4	243	6.0	2,660
1.2	23.6	2.8	379	7.0	4,070
1.3	31.0	3.2	544	7.5	4,930
1.4	39.5	3.6	740		
1.6	62	4.0	96e		

Dec. 30 to Sept. 30

0.5	1.0	1.4	49	3.5	728
.6	2.9	1.7	94	4.0	1,010
.7	5.5	2.0	158	4.5	1,320
.8	8.7	2.4	271	5.1	1,720
1.0	17.0	2.7	376		
1.2	29.5	3.0	496		

Note.- Same as preceding table above 5.1 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	25	1,660	2,540	369	237	580	57	20	20	9.5	21
2	22	62	2,310	2,540	418	259	S62	44	18	17	8.7	19
3	19	86	1,290	2,600	a390	387	570	47	17	17	8.1	17
4	18	86	794	1,720	a350	2,040	418	39	24	15	4.7	19
5	17	94	688	1,040	a400	2,600	395	40	38	12	2.5	29
6	15	79	553	728	a450	1,800	980	38	54	12	1.4	21
7	15	64	916	a575	a500	b1,250	1,010	41	107	17	1.0	16
8	16	54	2,310	a475	454	b900	754	50	105	12	1.0	14
9	14	50	1,720	422	539	b600	557	56	62	9.8	1.4	14
10	14	61	1,400	a380	607	b500	380	44	41	9.5	1.4	13
11	15	100	1,290	a350	654	630	265	50	20	8.7	35	12
12	13	472	1,750	336	535	1,160	206	47	77	8.7	56	11
13	12	483	4,930	328	479	b750	161	42	90	8.7	39	9.5
14	11	318	3,070	288	1,550	b1,000	141	36	240	8.7	18	8.1
15	14	207	1,430	358	3,750	b1,400	119	40	474	13	30	6.5
16	12	147	1,860	301	2,660	1,520	107	47	1,350	24	48	7.1
17	12	140	3,600	654	1,760	1,420	102	59	548	16	34	6.5
18	16	411	*2,140	3,750	*b1,250	1,040	134	65	237	13	56	5.8
19	15	663	1,360	2,420	b800	*890	1,380	66	126	13	148	5.e
20	16	540	1,100	1,320	b600	780	824	54	76	17	115	5.2
21	18	585	794	1,040	b400	834	391	49	58	19	64	5.0
22	18	492	572	807	b325	1,320	284	34	29	49	39	5.0
23	18	328	458	2,360	b300	1,620	217	57	30	48	30	5.0
24	18	234	387	2,310	b280	1,620	168	48	24	30	22	4.7
25	18	164	318	1,450	b260	1,450	139	38	20	19	81	3.9
26	17	135	274	1,100	b250	1,100	117	32	17	16	413	2.9
27	19	157	271	890	b240	807	100	29	15	14	237	2.5
28	18	265	1,540	630	b240	607	84	28	90	12	77	2.7
29	18	304	3,750	458	-	488	64	27	78	11	45	2.7
30	15	349	4,400	399	-	410	59	24	25	9.8	34	2.3
31	18	-	3,240	318	-	369	-	24	-	11	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	508	27	11	16.4	0.028	0.03
November	7,155	663	25	238	.405	.45
December	52,175	4,930	271	1,683	2.87	3.31
Calendar year 1940	279,876.8	8,050	9.9	765	1.30	17.74
January	34,887	3,750	288	1,125	1.92	2.21
February	20,810	3,750	240	743	1.27	1.32
March	31,788	2,600	237	1,025	1.75	2.02
April	11,568	1,380	59	386	.658	.73
May	1,352	66	24	43.6	.074	.09
June	4,110	1,350	15	137	.233	.26
July	510.9	49	8.7	16.5	.028	.03
August	1,685.7	413	1.0	54.4	.093	.11
September	297.2	29	2.3	9.91	.017	.02
Water year 1940-41	166,846.8	4,930	1.0	457	.779	10.58

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Ashtabula River near Ashtabula and Chagrin River at Willoughby.
b Stage-discharge relation affected by ice.

Ashtabula River near Ashtabula, Ohio

Location.- Water-stage recorder, lat. 41°51'19", long. 80°45'43", at highway bridge, 1 mile upstream from Hubbard Run, 1¼ miles southeast of Ashtabula, Ashtabula County, and 5½ miles upstream from mouth.

Drainage area.- 118 square miles.

Records available.- July 1924 to December 1935, March 1939 to September 1941.

Average discharge.- 13 years, 132 second-feet.

Extremes.- Maximum discharge during year, 2,700 second-feet Dec. 13; maximum gage height, 6.20 feet Mar. 4, ice jam; no flow July 2-7, 9-16, July 22 to Aug. 11, Sept. 13-30. 1924-35, 1939-41: Maximum discharge, 6,270 second-feet Jan. 19, 1929; maximum gage height, 9.16 feet Feb. 13, 1940, ice jam; no flow at times during 1925-35, 1939-41.

Remarks.- Records good except those below 3 second-feet, which are fair, and those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.5	3.6	500	284	80	40	188	11	2.4	0.1	0.0	0.9
2	3.6	7.5	797	415	70	50	232	10	1.8	0	0	.5
3	3.2	26	367	607	65	100	115	9.1	1.5	0	0	.3
4	2.0	30	289	256	60	900	73	7.5	3.3	0	0	.3
5	1.5	17	246	80	100	500	66	6.1	6.1	0	0	.9
6	1.0	13	177	67	80	260	224	5.5	3.8	0	0	2.1
7	1.0	14	345	62	70	125	179	7.5	6.8	0	0	.9
8	1.1	29	1,040	57	80	75	91	13	11	.1	0	.4
9	.8	29	450	53	90	50	55	13	7.5	0	0	.3
10	.6	19	529	50	110	40	40	12	4.4	0	0	.2
11	.5	20	517	47	120	86	29	12	3.3	0	0	.2
12	.4	181	810	45	80	232	24	10	3.8	0	.9	.1
13	.3	121	1,950	45	150	212	20	8.3	5.5	0	.3	0
14	.5	48	441	45	900	205	20	6.8	12	0	.2	0
15	1.0	20	166	50	950	220	17	8.3	34	0	.2	0
16	1.5	12	568	80	275	224	15	14	112	0	.2	0
17	1.5	18	1,080	250	160	201	16	25	60	.2	.2	0
18	1.8	157	*548	1,510	*70	150	20	28	36	.1	.1	0
19	1.8	285	158	394	50	100	568	20	17	.1	.1	0
20	4.1	246	114	168	43	75	226	15	10	.1	.2	0
21	4.1	355	101	118	40	400	106	12	5.5	.1	.3	0
22	4.1	185	85	*118	38	*342	71	8.3	3.3	0	.2	0
23	3.6	101	65	1,050	36	264	58	7.5	2.1	0	.1	0
24	3.6	57	52	376	35	260	42	7.5	1.3	0	.1	0
25	3.6	44	40	175	35	224	31	8.3	.9	0	.2	0
26	3.6	40	38	100	35	157	24	7.5	.5	0	2.8	0
27	3.2	50	46	80	35	127	20	7.5	.4	0	7.9	0
28	2.7	*100	614	75	35	112	16	5.5	.3	0	20	0
29	2.7	150	1,360	70	-	89	14	3.8	.2	0	8.3	0
30	4.5	200	1,140	90	-	73	12	2.4	.2	0	3.8	0
31	3.6	-	445	100	-	66	-	2.1	-	0	1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	72.0	4.5	0.3	2.32	0.020	0.02
November	2,576.1	353	3.6	85.9	.728	.81
December	14,878	1,950	38	480	4.07	4.69
Calendar year 1940	66,823.0	2,650	0	183	1.55	21.06
January	6,917	1,510	45	223	1.89	2.18
February	3,892	950	35	139	1.18	1.23
March	5,959	900	40	192	1.63	1.88
April	2,592	568	12	86.4	.732	.82
May	312.5	26	2.1	10.1	.086	.10
June	358.9	112	.2	11.9	.101	.11
July	.8	.2	0	.03	.00025	.0003
August	47.9	20	0	1.55	.013	.01
September	7.1	2.1	0	.24	.0020	.002
Water year 1940-41	37,611.3	1,950	0	103	.873	11.85

Peak discharge.- Dec. 13 (7 a.m.) 2,700 sec.-ft.; Dec. 29 (10 p.m.) 1,840 sec.-ft.; Jan. 18 (4:30 p.m.) 2,000 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 26 to Dec. 1, Jan. 5-17, Jan. 26 to Mar. 10, Mar. 18-21.

Cattaraugus Creek at Gowanda, N. Y.

Location.- Water-stage recorder, lat. 42°27'50", long. 78°56'10", at Gowanda, Erie County, 380 feet downstream from highway bridge, 600 feet downstream from power house of Niagara, Lockport & Ontario Power Co., and 4.2 miles downstream from South Branch of Cattaraugus Creek.

Drainage area.- 428 square miles.

Records available.- November 1939 to September 1941.

Extremes.- Maximum discharge during year, 15,500 second-feet Apr. 5 (gage height, 8.84 feet); minimum, 6 second-feet (regulated) Aug. 21 (gage height, 1.01 feet); minimum daily, 53 second-feet (regulated) Sept. 19.
1939-41: Maximum discharge, that of Apr. 5, 1941; minimum, that of Aug. 21, 1941; minimum daily, that of Sept. 19, 1941.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Flow of Cattaraugus Creek is regulated by municipal power plant and several industrial plants upstream. Diurnal fluctuation at low and medium stages.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 7				Dec. 8 to Sept. 30					
1.7	137	2.6	568	1.3	49	2.4	424	5.1	3,480
1.8	171	3.0	851	1.5	91	2.8	662	6.0	5,460
2.0	250	3.5	1,300	1.7	139	3.2	963	7.0	8,240
2.3	394	4.0	1,850	1.9	199	3.7	1,450	7.5	9,910
				2.1	279	4.3	2,200		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	282	1,450	988	350	245	3,050	342	218	151	135	88
2	206	377	1,020	906	350	390	2,670	330	215	129	120	86
3	180	530	750	1,300	340	1,000	*3,140	305	189	102	105	75
4	180	467	b620	880	330	4,800	3,490	293	214	107	74	134
5	162	350	b560	515	320	2,330	9,860	299	385	103	63	255
6	157	932	b640	540	340	1,600	5,760	296	267	107	81	206
7	173	784	1,430	460	410	1,070	3,200	295	202	111	64	112
8	254	578	2,060	520	*370	*992	2,260	318	209	125	69	93
9	228	464	*1,170	*580	340	773	1,770	303	191	105	65	91
10	185	518	1,240	500	310	707	1,500	329	163	101	69	172
11	170	498	1,300	440	290	679	1,330	275	156	100	90	156
12	160	547	1,970	390	280	620	1,130	263	158	102	63	116
13	144	506	6,330	350	320	517	972	244	181	104	76	96
14	142	400	1,560	320	620	549	935	220	188	94	73	91
15	206	390	936	300	1,070	556	849	212	205	91	75	73
16	266	376	2,050	360	696	570	724	262	210	107	83	81
17	210	391	3,370	1,060	540	481	645	540	186	184	88	73
18	280	543	1,290	3,630	439	440	781	548	161	119	72	64
19	212	546	1,030	1,560	410	517	1,580	327	148	145	78	53
20	184	1,680	931	760	380	601	957	257	139	138	72	65
21	236	1,740	1,110	700	350	572	848	224	128	119	63	59
22	244	1,200	920	780	330	620	706	220	135	98	63	64
23	193	856	782	1,920	310	876	602	268	123	88	60	57
24	186	630	650	957	300	2,070	553	230	121	92	63	60
25	185	544	671	700	280	2,450	510	205	116	84	92	57
26	192	416	788	600	270	1,520	464	207	112	83	130	61
27	176	409	1,220	520	260	1,230	434	202	106	76	91	60
28	174	428	2,530	460	250	1,720	407	227	107	100	72	61
29	166	390	2,650	410	-	1,910	381	260	157	96	66	61
30	274	414	2,420	370	-	1,240	358	253	148	123	62	54
31	335	-	1,330	350	-	1,350	-	206	-	150	65	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,284	335	142	203	0.474	0.55
November	18,186	1,740	282	606	1.42	1.58
December	46,778	6,330	560	1,509	3.53	4.07
Calendar year 1940	313,228	11,300	108	856	2.00	27.21
January	24,126	3,630	300	778	1.82	2.10
February	10,855	1,070	250	388	.907	.94
March	34,995	4,800	245	1,129	2.64	3.04
April	51,866	9,860	358	1,729	4.04	4.51
May	8,760	548	202	283	.661	.76
June	5,238	385	106	175	.409	.46
July	3,434	164	76	111	.259	.30
August	2,464	135	60	79.5	.186	.21
September	2,774	255	53	92.5	.216	.24
Water year 1940-41	215,760	9,860	53	591	1.38	18.76

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 29, Dec. 4-6, Jan. 6-17, 20-22, Jan. 25 to Feb. 14, Feb. 17, Feb. 20 to Mar. 4, Mar. 18 (no gage-height record Jan. 25 to Feb. 1).

Buffalo Creek at Gardenville, N. Y.

Location.- Water-stage recorder, lat. 42°51'15", long. 78°45'30", in Gardenville, Erie County, 700 feet downstream from bridge on Union Road and 2 miles upstream from Cayuga Creek. Datum of gage 604.04 feet above mean sea level (unadjusted).
Drainage area.- 145 square miles.
Records available.- October 1938 to September 1941.
Extremes.- Maximum discharge during year, 9,100 second-feet Apr. 5 (gage height, 7.12 feet); maximum gage height, 9.60 feet (ice jam) Mar. 4; minimum discharge, 0.7 second-foot (regulated) Aug. 22, 24, 25 (gage height, 0.70 foot).
1938-41: Maximum discharge, 10,700 second-feet Feb. 20, 1939 (gage height, 7.62 feet); maximum gage height, that of Mar. 4, 1941; minimum discharge, that of Aug. 22, 24, 25, 1941; minimum gage height observed, 0.70 foot Aug. 28, 31, and Sept. 3, 1939 (affected by backwater from leaves and debris) and Aug. 22, 24, 25, 1941.
Remarks.- Records good except those for periods of ice effect, backwater from debris, or fragmentary gage-height record, which are fair. Diurnal fluctuation at low stages caused by mill 3.2 miles upstream.

Rating tables, water year 1940-41, except periods of ice effect or backwater from debris (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 20

1.00	17.4	1.5	105
1.05	22.6	1.7	169
1.10	28.4	2.0	294
1.2	42.7	2.4	500
1.3	60	2.7	695
1.4	80		

Nov. 20 to Sept. 30.

0.79	2.10	1.05	15.4	1.7	160	4.0	2,040
.80	2.36	1.10	20.4	1.9	240	4.7	3,140
.85	3.96	1.2	33.6	2.2	394	5.6	4,970
.90	6.05	1.3	50.1	2.5	580		
.95	8.60	1.4	71	3.0	950		
1.00	11.6	1.5	97	3.5	1,420		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	58	660	259	76	46	1,010	50	28	S.6	57	f14
2	22	120	350	227	74	48	*754	49	26	9.S	57	f11
3	21	228	185	511	70	700	892	48	24	11	32	f9.0
4	19	128	*130	239	66	1,850	843	45	20	7.S	19	f8.0
5	18	79	98	138	64	1,060	4,940	44	25	S.9	16	S.0
6	19	225	125	145	78	640	1,370	45	32	7.2	10	S.6
7	19	188	800	124	135	380	662	47	25	9.3	6.S	13
8	24	100	1,250	*145	*112	310	432	47	23	32	S.6	12
9	28	76	453	155	92	*200	315	46	19	27	5.0	70
10	27	70	600	140	74	205	254	46	18	17	2.5	278
11	23	85	585	114	62	200	219	45	15	14	5.5	207
12	22	100	543	90	54	175	183	40	14	11	6.9	57
13	21	76	2,240	78	64	160	160	37	26	S.6	4.2	30
14	20	56	361	68	145	185	157	35	71	S.6	3.1	20
15	24	53	164	64	320	190	153	34	49	S.0	5.4	15
16	35	56	1,330	100	260	200	121	40	37	7.5	S.4	12
17	35	70	1,480	520	155	170	109	56	30	22	4.1	10
18	30	200	320	1,500	118	145	126	58	24	17	S.2	9.4
19	28	184	230	539	98	170	223	45	18	18	4.9	9.2
20	23	630	215	199	82	210	190	34	15	14	7.3	5.0
21	24	504	394	183	74	200	168	29	12	14	4.4	6.5
22	25	268	297	202	68	220	134	27	11	11	3.0	7.3
23	25	182	224	538	60	400	112	33	12	11	3.7	5.6
24	24	115	148	244	56	920	94	27	11	7.5	2.1	5.0
25	25	89	187	144	54	1,100	84	25	11	6.7	11	5.6
26	24	56	219	116	52	620	76	22	10	4.9	19	7.0
27	23	74	388	100	50	450	67	23	S.6	6.0	16	6.8
28	22	78	981	90	48	760	62	23	7.0	4.0	11	5.4
29	22	72	1,240	S2	-	680	58	29	6.5	11	S.3	6.2
30	38	76	1,040	76	-	380	54	34	7.2	24	f7.0	6.5
31	76	-	415	72	-	440	-	29	-	37	f10	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	S10	76	18	26.1	0.180	0.21
November	4,296	630	53	143	.986	1.10
December	17,652	2,240	98	569	3.92	4.52
Calendar year 1940	84,993	4,300	11	232	1.60	21.79
January	7,202	1,500	64	232	1.60	1.84
February	2,661	320	48	95.0	.655	.68
March	13,414	1,850	46	433	2.99	3.45
April	14,022	4,940	54	467	3.22	3.59
May	1,192	58	22	38.5	.266	.31
June	635.3	71	6.5	21.2	.146	.16
July	404.4	37	4.0	13.0	.090	.10
August	367.4	57	2.1	11.9	.082	.09
September	S68.1	278	5.0	28.9	.199	.22
Water year 1940-41	63,524.2	4,940	2.1	174	1.20	16.27

* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.
Note.- Stage-discharge relation affected by ice Nov. 16-18, Nov. 27 to Dec. 7, Jan. 6-18, Jan. 26 to Mar. 31. Backwater from debris Oct. 15 to Nov. 1; discharge computed on basis of gage heights, discharge measurement, and comparisons with records for nearby stations.

Cayuga Creek near Lancaster, N. Y.

Location.- Water-stage recorder, lat. 42°53'20", long. 78°38'40", just upstream from low flat-crested dam in Como Lake Park, 700 feet downstream from bridge on Bowen Road, 800 feet (revised) downstream from Little Buffalo Creek, and 2 miles southeast of Lancaster, Erie County. Datum of gage is 672.80 feet above mean sea level, (unadjusted).

Drainage area.- 93.3 square miles.

Records available.- September 1938 to September 1941.

Extremes.- Maximum discharge during year, 5,830 second-feet Apr. 5 (gage height, 8.27 feet); maximum gage height, 12.00 feet, ice jam, Mar. 24; minimum discharge, 1.1 second-feet Sept. 25; minimum gage height, 2.63 feet Aug. 24.
1938-41: Maximum discharge, 6,720 second-feet Feb. 20, 1939 (gage height, 8.60 feet); maximum gage height, that of Mar. 24, 1941; practically no flow Aug. 8, 9, 1939, when permanent stop logs were installed in dam.

Remarks.- Records fair.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	23	420	140	47	25	750	30	12	1.9	33	7.1
2	7.4	68	240	121	45	27	*516	28	12	1.9	6.7	5.4
3	7.0	130	150	315	41	215	592	25	9.8	1.6	4.4	3.2
4	6.5	72	114	132	38	1,140	503	23	8.4	1.6	3.7	2.5
5	6.2	48	*82	29	36	*480	3,060	24	16	1.5	3.3	3.0
6	6.2	170	102	70	41	340	1,000	24	16	1.5	3.1	3.6
7	6.7	83	450	60	*54	250	371	24	a10	1.8	2.9	3.0
8	9.7	54	700	*64	45	195	229	25	a9.4	5.5	2.7	2.3
9	11	43	340	72	37	158	168	24	a8.8	4.2	2.5	10
10	9.2	38	382	64	34	129	131	24	a7.2	3.5	2.4	39
11	8.2	53	305	54	32	114	106	22	a6.2	3.2	2.1	124
12	7.4	88	515	37	30	100	88	20	a6.2	3.2	2.5	29
13	6.9	55	1,340	27	34	72	72	18	a14	3.1	2.2	14
14	6.2	36	182	8.6	112	98	77	17	a47	2.8	2.1	8.7
15	11	35	127	6.5	190	118	73	16	35	2.4	2.1	6.1
16	17	32	842	6.0	135	125	51	18	26	2.3	2.5	5.0
17	17	31	737	300	100	104	47	23	24	4.6	3.0	3.7
18	21	118	178	860	74	84	47	29	15	3.7	2.4	3.2
19	17	144	142	320	58	106	149	22	5.5	3.8	2.2	2.9
20	11	484	147	135	47	135	162	16	5.3	4.0	2.1	2.7
21	13	263	237	124	41	125	110	13	f5.0	3.4	2.1	2.5
22	16	161	174	140	37	145	70	13	4.5	3.2	2.0	2.0
23	13	110	146	410	34	300	52	13	5.0	2.9	1.9	1.8
24	12	72	106	200	32	640	46	12	f4.1	2.6	1.8	1.8
25	11	60	120	102	30	760	43	9.9	f3.3	2.1	6.1	1.6
26	11	29	138	78	29	420	40	7.0	f2.5	1.9	10	1.8
27	10	35	202	66	27	300	37	7.0	2.2	1.6	5.0	1.8
28	9.0	34	535	58	26	480	35	12	1.9	1.5	3.2	1.6
29	8.5	30	833	52	-	468	33	14	1.8	3.8	2.5	1.5
30	14	38	631	48	-	218	31	16	1.8	2.5	2.2	1.6
31	22	-	221	45	-	266	-	11	-	34	3.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	340.2	22	6.2	11.0	0.118	0.14
November	2,637	484	23	87.9	.942	1.05
December	10,838	1,340	82	350	3.75	4.32
Calendar year 1940	51,381.7	3,000	1.6	140	1.50	20.47
January	4,144.1	860	6.0	134	1.44	1.66
February	1,486	190	26	53.1	.569	.59
March	8,137	1,140	25	262	2.81	3.24
April	8,689	3,060	31	290	3.11	3.47
May	579.9	30	7.0	18.7	.200	.23
June	325.9	47	1.8	10.9	.117	.13
July	117.6	34	1.5	3.79	.041	.05
August	128.1	33	1.8	4.13	.044	.05
September	296.4	124	1.5	9.88	.106	.12
Water year 1940-41	37,719.2	3,060	1.5	103	1.10	15.05

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby stations.
f Fragmentary gage-height record; discharge computed on basis of records for nearby stations.
Note.- Stage-discharge relation affected by ice Nov. 29 to Dec. 9, Jan. 6-11, Jan. 17 to Mar. 18, Mar. 18-28.

Cazenovia Creek at Ebenezer, N. Y.

Location.- Water-stage recorder, lat. 42°49'45", long. 78°46'40", 40 feet upstream from highway bridge on Ridge Road in village of Ebenezer, Erie County, 4.4 miles upstream from mouth, and 5 miles southeast of Buffalo. Datum of gage is 606.86 feet above mean sea level (unadjusted).

Drainage area.- 136 square miles.

Records available.- June 1940 to September 1941.

Extremes.- Maximum discharge during year, 6,820 second-feet Apr. 5 (gage height, 9.95 feet); minimum, 3.7 second-feet Aug. 25 (gage height, 0.42 foot).
1940-41: Maximum discharge that of Apr. 5, 1941; minimum, that of Aug. 25, 1941.

Remarks.- Records good except those for periods of ice effect or backwater from leaves, which are fair.

Rating tables, water year 1940-41, except periods of ice effect or backwater from leaves (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 20				Nov. 21 to Sept. 30					
0.7	15.5	1.5	132	0.45	4.4	0.80	24.5	2.9	640
.8	22.5	1.8	210	.50	5.8	.9	35.5	3.7	1,075
.9	31.5	2.1	306	.55	7.3	1.1	62	5.0	1,970
1.0	42.5	2.6	504	.60	9.2	1.3	96	6.5	3,230
1.1	56	3.2	791	.65	11.5	1.6	162	7.3	3,990
1.3	90	3.8	1,135	.70	14.6	1.9	246		
				.75	19.0	2.3	383		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	53	1,000	283	80	47	1,160	56	26	9.3	31	25
2	25	106	439	258	76	50	889	55	25	9.3	45	10
3	24	214	230	655	72	680	1,080	51	22	7.5	11	8.5
4	22	124	*175	261	68	1,950	1,120	48	19	6.6	8.8	7.0
5	22	78	125	210	66	*1,050	3,930	48	26	6.0	7.6	7.0
6	21	310	155	170	98	618	1,560	49	34	6.3	6.8	16
7	21	201	1,160	130	*145	391	790	52	23	9.3	5.6	19
8	26	106	1,340	*145	114	332	544	54	22	54	5.2	11
9	29	77	472	155	92	210	404	54	21	24	4.9	138
10	26	81	728	140	78	218	334	52	18	14	4.6	505
11	23	86	552	116	66	211	281	49	15	11	4.5	254
12	22	100	325	98	56	176	222	45	15	10	5.2	59
13	21	70	2,240	86	68	165	184	43	33	8.4	5.3	34
14	20	55	368	76	145	185	181	41	84	6.6	5.3	23
15	23	53	196	70	340	195	159	39	61	7.1	5.7	18
16	32	58	1,500	88	225	195	126	50	41	6.9	6.7	14
17	31	73	1,450	680	160	170	111	63	29	25	9.3	12
18	27	268	344	1,400	124	150	120	78	22	16	9.5	11
19	25	172	248	518	104	180	200	54	18	15	7.6	9.8
20	22	1,120	240	230	90	213	172	43	15	17	5.9	8.7
21	24	647	401	205	80	197	176	38	13	12	5.2	8.2
22	24	458	280	193	74	230	141	34	12	11	4.9	7.1
23	25	243	223	760	66	424	115	33	12	8.2	4.8	8.3
24	24	155	157	230	60	1,030	100	30	11	5.4	4.6	7.5
25	23	118	195	160	58	1,210	89	26	10	6.0	10	7.4
26	22	96	235	135	56	566	79	24	9.0	5.6	26	7.9
27	21	80	404	114	52	463	72	22	8.0	5.8	16	7.0
28	20	84	1,200	102	49	741	67	24	8.1	5.3	9.8	7.8
29	20	76	1,280	92	-	708	64	28	7.4	7.8	7.5	6.9
30	32	82	1,020	84	-	340	59	39	6.0	12	6.4	9.0
31	62	-	411	76	-	421	-	31	-	27	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	787	62	20	25.4	0.187	0.22
November	5,444	1,120	53	181	1.33	1.48
December	19,593	2,240	125	632	4.65	5.36
Calendar year	-	-	-	-	-	-
January	7,920	1,400	70	255	1.88	2.17
February	2,762	340	49	98.6	.725	.76
March	13,716	1,950	47	442	3.25	3.75
April	14,529	3,930	59	484	3.56	3.97
May	1,353	78	22	43.6	.321	.37
June	665.5	84	6.0	22.2	.163	.18
July	375.4	54	5.3	12.1	.089	.10
August	302.7	45	4.5	9.76	.072	.08
September	1,267.1	505	6.9	42.2	.310	.35
Water year 1940-41	68,714.7	3,930	4.5	188	1.38	18.79

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by leaves, Oct. 15-30; discharge computed on basis of gage heights, one discharge measurement, weather records, and engineer's notes. Stage-discharge relation affected by ice Nov. 26 to Dec. 1, Dec. 4-7, Jan. 5-15, Jan. 23 to Mar. 4, Mar. 14-19.

Little Tonawanda Creek at Linden, N. Y.

Location.- Staff gage and concrete control, lat. 42°52'35", long. 78°09'45", at highway bridge in Linden, Genesee County.
Drainage area.- 22 square miles.
Records available.- July 1912 to September 1941.
Average discharge.- 28 years (1912-19, 1920-41), 26.6 second-feet.
Extremes.- Maximum discharge during year, 1,730 second-feet Apr. 5 (gage height, 11.2 feet, from graph based on gage readings); minimum, 0.26 second-foot Aug. 24, 25, Sept. 27 (gage height, 0.19 foot).
1912-41: Maximum discharge, about 2,400 second-feet Apr. 22, 1916 (gage height, 14.6 feet), from rating curve extended above 1,500 second-feet by logarithmic plotting; minimum, about 0.1 second-foot Sept. 5-7, 1934, and several times during period Aug. 4-28, 1936.
Remarks.- Records good except those for periods of ice effect and those for days of rapid or large fluctuations in stage, which are fair. Gage read twice daily.

Rating table. water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.2	0.30	0.55	3.66	1.9	63
.25	.52	.6	4.55	2.3	95
.3	.81	.7	6.63	3.0	164
.35	1.18	.8	9.06	4.0	284
.4	1.65	1.0	15.05	5.0	425
.45	2.22	1.3	26.8	6.0	585
.5	2.88	1.6	43	7.2	810

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	3.2	40	40	16	b9.6	125	10	2.6	0.9	0.9	0.8
2	1.6	4.9	32	35	16	b9.8	128	9.6	2.3	.8	.8	.5
3	1.6	13	23	52	15	27	160	8.5	2.1	.8	.7	.4
4	1.4	7.3	22	34	14	123	175	8.0	2.1	.8	.6	.5
5	1.4	5.5	*22	22	14	86	*802	8.5	2.6	.8	.5	.5
6	1.4	8.5	19	b19	14	*56	368	9.1	2.2	.7	.5	.5
7	1.4	7.6	54	b18	*18	39	163	8.5	2.1	.8	.5	.4
8	1.6	6.2	82	b17	14	39	111	8.5	2.0	1.3	.5	.3
9	1.4	5.8	43	21	13	32	82	8.0	1.9	.8	.4	.7
10	1.4	5.8	54	20	b13	24	70	7.8	1.6	.8	.4	1.9
11	1.3	5.3	52	19	12	24	60	6.9	1.6	.8	.4	1.3
12	1.3	6.2	53	*18	12	22	46	6.2	1.6	.8	.5	.8
13	1.3	5.8	147	15	14	15	40	5.8	2.1	.8	.4	.7
14	1.2	4.9	56	14	37	15	46	5.3	3.7	.7	.4	.6
15	1.6	5.3	31	13	53	17	37	5.1	3.0	.6	.4	.5
16	1.4	5.8	136	12	33	22	28	5.1	2.6	.6	.8	.5
17	1.4	6.2	139	34	27	16	26	6.0	2.3	.8	.6	.4
18	1.6	9.3	63	147	21	14	24	6.2	1.9	.6	.5	.4
19	1.6	9.6	40	45	18	b13	47	5.3	1.6	.7	.5	.4
20	1.6	49	40	29	15	b14	36	4.6	1.4	.7	.4	.4
21	1.8	39	56	26	b14	b17	30	3.8	1.4	.6	.4	.4
22	1.8	28	40	27	b13	25	27	3.8	1.3	.5	.3	.4
23	1.8	19	27	57	b12	52	22	3.8	1.6	.5	.3	.4
24	1.6	16	24	27	b11	118	19	3.5	1.3	.5	.3	.4
25	1.8	13	27	23	b11	132	17	3.2	1.3	.4	.6	.4
26	1.8	9.6	37	20	b10	88	15	2.9	1.1	.4	.7	.3
27	1.6	7.8	59	18	b10	133	14	2.9	1.0	.4	.5	.3
28	1.6	7.8	162	18	b9.8	125	12	3.2	.9	.3	.4	.3
29	1.6	9.1	152	16	-	100	11	2.9	.9	1.4	.3	.3
30	3.6	11	150	18	-	66	11	2.6	1.0	1.0	.3	.3
31	3.7	-	56	16	-	81	-	2.3	-	1.3	1.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	51.8	3.7	1.2	1.67	0.076	0.09
November	335.5	49	3.2	11.2	.509	.57
December	1,938	162	19	62.5	2.84	3.27
Calendar year 1940	11,717.3	678	.8	32.0	1.45	19.79
January	890	147	12	28.7	1.30	1.50
February	479.8	53	9.8	17.1	.777	.81
March	1,554.4	133	9.6	50.1	2.28	2.63
April	2,752	802	11	91.7	4.17	4.65
May	177.9	10	2.3	5.74	.261	.30
June	55.1	3.7	.9	1.84	.084	.09
July	22.9	1.4	.3	.74	.034	.04
August	15.8	1.0	.3	.51	.023	.03
September	16.0	1.9	.3	.53	.024	.03
Water year 1940-41	8,289.2	802	.3	22.7	1.03	14.01

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Genesee River at Scio, N. Y.

Location.- Water-stage recorder, lat. 42°09'50", long. 77°58'50", at highway bridge three-quarters of a mile upstream from Scio, Allegany County.
Drainage area.- 309 square miles.
Records available.- June 1916 to September 1941.
Average discharge.- 25 years, 367 second-feet.
Extremes.- Maximum discharge during year, 7,200 second-feet Apr. 5 (gage height, 8.55 feet), from rating curve extended above 3,600 second-feet by logarithmic plotting; minimum, 14 second-feet Sept. 28 (gage height, 0.97 foot).
1916-41: Maximum discharge observed, 10,600 second-feet May 22, 1919 (gage height, 10.1 feet, present datum), from rating curve extended above 3,600 second-feet by logarithmic plotting; minimum discharge, 5.8 second-feet Sept. 4, 1939 (gage height, 0.71 foot).
Remarks.- Records good except those for period of no gage-height record, which are fair.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 7				Dec. 8 to June 5				June 5 to Sept. 30			
1.2	31	2.0	183	1.3	45	3.6	889	0.9	9	1.5	86
1.3	45	2.3	264	1.6	96	4.3	1,380	1.0	16	1.8	153
1.5	78	2.6	364	1.9	164	5.0	2,030	1.1	25	2.2	260
1.7	116	2.9	490	2.2	251	6.2	3,450	1.2	36	2.6	392
				2.6	390	7.4	5,210	1.3	50	2.7	430
				3.1	607						

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	63	290	696	132	82	1,190	178	80	50	190	30
2	80	82	256	617	144	80	1,340	169	78	53	114	26
3	73	110	198	622	134	143	1,630	154	63	43	88	24
4	68	100	170	496	121	1,220	*1,740	146	113	42	75	24
5	59	87	160	357	116	620	5,200	142	393	43	65	31
6	56	124	169	353	125	440	3,920	139	210	36	57	49
7	56	129	477	310	130	310	2,370	132	146	45	50	39
8	61	118	896	270	118	270	1,690	139	122	81	44	28
9	58	108	487	267	108	210	1,340	128	103	57	40	25
10	51	112	489	248	108	*230	1,140	128	90	43	37	27
11	51	112	*548	*223	*108	225	980	112	80	43	36	34
12	48	202	635	175	106	214	827	102	76	76	87	32
13	47	178	2,590	203	118	175	718	96	107	101	58	26
14	44	146	1,020	125	150	165	643	91	252	60	42	24
15	53	164	696	135	264	191	564	85	183	46	44	23
16	66	164	923	146	211	200	483	116	199	52	73	22
17	59	155	1,130	156	183	162	458	a120	170	148	55	21
18	58	161	638	242	159	130	386	a130	178	82	44	20
19	56	161	536	218	139	155	855	a104	148	251	40	20
20	51	247	527	135	128	150	531	a90	127	145	36	19
21	50	328	531	125	118	145	454	a84	107	99	33	19
22	50	267	445	135	112	160	500	a80	94	80	30	18
23	47	230	390	315	108	270	406	a80	84	69	30	17
24	48	211	324	186	104	763	368	a83	78	60	29	17
25	47	193	310	154	98	1,330	324	73	69	52	38	17
26	48	155	339	180	94	844	290	68	62	47	47	16
27	47	161	450	162	90	949	261	63	57	42	44	15
28	44	164	1,290	156	86	1,030	232	63	55	44	36	15
29	42	155	1,290	149	-	796	211	61	52	70	29	15
30	55	155	1,240	125	-	583	191	63	52	201	27	16
31	64	-	846	152	-	625	-	55	-	179	29	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,726	89	42	55.7	0.180	0.21
November	4,742	328	63	158	.511	.57
December	20,290	2,590	160	655	2.12	2.44
Calendar year 1940	148,966	7,610	24	407	1.32	17.94
January	7,833	696	125	253	.819	.94
February	3,612	264	86	129	.417	.43
March	12,867	1,330	80	415	1.34	1.54
April	31,242	5,200	191	1,041	3.37	3.76
May	3,274	178	55	106	.343	.40
June	3,628	393	52	121	.392	.44
July	2,440	251	36	78.7	.255	.29
August	1,647	190	27	53.1	.172	.20
September	709	49	15	23.6	.076	.08
Water year 1940-41	94,010	5,200	15	258	.835	11.30

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of record for station on Allegheny River at Red House.
Note.- Stage-discharge relation affected by ice Dec. 4, 5, Jan. 8, 14, 15, 20-22, Feb. 22 to Mar. 2, Mar. 6-11, 14, 18-23.

Genesee River at St. Helena, N. Y.

Location.- Water-stage recorder, lat. 42°37'20", long. 77°59'20", at highway bridge in St. Helena, Wyoming County, 1½ miles downstream from Wolf Creek.

Drainage area.- 1,017 square miles.

Records available.- August 1908 to September 1941.

Average discharge.- 33 years, 1,195 second-feet.

Extremes.- Maximum discharge during year, 29,400 second-feet Apr. 6 (gage height, 11.14 feet); minimum, 60 second-feet Sept. 27 (gage height, 2.26 feet).
1908-41: Maximum discharge, 44,400 second-feet May 17, 1916 (gage height, 12.8 feet), from rating curve extended above 29,000 second-feet; minimum, 18 second-feet Oct. 5, 17, 1913 (gage height, 1.70 feet).

Remarks.- Records good except those for periods of ice effect, obstructed intake, or fragmentary or doubtful gage-height record, all of which are fair. Some diurnal fluctuation during low stages caused by power plants. Flow slightly regulated by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

Rating tables, water year 1940-41, except periods of ice effect or obstructed intake (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 13				Dec. 13 to Sept. 30							
2.5	139	3.7	1,060	2.3	68	2.8	244	4.0	1,270	7.1	7,120
2.6	177	4.2	1,580	2.4	94	3.0	351	4.7	2,140	7.9	10,350
2.8	271	5.0	2,600	2.5	124	3.2	482	5.5	3,390	9.0	15,500
3.0	394	5.7	3,840	2.6	159	3.5	736	6.3	4,970	9.9	20,500
3.2	560	6.5	5,750								
3.4	760	7.4	8,500								

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	474	332	952	2,220	740	580	4,180	584	226	145	446	244
2	452	348	1,810	1,860	891	900	4,450	576	244	151	386	236
3	331	864	1,430	1,900	833	3,200	6,160	555	257	126	266	243
4	224	973	1,060	1,640	734	4,900	*7,130	488	248	124	192	194
5	288	766	940	1,080	*700	3,420	15,900	471	488	113	170	106
6	349	792	816	925	470	2,230	e20,000	462	872	102	146	151
7	340	986	949	820	420	1,550	e9,200	416	572	109	128	238
8	369	748	*3,600	680	410	*1,300	e5,800	411	471	130	121	258
9	352	718	2,330	700	490	951	e4,600	420	428	124	184	299
10	264	700	1,810	780	680	795	e3,500	400	336	138	264	270
11	f176	726	2,460	*900	660	894	3,020	379	254	128	266	223
12	f232	950	2,040	880	700	796	2,580	380	240	226	279	121
13	323	1,230	8,400	952	760	700	2,230	352	241	322	272	104
14	301	809	4,460	755	900	620	2,080	324	312	368	226	162
15	342	659	2,300	640	1,180	676	1,900	322	600	362	134	239
16	360	775	2,360	500	1,600	702	1,840	334	498	357	179	229
17	312	836	5,500	540	1,140	600	1,670	402	447	276	268	230
18	238	900	2,570	1,600	840	540	1,580	1,180	396	196	288	178
19	308	942	1,880	1,760	660	500	1,960	648	390	337	294	76
20	376	1,350	1,560	786	640	450	2,260	485	338	519	278	79
21	f348	2,060	2,090	1,000	780	450	1,700	380	284	473	209	156
22	f341	1,500	1,910	1,060	740	540	1,490	316	244	242	100	160
23	f368	1,220	1,620	1,330	700	700	1,390	298	223	176	138	170
24	f280	983	1,420	1,310	680	2,000	1,220	284	212	158	236	176
26	185	821	1,300	950	660	5,600	1,080	258	192	148	252	146
26	255	697	1,360	1,020	540	3,500	952	253	160	196	269	83
27	332	603	2,150	960	320	3,360	829	236	150	268	265	72
28	298	596	5,990	860	400	4,440	816	254	140	280	198	140
29	310	602	6,330	700	-	3,620	656	249	154	324	109	143
30	394	658	6,390	470	-	2,390	586	238	140	304	94	148
31	399	-	3,190	540	-	2,170	-	230	-	419	130	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,921	474	176	320	0.315	0.36
November	26,144	2,060	332	871	.856	.96
December	82,977	8,400	816	2,677	2.63	3.03
Calendar year 1940	536,278	22,100	97	1,465	1.44	19.61
January	32,118	2,220	470	1,036	1.02	1.18
February	20,268	1,600	320	724	.712	.74
March	55,074	5,600	450	1,777	1.75	2.02
April	112,759	20,000	586	3,759	3.70	4.13
May	12,585	1,180	230	406	.399	.46
June	9,757	872	140	325	.320	.36
July	7,341	519	102	237	.233	.27
August	6,787	446	94	219	.215	.25
September	5,274	299	72	176	.173	.19
Water year 1940-41	381,005	20,000	.72	1,044	1.03	13.95

* Winter discharge measurement made on this day.
e Intake obstructed; discharge computed on basis of recession and comparison with records for adjacent stations.
f Fragmentary gage-height record; discharge computed from gage heights based on recorded range in stage and comparison with records for adjacent stations.
Note.- Stage-discharge relation affected by ice Dec. 4, 5, 8, 13, 25, Jan. 7-12, 15-18, 27-31, Feb. 5 to Mar. 4, Mar. 8, 13, 14, 17-26.

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

Location.- Water-stage recorder, lat. 42°45'55", long. 77°50'25", at Jones Bridge, 3½ miles northeast of Mount Morris, Livingston County. Datum of gage is 540.00 feet above mean sea level (levels by New York State Conservation Commission).

Drainage area.- 1,419 square miles.

Records available.- May 1903 to April 1906, August 1908 to April 1914, July 1915 to September 1941.

Average discharge.- 31 years (1908-13, 1915-41), 1,553 second-feet.

Extremes.- Maximum discharge during year, 24,600 second-feet Apr. 6 (gage height, 23.85 feet); minimum, 27 second-feet (regulated) Sept. 28 (gage height, 0.16 foot); minimum daily, 73 second-feet Sept. 20.

1903-6, 1908-14, 1915-41: Maximum discharge, 55,100 second-feet May 17, 1916 (gage height, 25.44 feet); minimum, 18 second-feet Aug. 29, 1909; minimum daily, 30 second-feet Aug. 8, 1909.

Remarks.- Records good except those for periods of ice effect or fragmentary, doubtful or no gage-height record, all of which are fair. Diurnal fluctuation at low stages caused by power plants. Slight seasonal regulation by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	474	486	1,040	3,060	920	620	4,360	714	357	199	604	228
2	510	451	1,830	2,480	1,040	1,060	5,030	640	391	184	499	251
3	494	680	1,580	2,380	980	1,850	6,450	603	356	186	371	252
4	405	1,020	1,190	2,200	920	6,000	7,670	581	376	146	272	269
5	227	915	1,180	1,590	880	d4,000	13,800	560	406	137	196	214
6	404	782	1,020	1,240	*840	d2,700	22,600	590	923	125	189	166
7	406	1,030	*1,180	1,100	640	*2,100	15,400	560	708	137	152	159
8	428	*888	4,500	960	600	1,600	*10,600	586	582	176	147	258
9	446	772	3,780	960	620	1,300	7,350	574	484	146	162	366
10	428	760	2,410	1,060	740	1,100	5,670	562	461	168	237	298
11	295	765	3,040	*1,200	880	1,160	4,690	559	372	166	279	339
12	288	884	2,330	1,160	920	1,020	3,770	530	309	181	284	186
13	364	1,280	9,270	1,180	980	900	3,040	507	326	377	290	150
14	390	968	6,750	980	1,160	800	2,670	491	322	307	295	123
15	382	743	3,090	860	1,550	900	2,420	426	566	396	204	248
16	476	782	2,480	780	1,350	960	2,160	426	571	388	142	266
17	468	876	5,790	800	1,350	860	1,970	459	510	417	257	249
18	366	986	3,370	1,900	1,120	760	1,860	981	520	237	294	231
19	311	1,020	2,370	2,000	960	d680	2,010	861	462	274	308	156
20	440	1,230	1,960	1,160	840	d640	2,840	644	438	452	304	73
21	444	2,290	2,290	1,250	840	660	2,120	541	390	526	281	128
22	444	1,740	2,340	1,400	980	800	1,770	486	284	419	151	181
23	439	1,590	2,000	1,550	920	d1,020	1,690	415	310	242	113	194
24	429	1,110	1,720	1,500	880	d2,600	1,480	439	262	203	202	179
25	284	965	1,590	1,240	840	d6,800	1,310	407	251	201	265	188
26	270	814	1,580	1,300	800	d5,000	1,200	371	199	153	322	133
27	402	716	2,360	1,220	660	d4,600	1,070	361	201	256	283	106
28	406	669	5,230	1,100	490	d5,400	1,000	431	172	341	266	90
29	365	662	7,310	960	-	d4,800	916	342	181	340	184	165
30	471	687	8,140	780	-	3,140	783	368	201	373	133	159
31	585	-	4,700	720	-	2,680	-	385	-	391	75	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12,541	585	227	405	0.285	0.33
November	28,361	2,290	451	945	.666	.74
December	99,470	9,270	1,020	3,209	2.26	2.61
Calendar year 1940	686,616	28,500	118	1,876	1.32	18.01
January	42,070	3,060	720	1,357	.956	1.10
February	26,200	1,850	490	936	.660	.69
March	68,510	6,800	620	2,210	1.56	1.80
April	139,699	22,600	783	4,657	3.28	3.66
May	16,400	981	342	529	.373	.43
June	11,891	923	172	396	.279	.31
July	8,244	526	125	266	.187	.22
August	7,761	604	75	250	.176	.20
September	6,005	366	73	200	.141	.16
Water year 1940-41	467,152	22,600	73	1,280	.902	12.25

* Winter discharge measurement made on this day.

d Doubtful, fragmentary, or no gage-height record; discharge computed on basis of records at nearby stations in Genesee River Basin and records of operation of Caneadea Reservoir.

Note.- Stage-discharge relation affected by ice Dec. 5-8, Jan. 7 to Mar. 25.

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

Location.- Water-stage recorder, lat. 43°11'05", long. 77°37'40", in Rochester, Monroe County, 40 feet downstream from Plant 5 of Rochester Gas & Electric Corporation and 100 feet upstream from Driving Park Avenue Bridge.

Drainage area.- 2,467 square miles.

Records available.- December 1919 to September 1941.

Average discharge.- 21 years (1920-41), 2,639 second-feet.

Extremes.- Maximum discharge during year, 22,700 second-feet Apr. 7 (gage height, 10.74 feet); minimum, 47 second-feet (regulated) Oct. 24, 25 (gage height, -1.98 feet); minimum daily, 676 second-feet (regulated) Sept. 30.

1919-41: Maximum discharge, 33,500 second-feet Apr. 2, 1940 (gage height, 14.08 feet); minimum, less than 10 second-feet, occurred during low-water periods in some years when power plant was shut down; minimum daily, 219 second-feet (regulated) Aug. 14, 1927.

Maximum discharge known, about 54,000 second-feet sometime in March 1865.

Remarks.- Records good. New York State Barge Canal crosses river near southern boundary of Rochester. It discharges into river, from the west, the water it has diverted from Lake Erie, and diverts from river, to the east, a smaller amount of water. Additional regulation is provided by Caneadea Reservoir.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	1,180	1,560	6,280	1,720	1,010	5,310	1,850	996	901	1,100	609
2	1,070	1,120	1,680	4,840	1,540	832	7,030	1,760	1,050	878	1,260	701
3	1,150	1,160	2,210	4,290	2,040	1,230	7,960	1,650	989	817	1,140	835
4	1,040	1,450	2,460	3,880	2,040	2,100	9,510	1,560	947	797	943	898
5	988	1,660	2,160	3,180	1,810	4,170	12,100	1,550	1,100	818	887	973
6	836	1,720	1,930	2,400	1,800	5,240	18,400	1,550	1,140	747	879	902
7	1,040	1,460	1,890	2,100	1,850	4,680	21,800	1,660	1,510	826	815	813
8	1,020	1,620	1,790	2,000	1,740	3,770	22,000	1,650	1,620	895	801	744
9	1,060	1,570	3,590	2,040	1,430	2,650	18,900	1,580	1,320	866	802	868
10	1,040	1,260	3,920	2,250	1,530	2,840	13,100	1,520	1,270	834	742	1,080
11	1,070	1,420	3,250	2,280	1,440	2,080	8,130	1,430	1,090	813	842	950
12	880	1,460	3,520	1,870	1,520	2,000	6,640	1,490	978	815	847	919
13	870	1,520	4,320	2,140	1,660	1,900	6,170	1,360	1,040	739	907	865
14	965	1,940	10,400	1,800	2,220	1,820	4,920	1,350	1,010	959	882	732
15	1,000	1,640	6,280	1,640	2,940	1,730	4,610	1,290	1,100	980	867	789
16	938	1,480	3,590	1,640	3,100	1,770	3,950	1,240	1,400	1,100	886	828
17	1,020	1,530	3,900	2,040	3,910	2,390	3,280	1,300	1,330	1,050	740	915
18	1,090	1,620	5,820	2,590	3,110	2,050	2,450	1,320	1,360	1,020	866	812
19	844	1,640	3,880	3,520	2,490	1,740	2,540	2,110	1,330	981	897	825
20	794	1,790	3,240	4,360	1,930	1,480	4,040	1,710	1,240	932	909	772
21	1,070	2,110	2,980	2,650	1,830	1,490	4,530	1,500	1,220	1,200	909	707
22	999	3,180	3,050	2,400	1,570	1,900	3,940	1,300	1,080	1,140	893	720
23	1,060	2,310	3,280	3,040	2,200	2,360	3,640	1,320	968	1,020	815	713
24	1,020	2,040	2,720	2,970	1,960	4,620	3,550	1,250	979	874	686	759
25	1,020	1,810	2,260	2,900	1,900	7,910	3,160	1,160	963	906	900	771
26	887	1,540	2,480	2,350	1,540	9,770	2,850	1,200	948	828	905	823
27	818	1,510	2,660	2,170	1,290	8,940	2,490	1,090	898	836	929	781
28	970	1,480	3,310	2,220	1,280	8,730	2,450	1,130	900	973	912	720
29	964	1,360	8,010	2,160	-	8,940	2,300	1,120	827	1,010	846	749
30	944	1,400	9,650	1,980	-	7,200	2,100	913	856	1,220	858	676
31	1,040	-	9,330	1,770	-	5,010	-	986	-	1,050	822	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	30,637	1,150	794	988	-	-
November	49,000	3,180	1,120	1,633	-	-
December	121,120	10,400	1,560	3,907	-	-
Calendar year 1940	1,056,010	31,500	375	2,885	1.17	15.89
January	83,730	6,280	1,640	2,701	-	-
February	55,390	3,910	1,280	1,978	-	-
March	114,352	9,770	832	3,689	-	-
April	213,850	22,000	2,110	7,128	-	-
May	43,899	2,100	913	1,416	-	-
June	33,459	1,620	827	1,115	-	-
July	28,825	1,220	739	930	-	-
August	27,477	1,260	686	886	-	-
September	24,449	1,080	676	815	-	-
Water year 1940-41	826,186	22,000	676	2,264	.918	12.44

Canaseraga Creek near Dansville, N. Y.

Location.- Water-stage recorder, lat. 42°33'40", long. 77°42'55", just downstream from Ossian Street Bridge, half a mile downstream from Mill Creek, and 1 mile west of Dansville, Livingston County. Datum of gage is 640.00 feet above mean sea level (levels by New York State Conservation Commission). Prior to Oct. 9, 1940, water-stage recorder at site 1¼ miles downstream, at datum 2.85 feet lower.

Drainage area.- 153 square miles.

Records available.- July 1910 to December 1912, July 1915 to June 1917, March 1919 to September 1941. October 1917 to September 1919 at Cumminsville, 1¼ miles downstream, published as Canaseraga Creek at Cumminsville, N. Y.

Average discharge.- 21 years (1920-41), 142 second-feet.

Extremes.- Maximum discharge during year, 5,860 second-feet Apr. 5 (gage height, 11.59 feet), from rating curve extended above 1,500 second-feet by logarithmic plotting on basis of contracted-opening determination at gage height 13.1 feet; minimum, 10 second-feet Sept. 27, 28 (gage height, 5.19 feet, backwater from debris on control).
1910-12, 1915-41: Maximum discharge at present site, 8,830 second-feet July 23, 1940 (gage height, 13.1 feet, from floodmark) by contracted-opening method; maximum at former site, 9,100 second-feet July 23, 1940 (gage height, 9.93 feet), by slope-area method; minimum, 10 second-feet Aug. 9, 1934, Sept. 27, 28, 1941.

Remarks.- Records good except those for periods of ice effect or backwater from debris on control, which are fair.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	58	137	243	86	66	494	110	52	28	40	19
2	39	66	125	212	92	64	555	107	50	28	29	18
3	37	79	102	217	83	225	*772	100	47	26	23	16
4	37	81	90	183	80	874	870	95	50	26	22	16
5	39	66	84	144	*76	269	3,620	102	73	25	20	19
6	39	80	82	148	80	243	2,200	100	58	25	20	26
7	39	82	190	130	83	229	1,140	95	50	26	20	17
8	40	*72	305	122	75	196	752	95	47	28	19	15
9	40	64	173	122	72	175	569	93	39	26	19	17
10	39	62	181	115	72	*152	450	102	36	23	19	20
11	37	58	*190	*105	72	115	376	88	36	22	18	23
12	37	89	309	96	72	112	315	81	36	32	20	18
13	35	82	1,080	96	77	109	284	81	40	31	19	16
14	34	69	321	92	121	119	267	77	57	25	18	15
15	51	74	225	90	212	124	239	75	45	23	20	15
16	53	72	302	89	160	137	205	84	43	28	26	14
17	40	76	393	102	135	127	194	95	53	35	22	14
18	37	92	225	187	118	115	177	100	69	26	19	14
19	39	96	196	156	108	108	301	81	47	41	19	14
20	47	173	179	130	98	102	376	73	39	26	18	14
21	43	184	200	116	92	96	247	68	36	25	18	13
22	40	157	179	108	86	102	227	64	34	25	16	12
23	37	112	160	156	83	206	198	75	36	23	16	12
24	35	102	133	112	80	759	181	66	34	23	16	12
25	39	89	137	108	78	724	168	60	33	22	27	13
26	39	74	168	99	74	431	152	58	31	20	24	12
27	37	77	234	96	70	512	147	60	29	18	20	11
28	35	74	791	92	68	510	130	60	33	20	19	11
29	38	72	718	89	-	359	120	66	31	22	18	12
30	99	72	599	86	-	252	114	60	29	31	18	14
31	70	-	326	92	-	278	-	52	-	58	19	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,311	99	34	42.3	0.276	0.32
November	2,584	184	58	86.1	.563	.63
December	8,534	1,080	82	275	1.80	2.08
Calendar year 1940	65,171	3,140	29	178	1.15	15.69
January	3,933	243	86	127	.830	.96
February	2,603	212	68	93.0	.608	.63
March	7,890	874	64	255	1.67	1.92
April	15,840	3,620	114	528	3.45	3.85
May	2,523	110	52	81.4	.532	.61
June	1,293	73	29	43.1	.282	.31
July	837	58	18	27.0	.176	.20
August	641	40	16	20.7	.135	.16
September	462	26	11	15.4	.101	.11
Water year 1940-41	48,451	3,620	11	133	.869	11.78

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 2-7, Jan. 13-15, 20, 21, Jan. 30 to Feb. 1, Feb. 5, 6, 9-12, 16-21, Feb. 24 to Mar. 3, Mar. 19-22. Backwater from debris on control Sept. 3-30; discharge computed on basis of discharge measurement, gage heights, engineer's notes, and records for Genesee River at Scio.

Canadice Lake Outlet near Hemlock, N. Y.

Location.- Hook gage, lat. 42°44'25", long. 77°34'15", upstream from 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 1941.

Average discharge.- 38 years (1903-41), 11.4 second-feet.

Cooperation.- Records furnished by Department of Public Works, Division of Water, city of Rochester, N. Y.

Monthly discharge, water year October 1940 to September 1941

Month	Mean elevation of lake above low-water mark (feet)	Discharge in second-feet		Run-off in inches
		Mean	Per square mile	
October	+0.935	8.481	0.673	0.776
November	+.381	5.907	.469	.523
December	+.364	14.742	1.170	1.349
Calendar year 1940	+1.637	13.305	1.056	14.372
January	+.586	16.804	1.334	1.538
February	+.066	13.087	1.039	1.082
March	+.242	14.365	1.140	1.314
April	+2.990	21.535	1.709	1.907
May	+3.141	3.496	.277	.319
June	+3.042	2.960	.235	.262
July	+2.573	5.774	.458	.528
August	+1.774	5.209	.413	.476
September	+1.174	4.862	.386	.431
Water year 1940-41	+1.445	9.752	.774	10.505

Note.- Terminal water-surface elevation for the year ending Dec. 31, 1940, was 1.77 feet lower than that of preceding year, corresponding to a decrease in storage of 50,108,317 cubic feet, or a discharge of 1.585 second-feet for the year. This correction applied to the above, gives a mean for the year of 11.720 second-feet, 0.930 second-foot per square mile and 12.659 inches run-off from drainage area.

Terminal water-surface elevation for the year ending Sept. 30, 1941, was 0.65 foot lower than that of preceding year, corresponding to a decrease in storage of 19,091,565 cubic feet, or a discharge of 0.605 second-foot for the year. This correction applied to the above, gives a mean for the year of 9.147 second-feet, 0.726 second-foot per square mile and 9.855 inches run-off from drainage area.

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

Location.- Water-stage recorders, lat. 43°27'00", long. 76°30'25", at Lock 7, in Oswego, Oswego County, three-quarters of a mile upstream from mouth. Datum of gage is 246.00 feet above mean sea level (New York State Barge Canal datum).

Drainage area.- 5,121 square miles.

Records available.- November 1933 to September 1941. April 1897 to December 1901 and, of doubtful accuracy, October 1927 to September 1928 at High Dam, about three-quarters of a mile upstream.

Extremes.- Maximum discharge during year, 19,900 second-feet Apr. 7 (gage height, 9.19 feet, includes daily mean discharge of canals); minimum (river only), 60 second-feet (regulated) Aug. 24, 28, 30, 31, Sept. 2 (gage height, 1.20 feet); minimum daily, 748 second-feet Aug. 30.

1933-41: Maximum discharge, 37,500 second-feet Mar. 28, 1936 (gage height, 13.10 feet, includes daily mean discharge of canals); minimum (river only), 42 second-feet (regulated), Oct. 23, 1935 (gage height, 1.01 feet); minimum daily, 465 second-feet Aug. 12, 1934.

Remarks.- Records excellent except those for periods of backwater or no gage-height record, which are good. This record represents total discharge at Oswego and includes flow in Hydraulic and Barge Canals. A large amount of natural storage and some artificial regulation is afforded by the many large lakes and Barge Canal system in the river basin. Large diurnal fluctuations at low and medium stages caused by power plants above station. The Oswego River Basin receives water from the Erie division of the Barge Canal through lock 32 near Pittsford. A small diversion from the watershed is occasionally made from tributary streams through the summit level of the Barge Canal at New London into the Mohawk River Basin. During part of year entire flow from 45 square miles of drainage area of Mud Creek may be diverted from Chemung River Basin into Lake Keuka in Oswego River Basin. During year nearly all of the flow from 15.7 square miles of Tioughnioga River Basin was diverted into DeRuyter Reservoir, in Oswego River Basin.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,610	1,850	2,800	12,200	7,640	6,900	12,600	4,700	2,700	1,820	1,940	1,310
2	1,680	1,500	3,800	12,100	7,240	7,260	11,800	4,400	2,500	1,820	1,610	1,700
3	958	1,180	3,700	11,800	7,410	7,440	12,000	4,440	2,650	1,760	1,380	2,190
4	1,040	1,800	3,450	10,700	7,710	7,680	13,400	4,330	2,420	960	1,440	1,760
5	1,100	2,000	3,170	9,710	7,680	7,490	14,300	4,330	2,280	1,560	2,040	1,560
6	1,200	1,550	2,860	9,090	7,520	7,310	16,400	4,550	1,860	1,640	2,020	1,670
7	1,480	1,760	2,770	8,910	7,060	7,140	16,600	4,400	2,000	1,620	1,770	1,400
8	1,410	1,890	2,720	8,780	7,080	7,390	18,600	4,180	2,300	1,680	1,530	1,920
9	1,620	1,880	3,400	8,510	7,050	6,750	17,400	4,340	1,980	1,760	1,310	2,480
10	1,390	1,450	3,820	7,690	7,250	6,790	17,000	3,660	1,740	1,620	923	2,880
11	991	2,520	3,770	7,330	7,320	6,780	16,300	3,310	1,940	1,380	1,400	2,920
12	1,200	2,620	5,240	7,270	7,300	6,870	15,700	3,990	1,860	1,180	1,150	2,850
13	855	2,410	6,240	7,960	6,980	7,350	15,200	3,810	2,000	1,280	1,290	2,880
14	1,550	2,300	7,730	9,010	7,230	6,850	14,700	3,640	2,000	1,240	1,660	2,260
15	1,490	2,720	6,280	8,490	7,360	6,450	14,600	3,530	2,060	1,640	1,330	2,430
16	1,590	2,980	7,030	7,580	7,950	6,250	14,100	3,810	2,280	1,860	1,230	2,660
17	1,280	2,420	7,920	8,570	8,580	6,840	13,700	3,340	2,160	1,460	1,140	2,620
18	1,270	3,170	7,900	7,710	9,050	5,660	11,700	2,900	1,980	1,560	1,290	2,270
19	1,210	3,170	7,560	7,640	8,630	6,000	11,900	3,270	1,940	1,860	1,360	2,090
20	1,120	3,350	7,350	7,350	8,240	6,870	12,200	3,300	1,720	1,320	1,590	1,820
21	1,040	2,900	7,130	8,600	8,630	6,420	12,100	3,380	1,560	1,620	1,420	1,300
22	1,270	3,100	6,760	8,230	8,440	6,080	11,500	3,000	1,280	1,200	1,480	1,500
23	1,310	3,100	7,130	8,060	7,820	5,580	11,200	3,220	1,480	1,180	847	1,650
24	1,360	2,520	7,150	8,070	7,860	6,060	10,400	2,780	2,220	1,540	925	1,480
25	892	3,600	6,020	7,460	8,280	6,470	10,100	2,210	1,760	1,240	1,700	1,670
26	1,160	3,500	6,720	7,250	7,800	7,140	9,640	2,700	1,780	1,240	1,630	1,560
27	1,140	3,600	6,990	7,420	7,700	8,260	8,790	2,950	1,780	910	1,620	1,530
28	1,340	3,400	7,730	7,690	7,520	9,540	8,080	2,800	1,960	1,630	1,170	1,480
29	1,300	3,100	9,210	7,890	-	10,400	6,760	2,440	1,480	1,220	753	1,500
30	1,320	2,700	12,200	7,670	-	11,200	5,550	2,700	1,440	1,850	748	1,420
31	1,580	-	12,900	7,620	-	12,500	-	2,260	-	2,150	752	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	39,936	1,810	855	1,288	0.252	0.29
November	76,040	3,600	1,180	2,535	.495	.55
December	189,430	12,900	2,720	6,111	1.19	1.37
*Calendar year 1940	2,328,736	33,700	753	6,363	1.24	16.90
January	264,360	12,200	7,250	8,528	1.67	1.92
February	216,330	9,050	6,980	7,726	1.51	1.57
March	227,750	12,500	5,580	7,347	1.43	1.65
April	386,520	18,800	5,550	12,880	2.52	2.81
May	108,670	4,700	2,210	3,505	.684	.79
June	59,110	2,700	1,280	1,970	.385	.43
July	46,820	2,150	910	1,510	.295	.34
August	42,478	2,040	748	1,370	.268	.31
September	58,660	2,920	1,300	1,955	.382	.43
Water year 1940-41	1,716,104	18,800	748	4,702	.918	12.46

Note.- No gage-height record Nov. 2-6, Nov. 26 to Dec. 3; fragmentary gage-height record July 14; discharge computed on basis of records for Varick hydroelectric station 1,000 feet upstream and furnished records at Fulton and High Dam. Stage-discharge relation affected by backwater, possibly from Lake Ontario, May 26 to July 27; discharge computed on basis of gage heights, discharge measurement, and furnished records at Fulton and High Dam.

Fall Creek near Ithaca, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°27'20", long. 76°28'30", in Forest Home, Tompkins County, half a mile upstream from Cornell University Dam and 1½ miles northeast of Ithaca. Datum of gage is 794.81 feet above mean sea level (general adjustment of 1912, levels by Corps of Engineers, U. S. Army).
Drainage area.- 124 square miles.
Records available.- February 1925 to September 1941. July 1908 to June 1909 at site 1½ miles downstream.
Average discharge.- 16 years, 181 second-feet.
Extremes.- Maximum discharge during year, 3,890 second-feet Apr. 6 (gage height, 4.98 feet); minimum, 10 second-feet (probable result of diversion) Sept. 25 (gage height, 0.28 foot).
1925-41: Maximum discharge, 15,500 second-feet July 8, 1935 (gage height, 9.52 feet), from average of computed flow over each of four dams; minimum, about 3 second-feet Aug. 25, 1927 (gage height, 0.18 foot).
Remarks.- Records good except those for periods of ice effect or fragmentary gage-height record, which are fair. Cornell University diverted 249,818,000 gallons during year from a point about a mile above station for water supply, equivalent to a mean discharge at the station of 1.06 second-feet, or 0.7 percent of the average flow for the year.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 5

0.4	16.5	0.8	49	1.4	149
.5	23.5	.9	59	1.6	223
.6	31.5	1.0	70	1.8	320
.7	40	1.2	99		

Note.- Same as following table above 1.8 feet.

Apr. 6 to Sept. 30

0.3	11.5	1.2	104	3.0	1,200
.4	17.5	1.4	153	3.5	1,710
.5	24	1.6	225	4.0	2,340
.6	31.5	1.8	320	4.5	3,080
.8	49	2.0	434		
1.0	71	2.5	775		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f30	44	82	315	d84	80	580	100	41	42	235	30
2	28	45	67	241	d86	*90	724	97	44	46	109	24
3	26	84	60	232	d84	100	940	90	39	31	60	19
4	24	57	52	225	d80	280	1,090	86	37	24	42	18
5	22	45	56	155	*70	270	1,650	98	57	22	34	30
6	21	54	54	*140	66	200	2,980	119	60	20	30	51
7	22	74	70	136	90	160	1,760	108	46	19	26	39
8	31	61	84	125	100	145	1,090	184	37	19	23	24
9	38	55	78	120	90	140	831	134	32	19	23	23
10	28	57	*84	118	80	145	700	142	28	16	22	26
11	24	72	104	104	92	124	622	111	27	15	20	31
12	24	80	114	100	*100	135	522	90	27	17	20	28
13	23	86	660	92	102	124	446	83	29	19	19	22
14	22	66	280	76	120	116	509	76	34	18	18	19
15	25	111	160	88	185	124	459	70	58	15	19	17
16	43	141	203	98	200	150	331	66	111	14	28	16
17	39	99	454	120	170	180	285	69	94	26	72	h14
18	32	106	191	160	150	*125	238	70	54	28	46	h14
19	32	99	191	180	140	130	405	61	40	30	29	h14
20	31	138	163	106	135	150	489	61	32	28	25	14
21	28	219	180	110	140	145	295	55	29	21	22	14
22	29	166	183	122	130	145	270	50	27	19	21	14
23	28	132	156	135	120	140	213	58	28	18	34	13
24	27	110	114	*110	108	250	186	56	31	16	28	13
25	26	94	110	88	96	480	170	48	25	15	23	12
26	25	70	139	100	90	460	153	43	22	14	24	12
27	24	73	305	90	80	500	137	42	20	12	21	12
28	24	80	1,270	88	74	600	124	45	19	24	19	12
29	23	67	1,040	86	-	581	115	49	23	97	18	12
30	43	86	720	72	-	375	106	55	26	121	17	13
31	59	-	446	78	-	330	-	41	-	265	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	901	59	21	29.1	0.235	0.27
November	2,671	219	44	89.0	.718	.80
December	7,870	1,270	52	254	2.05	2.36
Calendar year 1940	71,149	3,240	20	194	1.56	21.33
January	4,009	315	72	129	1.04	1.20
February	3,062	200	66	109	.879	.92
March	6,974	600	80	225	1.81	2.09
April	18,420	2,980	106	614	4.95	5.52
May	2,457	164	41	79.3	.640	.74
June	1,177	111	19	39.2	.316	.35
July	1,090	265	12	35.2	.284	.33
August	1,145	235	17	36.9	.298	.34
September	600	51	12	20.0	.161	.18
Water year 1940-41	50,376	2,980	12	138	1.11	15.10

* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge interpolated.
h Computed from staff-gage readings.
Note.- Stage-discharge relation affected by ice Nov. 26, Dec. 3-15, Jan. 4 to Mar. 28, Mar. 31, Apr. 1 (no gage-height record Jan. 8-13).

Cayuga Inlet near Ithaca, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°23'35", long. 76°32'40", half a mile upstream from Butternut Creek and 5 miles south of Ithaca, Tompkins County. Datum of gage is 437.16 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 36.7 square miles.

Records available.- March 1937 to September 1941.

Extremes.- Maximum discharge during year, 1,110 second-feet June 30 (gage height, 3.98 feet), from rating curve extended by logarithmic plotting above 648 second-feet; minimum, 2.4 second-feet Sept. 28 (gage height, 0.455 foot).
1937-41: Maximum discharge, 2,110 second-feet Mar. 31, 1940 (gage height, 5.31 feet, intake sluggish), from rating curve extended by logarithmic plotting above 650 second-feet; minimum, 1.8 second-feet Aug. 30, 31, Sept. 1, 2, 1939 (gage height, 0.42 foot).

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are good.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	9.8	11	57	14	14	121	23	10	79	30	3.7
2	5.6	14	9.0	47	15	*16	148	22	10	33	18	3.3
3	5.4	13	7.6	46	14	29	193	20	9.2	16	13	3.2
4	5.1	9.8	7.2	43	13	66	195	19	9.6	12	11	3.8
5	5.0	a8.9	8.0	32	12	47	452	23	19	10	9.2	4.8
6	5.0	a9.6	7.6	*30	13	40	501	24	13	8.6	7.9	5.1
7	5.5	a11	11	27	15	33	264	23	10	8.1	7.0	4.0
8	6.6	a10	13	25	16	30	184	30	8.6	7.6	6.4	3.9
9	5.8	9.8	12	24	14	29	147	25	7.6	6.4	6.4	3.8
10	5.6	8.9	*13	24	13	30	133	25	6.8	5.6	5.8	4.2
11	5.4	8.4	16	21	14	27	119	21	6.8	5.5	5.1	5.6
12	5.2	a9.0	21	20	15	29	100	18	7.2	6.0	5.6	4.3
13	5.2	a9.0	67	17	16	25	87	17	8.6	5.5	4.8	3.8
14	5.1	*a8.4	28	14	28	23	94	16	8.0	4.6	4.6	3.4
15	7.6	13	23	16	45	27	76	15	9.0	4.3	9.6	3.0
16	8.0	14	32	17	34	35	61	17	11	4.3	15	3.0
17	7.0	11	39	20	30	42	57	21	10	13	10	3.0
18	6.8	15	26	22	25	*30	50	19	8.6	6.2	7.0	2.8
19	6.4	14	22	19	22	31	67	16	7.2	20	6.8	2.8
20	6.6	16	21	13	21	31	60	14	6.4	9.5	6.0	2.8
21	6.0	20	23	15	22	32	47	13	5.6	6.6	5.3	2.e
22	5.7	17	22	18	21	34	49	12	5.3	5.6	5.0	2.6
23	5.7	15	19	18	20	52	41	15	5.5	5.3	4.6	2.8
24	5.7	13	16	*13	18	97	40	14	5.1	5.0	4.3	2.8
25	6.0	11	16	16	17	105	36	12	4.6	4.4	4.e	2.8
26	5.7	9.4	19	15	15	84	32	11	4.6	4.0	5.1	2.8
27	5.6	10	28	15	15	98	30	12	4.5	3.6	4.2	2.8
28	5.6	9.8	194	15	12	109	28	11	4.4	16	3.8	2.6
29	5.6	8.8	141	13	-	90	25	12	4.8	15	3.7	2.6
30	16	10	101	12	-	68	24	10	114	139	3.6	2.e
31	12	-	71	14	-	88	-	8.8	-	57	3.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	198.2	16	5.0	6.39	0.174	0.20
November	346.6	20	8.4	11.6	.316	.35
December	1,044.4	194	7.2	33.7	.918	1.06
Calendar year 1940	15,120.4	1,250	4.0	41.3	1.13	15.31
January	698	57	12	22.5	.613	.71
February	529	45	12	18.9	.515	.54
March	1,491	109	14	48.1	1.31	1.51
April	3,461	501	24	115	3.13	3.49
May	538.8	30	8.8	17.4	.474	.55
June	345.0	114	4.4	11.5	.313	.35
July	526.7	139	3.6	17.0	.463	.53
August	237.4	30	3.6	7.66	.209	.24
September	101.7	5.6	2.6	3.39	.092	.10
Water year 1940-41	9,517.8	501	2.6	26.1	.711	9.63

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.
Note.- Stage-discharge relation affected by ice Nov. 25, 26, 29, Dec. 2-7, 14-18, 23, 24, Jan. 5-24, Jan. 30 to Feb. 12, Feb. 17-20, Feb. 24 to Mar. 12, Mar. 14, 15, 17-23, 31.

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Canandaigua Lake at Canandaigua, N. Y.

Location.- Staff gage, lat. 42°52'30", long. 77°16'20", at west outlet at northern end of Canandaigua Lake on west side of E. T. Waldorf's boat house, 1 mile southeast of Canandaigua, Ontario County. Datum of gage is 680.76 feet above mean sea level (levels of Corps of Engineers, U. S. Army).

Drainage area.- 189 square miles.

Records available.- November 1939 to September 1941. Records previously collected at same site by the Oswego River Watershed Corporation of Fulton, N. Y.

Extremes.- Maximum gage height observed during year, 7.68 feet Apr. 8, 9, 10; minimum observed, 5.02 feet Dec. 7, 9, 11.
1939-41: Maximum gage height observed, 9.09 feet Apr. 12, 13, 1940; minimum observed, 4.65 feet Feb. 5, 1940.

Remarks.- Lake is formed by dams at two outlets. West outlet which usually carries most of lake outflow is an artificial canal 1¼ miles long emptying into Canandaigua Lake Outlet; spillway consists of a permanent stop log 9.5 feet long with top at elevation 683.96 feet extending across a masonry arch opening under roadway. East outlet is at head of natural outlet channel from lake; spillway consists of 40 feet of detachable stop logs mounted in several layers on concrete footing. The City engineer, Canandaigua, N. Y., regulates storage in lake for Oswego River Watershed Corporation, Fulton, N. Y., by operation of stop logs at east outlet. Capacity of lake not determined. Area of water surface is about 16.57 square miles at elevation 686 feet. Staff gage read twice daily.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.56	5.15	5.07	5.58	5.47	5.37	6.39	7.01	6.70	6.58	6.36	5.84
2	5.49	5.21	5.09	5.54	5.45	5.37	6.45	6.98	6.73	6.57	6.38	5.85
3	5.49	5.18	5.07	5.53	5.43	5.37	6.51	6.96	6.69	6.55	6.35	5.80
4	5.48	5.17	5.10	5.67	5.42	5.44	6.60	7.00	6.68	6.48	6.31	5.84
5	5.48	5.16	5.06	5.60	5.42	5.50	6.83	7.08	6.70	6.49	6.29	5.82
6	5.48	5.15	5.08	5.65	5.41	5.49	7.40	6.98	6.68	6.46	6.26	5.82
7	5.46	5.13	5.06	5.64	5.38	5.54	7.62	6.98	6.70	6.51	6.20	5.81
8	5.47	5.12	5.07	5.63	5.42	5.48	7.58	6.98	6.68	6.49	6.17	5.83
9	5.43	5.13	5.03	5.60	5.40	5.56	7.66	6.98	6.67	6.49	6.16	5.81
10	5.40	5.12	5.05	5.60	5.37	5.58	7.66	6.98	6.60	6.47	6.20	5.80
11	5.38	5.12	5.03	5.57	5.37	5.60	7.63	6.97	6.60	6.49	6.17	5.79
12	5.38	5.10	5.10	5.54	5.32	5.60	7.58	6.93	6.62	6.45	6.16	5.82
13	5.37	5.07	5.15	5.54	5.31	5.63	7.58	6.92	6.66	6.39	6.12	5.79
14	5.36	5.08	5.13	5.49	5.28	5.63	7.57	6.92	6.67	6.39	6.15	5.76
15	5.37	5.08	5.21	5.46	5.39	5.59	7.48	6.96	6.64	6.40	6.16	5.70
16	5.37	5.08	5.33	5.48	5.38	5.67	7.45	6.98	6.65	6.39	6.14	5.66
17	5.31	5.09	5.19	5.57	5.41	5.74	7.40	6.98	6.68	6.35	6.15	5.64
18	5.30	5.08	5.17	5.54	5.46	5.72	7.43	6.94	6.66	6.36	6.12	5.61
19	5.30	5.08	5.15	5.53	5.46	5.69	7.47	6.93	6.64	6.37	6.08	5.59
20	5.28	5.08	5.18	5.50	5.45	5.69	7.47	6.86	6.67	6.33	5.98	5.60
21	5.26	5.11	5.18	5.49	5.46	5.67	7.33	6.83	6.63	6.31	5.93	5.59
22	5.25	5.09	5.21	5.49	5.43	5.65	7.26	6.82	6.63	6.28	5.89	5.56
23	5.21	5.08	5.21	5.46	5.45	5.66	7.17	6.88	6.66	6.28	5.85	5.53
24	5.22	5.11	5.19	5.55	5.45	5.75	7.16	6.86	6.64	6.31	5.85	5.51
25	5.18	5.09	5.16	5.54	5.39	5.93	7.09	6.79	6.58	6.26	5.86	5.49
26	5.16	5.07	5.19	5.49	5.41	6.07	7.07	6.76	6.59	6.25	5.85	5.49
27	5.16	5.08	5.17	5.49	5.38	6.10	7.08	6.76	6.57	6.15	5.82	5.50
28	5.11	5.07	5.19	5.48	5.36	6.13	7.06	6.69	6.59	6.13	5.81	5.49
29	5.10	5.07	5.24	5.46	-	6.29	7.01	6.69	6.63	6.16	5.79	5.49
30	5.12	5.05	5.29	5.47	-	6.34	7.04	6.73	6.59	6.21	5.80	5.54
31	5.13	-	5.62	5.45	-	6.38	-	6.68	-	6.35	5.78	-

Canandaigua Lake Outlet at Chapin, N. Y.

Location.- Water-stage recorder, lat. 42°55'00", long. 77°14'00", about 500 feet upstream from highway bridge in Chapin, Ontario County, and about 3 miles downstream from Canandaigua Lake. Datum of gage is 676.37 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 199 square miles.

Records available.- November 1939 to September 1941.

Extremes (regulated).- Maximum discharge during year, 542 second-feet Apr. 5 (gage height, 3.33 feet); minimum, 23 second-feet Sept. 10 (gage height, 1.37 feet, backwater from weeds).
1939-41: Maximum discharge, 1,080 second-feet Apr. 12, 1940 (gage height, 4.64 feet); minimum, that of Sept. 10, 1941.

Remarks.- Records good except those for period of ice effect or backwater from weeds, which are fair. Seasonal regulation caused by operation of stop logs on dam at east outlet of Canandaigua Lake.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	40	37	122	106	96	231	100	78	64	45	32
2	54	43	36	126	107	94	242	98	76	62	42	31
3	54	40	35	133	105	92	245	98	76	62	41	30
4	54	39	44	133	*105	*109	256	100	76	60	41	29
5	52	39	47	109	104	108	399	100	76	58	40	29
6	52	39	*52	110	102	108	478	102	76	56	40	29
7	52	38	56	*117	98	108	468	100	74	56	40	26
8	50	37	62	124	98	108	518	100	74	54	39	26
9	49	37	60	124	96	110	*524	98	72	52	39	25
10	47	37	64	122	94	118	518	96	72	50	35	24
11	47	39	59	120	92	122	512	96	70	50	36	24
12	46	37	65	120	90	120	501	96	72	48	35	24
13	46	36	77	115	88	120	491	94	72	46	34	27
14	45	35	70	112	116	122	484	94	72	46	32	28
15	46	37	70	110	131	124	478	94	70	46	33	28
16	43	37	82	109	112	126	464	94	78	46	33	27
17	43	38	82	115	105	132	450	94	80	46	32	26
18	43	38	75	133	105	128	440	92	74	45	31	26
19	40	37	75	117	104	125	440	90	72	45	32	26
20	38	38	72	109	104	125	433	88	72	43	31	27
21	38	37	72	125	102	124	427	86	70	41	31	27
22	38	37	75	118	102	124	410	86	68	40	30	27
23	42	36	72	113	102	157	400	86	68	38	31	26
24	40	37	70	103	100	249	390	84	68	38	31	33
25	42	36	72	120	100	205	377	84	66	38	32	49
26	42	37	76	118	100	196	323	84	66	35	32	46
27	40	37	80	114	98	228	151	84	64	34	32	43
28	40	37	128	113	98	222	113	84	68	36	31	42
29	40	37	132	109	-	217	102	84	64	40	30	41
30	42	35	143	108	-	214	100	82	66	48	31	39
31	39	-	122	106	-	219	-	81	-	50	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,398	54	38	45.1	-	-
November	1,127	43	35	37.6	-	-
December	2,262	143	35	73.0	-	-
Calendar year 1940	66,636	1,040	29	182	0.915	12.45
January	3,627	133	103	117	-	-
February	2,864	131	88	102	-	-
March	4,450	249	92	144	-	-
April	11,385	524	100	380	-	-
May	2,849	102	81	91.9	-	-
June	2,150	80	64	71.7	-	-
July	1,473	64	34	47.5	-	-
August	1,074	45	30	34.6	-	-
September	917	49	24	30.6	-	-
Water year 1940-41	35,576	524	24	97.5	.490	6.64

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 3-9, 14, 15, Jan. 6, 8, 14, 15, 21, 22, 25-27, Jan. 30 to Feb. 1, Feb. 5-12, 16, 19-21, Feb. 24 to Mar. 2, Mar. 5-10, 13-15, 19-22. Backwater from aquatic growth Oct. 1 to Dec. 2, June 1 to Sept. 30; discharge computed on basis of six discharge measurements, gage heights, engineers' notes, and study of relationship curves for Canandaigua Lake gage heights and Outlet discharges. Increase in contents in Canandaigua Lake during calendar year 1940, about 341,800,000 cubic feet (equivalent mean discharge, 10.8 sec.-ft.; run-off, 0.74 inch), increase in elevation 0.74 ft.; decrease during water year 1940-41 about 15,480,000 cubic feet (equivalent mean discharge, 0.586 sec.-ft.; run-off, 0.04 inch), decrease in elevation, 0.04 ft.

Owasco Lake Outlet near Auburn, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°56'45", long. 76°36'05", 2½ miles downstream from center of Auburn, Cayuga County, and 4 miles downstream from State dam at outlet of Owasco Lake.
Drainage area.- 208 square miles.
Records available.- November 1912 to September 1941.
Average discharge.- 28 years (1913-41), 281 second-feet.
Extremes (regulated).- Maximum discharge during year, 1,300 second-feet Apr. 8 (gage height, 3.75 feet); minimum, 11 second-feet Oct. 23 (gage height, 1.44 feet); minimum daily, 19 second-feet Nov. 6.
1912-41: Maximum discharge, 2,090 second-feet Mar. 19, 1936, and Apr. 9, 1940 (gage height, 4.88 feet); minimum, about 2 second-feet Dec. 5, 1936 (gage height, 1.36 feet); minimum daily, 5 second-feet Nov. 11, 1934.
Remarks.- Records excellent except those below 50 second-feet, which are good, and those for period of no gage-height record, which are fair. Diurnal fluctuation caused by mills in Auburn; seasonal regulation at State dam. Water supply for Auburn taken from Owasco Lake, part of which returns as sewage to outlet above station.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30					
1.5	18	2.0	115	1.55	23.4	2.1	142	3.0	670
1.6	33	2.2	181	1.6	31	2.2	175	3.4	990
1.7	50	2.4	265	1.7	49	2.4	266	3.8	1,350
1.9	90	2.7	445	1.9	91	2.7	445		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	54	58	385	330	261	372	414	151	140	56	54
2	89	63	55	402	323	256	403	405	160	136	52	50
3	81	56	53	397	321	261	441	407	158	136	59	49
4	79	38	52	398	285	264	506	402	158	134	52	45
5	65	23	52	419	249	264	669	411	157	136	55	53
6	74	19	53	408	245	274	990	407	147	134	60	41
7	90	21	58	401	280	279	1,220	370	147	138	56	29
8	73	25	57	409	342	275	1,290	371	143	142	59	31
9	76	24	56	401	339	280	1,270	326	139	132	56	56
10	75	27	56	390	339	280	1,240	274	138	130	54	68
11	79	68	56	378	325	278	1,210	274	138	133	43	36
12	78	29	70	365	316	285	1,170	281	141	128	63	36
13	65	27	77	352	308	285	1,120	315	139	128	59	67
14	69	22	63	341	329	285	1,080	309	138	127	59	47
15	77	27	64	321	307	283	1,010	311	131	122	76	28
16	64	a23	82	313	316	291	950	312	139	125	59	41
17	70	a24	70	315	332	277	910	295	131	110	58	46
18	60	a48	70	322	337	262	825	269	130	40	60	45
19	73	a29	108	321	335	253	684	237	129	36	59	45
20	65	a27	114	329	335	256	588	188	131	24	60	46
21	74	a25	130	319	324	252	585	182	139	39	61	45
22	59	a24	145	297	313	252	580	181	142	50	62	45
23	59	a24	143	302	315	267	571	176	143	28	58	43
24	63	22	146	313	308	281	555	170	140	34	57	41
25	56	29	148	314	303	278	545	170	142	38	61	44
26	56	24	156	309	298	283	464	171	142	36	61	44
27	60	24	166	306	296	292	394	169	141	36	61	42
28	58	24	234	298	284	302	397	160	132	43	60	42
29	60	22	287	290	-	324	415	179	155	52	60	42
30	61	42	338	318	-	337	422	155	135	86	58	41
31	56	-	371	343	-	345	-	145	-	52	64	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,163	90	56	69.8	-	-
November	934	68	19	31.1	-	-
December	3,588	371	52	116	-	-
Calendar year 1940	103,228	2,040	19	282	1.36	18.48
January	10,776	419	290	348	-	-
February	8,734	342	245	312	-	-
March	8,662	345	252	279	-	-
April	22,876	1,290	372	763	-	-
May	8,476	414	145	273	-	-
June	4,256	160	129	142	-	-
July	2,825	142	24	91.1	-	-
August	1,818	76	43	58.6	-	-
September	1,342	68	28	44.7	-	-
Water year 1940-41	76,450	1,290	19	209	1.00	13.66

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records of elevation of Owasco Lake.
Note.- Increase in contents in Owasco Lake during calendar year 1940, about 927,500,000 cubic feet (equivalent mean discharge, 29.3 sec.-ft.; run-off, 1.92 inches), increase in elevation, 3.23 ft.; decrease during water year 1940-41, about 157,900,000 cubic feet (equivalent mean discharge, 5.01 sec.-ft.; run-off, 0.33 inch), decrease in elevation, 0.55 ft.

Onondaga Creek at Syracuse, N. Y.

Location.- Water-stage recorder and control of steel plate bolted on steel sheet piling, lat. 43°00'35", long. 76°09'00", about 75 feet upstream from end of channel improvement, 300 feet upstream from Ballantyne Road bridge, and about 2 miles south of the center of Syracuse, Onandaga County. Datum of gage is 401.25 feet above mean sea level, datum of 1929.

Drainage area.- 92.2 square miles.

Records available.- November 1939 to September 1941.

Extremes.- Maximum discharge during year, 2,150 second-feet Apr. 6 (gage height, 7.25 feet); minimum, 1.2 second-feet (regulated) Sept. 12 (gage height, 1.85 feet); minimum daily, 9.2 second-feet (regulated) Aug. 13, Sept. 30.
1939-41: Maximum discharge, 2,320 second-feet Apr. 1, 1940 (gage height, 7.45 feet); minimum, that of Sept. 12, 1941; minimum daily, that of Aug. 13 and Sept. 30, 1941.

Remarks.- Records good. Diurnal fluctuation at low and medium stages caused by mills.

Rating tables, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28				Dec. 28 to Sept. 30					
2.1	10.0	2.7	77	2.0	5.3	2.6	63.5	5.1	805
2.2	16.5	2.9	110	2.1	10.7	2.9	111	5.9	1,200
2.3	24.7	3.2	176	2.2	18.0	3.2	174	6.7	1,720
2.4	35.3	3.8	335	2.3	27.0	3.7	307		
2.5	47.7			2.4	37.7	4.4	519		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	19	32	233	82	74	260	98	39	19	32	24
2	16	21	38	182	90	82	310	94	40	17	23	19
3	16	30	36	172	*86	*87	*404	86	36	16	18	12
4	16	24	31	173	78	199	538	83	34	16	16	12
5	16	22	32	144	74	166	681	94	37	17	16	13
6	17	25	*29	*123	64	135	1,700	104	36	12	16	14
7	16	33	42	120	89	107	1,170	85	a32	14	15	12
8	18	32	70	114	120	*113	693	118	a29	14	13	13
9	19	30	68	106	100	102	528	95	a27	14	11	29
10	17	*29	62	107	90	103	460	88	26	13	11	41
11	17	28	58	101	94	89	413	78	25	15	12	23
12	17	30	57	86	90	106	364	71	24	41	12	19
13	18	30	276	90	92	88	325	66	32	25	9.2	18
14	17	26	161	68	125	92	353	63	30	18	11	15
15	19	35	90	82	342	102	328	60	34	16	12	13
16	27	47	101	76	210	117	265	57	34	14	15	12
17	22	39	226	88	155	150	239	58	44	20	23	11
18	22	38	110	205	135	94	212	60	32	20	16	12
19	29	35	103	220	117	122	243	54	26	20	14	12
20	24	32	89	104	114	121	314	53	24	21	12	12
21	25	39	98	100	117	114	239	51	22	17	12	12
22	26	35	101	108	114	111	207	48	22	14	12	13
23	23	32	89	165	109	119	179	48	22	14	15	11
24	22	31	70	105	93	194	163	49	26	14	14	12
25	21	28	72	117	88	269	152	48	25	12	14	12
26	21	26	72	112	82	217	141	45	23	12	16	11
27	21	26	115	100	76	234	132	43	17	11	14	11
28	20	28	311	90	72	309	120	52	16	12	12	11
29	19	27	*543	84	-	317	112	66	21	16	12	16
30	20	28	469	70	-	255	104	52	18	44	11	9.2
31	25	-	313	82	-	231	-	41	-	61	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	621	29	15	20.0	0.217	0.25
November	905	47	19	30.2	.328	.37
December	3,964	543	29	128	1.39	1.60
Calendar year 1940	47,182	1,870	14	129	1.40	19.05
January	3,727	233	68	120	1.30	1.50
February	3,098	342	64	111	1.20	1.25
March	4,639	317	74	150	1.63	1.88
April	11,349	1,700	104	378	4.10	4.57
May	2,108	118	41	68.0	.738	.85
June	853	44	16	28.4	.308	.34
July	589	61	11	19.0	.206	.24
August	451.2	32	9.2	14.6	.158	.18
September	454.2	41	9.2	15.1	.164	.18
Water year 1940-41	32,758.4	1,700	9.2	89.7	.973	13.21

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of record of Limestone Creek at Fayetteville.
Note.- Stage-discharge relation affected by ice Dec. 3-10, Jan. 13, 15, 19-22, Jan. 27 to Feb. 1, Feb. 4-6, 8-12, 16-18, Feb. 25 to Mar. 2, Mar. 17-19.

Limestone Creek at Fayetteville, N. Y.

Location.- Water-stage recorder, lat. 43°01'45", long. 76°00'50", 100 feet downstream from Genesee Street bridge in Fayetteville, Onondaga County, and about 8 miles upstream from mouth. Datum of gage is 427.62 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 85.7 square miles, not including 15.7 square miles of Middle Branch of Tioughnioga Creek Basin, flow from which is probably almost completely diverted into Limestone Creek Basin through DeRuyter Reservoir.

Records available.- November 1939 to September 1941.

Extremes.- Maximum discharge during year, 2,360 second-feet Apr. 6 (inside gage height, 4.93 feet; equivalent outside gage height, 5.54 feet, by adjusting inside gage height for drawdown); minimum, 14 second-feet (regulated) Aug. 17 (gage height, 1.365 feet).
1939-41: Maximum discharge, 3,470 second-feet Mar. 31, 1940 (inside gage height, 8.07 feet; equivalent outside gage height, 8.5 feet, by adjusting inside gage height for drawdown, revised); minimum discharge, 14 second-feet (regulated) Aug. 10, 1940, Aug. 17, 1941; minimum gage height, 1.365 feet Aug. 17, 1941.

Remarks.- Records good except those for period of indefinite stage-discharge relation, which are fair. Flow affected by a canal diverting from Limestone Creek about 3 milee above station and returning water to the Creek about 400 feet above station, and by regulation of DeRuyter Reservoir.

Rating tables, water year 1940-41, except periods of ice effect, or indefinite stage-discharge relation (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 10		Dec. 11 to Sept. 30					
3.0	24.5	1.4	17	1.8	92	3.0	607
3.1	38	1.5	29	2.0	161	3.5	945
3.2	56	1.6	46	2.3	257	4.0	1,350
3.3	79	1.7	67	2.6	389	4.5	1,860
3.4	106						

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	54	56	297	89	74	328	93	44	28	46	38
2	34	54	54	228	92	80	474	88	45	27	36	30
3	35	60	52	217	*82	*87	636	83	41	27	30	26
4	36	51	50	218	76	170	810	79	40	26	27	24
5	35	46	56	167	74	171	930	100	42	25	25	24
6	35	50	*59	*130	70	144	*1,850	110	44	24	25	24
7	37	57	57	130	93	*115	1,240	84	42	23	24	25
8	58	58	89	122	114	120	870	137	37	25	24	26
9	48	58	79	120	108	112	724	97	36	24	24	36
10	42	55	e74	131	94	102	643	88	35	24	24	38
11	39	73	e72	122	98	93	581	82	35	28	21	34
12	38	81	161	98	92	98	505	72	34	29	23	34
13	37	83	549	104	95	87	448	67	39	29	24	31
14	37	66	269	86	136	92	543	63	42	27	24	27
15	42	96	149	92	352	100	425	59	43	25	23	25
16	51	105	234	90	240	118	300	56	94	25	28	25
17	46	75	389	115	191	145	262	56	100	30	28	24
18	44	67	178	283	168	104	219	58	46	33	28	24
19	44	60	168	225	126	125	256	53	35	29	26	24
20	45	58	165	120	114	120	336	53	29	27	24	24
21	48	64	206	110	121	115	233	49	27	25	24	23
22	49	60	199	118	117	108	216	47	27	25	25	22
23	47	58	177	188	114	110	177	48	27	25	28	23
24	53	55	136	116	97	162	159	48	34	24	27	24
25	51	55	149	120	88	227	147	45	30	24	27	22
26	50	44	170	112	84	204	133	43	28	22	25	22
27	49	52	298	102	80	214	127	42	26	22	25	22
28	48	52	897	98	74	298	119	55	25	26	24	21
29	47	50	*827	92	-	330	105	65	26	27	24	21
30	50	56	894	84	-	251	94	55	27	36	23	21
31	55	-	437	90	-	245	-	47	-	35	26	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,365	58	34	44.0	-	-
November	1,853	105	44	61.8	-	-
December	7,350	897	50	237	-	-
Calendar year 1940	56,694	2,740	30	155	1.81	24.58
January	4,327	297	84	140	-	-
February	3,279	352	70	117	-	-
March	4,521	330	74	146	-	-
April	13,890	1,850	94	463	-	-
May	2,122	137	42	68.5	-	-
June	1,178	100	25	39.3	-	-
July	826	36	22	26.6	-	-
August	812	46	21	26.2	-	-
September	784	38	21	26.1	-	-
Water year 1940-41	42,307	1,850	21	116	1.35	18.35

* Winter discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge computed on basis of comparison with records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 3, 4 Jan. 6-9, 13-16, 20, 21, 24, 25, 29-31, Feb. 3-6, 9-12, Feb. 25 to Mar. 1, Mar. 17-20.

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

Location.- Water-stage recorder, lat. 43°18'05", long. 75°37'10", in Taberg, Oneida County, at highway bridge just downstream from Furnace Creek.

Drainage area.- 189 square miles.

Records available.- April 1923 to September 1941.

Average discharge.- 18 years, 534 second-feet.

Extremes.- Maximum discharge during year, 9,080 second-feet Dec. 30 (gage height, 7.52 feet); minimum, 5.4 second-feet (regulated), June 28 (gage height, -0.10 foot).
1923-41: Maximum discharge, about 16,500 second-feet Oct. 6, 1932 (gage height, 9.18 feet), from rating curve extended above 2,700 second-feet by logarithmic plotting; minimum, that of June 28, 1941.

Remarks.- Records good except those for periods of ice effect or fragmentary gage-height record, which are fair.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 30, Sept. 1-30

0.4	32	2.4	698
.5	41	2.9	1,050
.7	64	3.4	1,500
.9	95	4.0	2,200
1.1	138	4.7	3,240
1.3	194	5.3	4,320
1.6	302	5.6	4,950
2.0	478		

Dec. 30 to Sept. 1

0.0	8.4	.7	73	2.7	851
.1	12.4	.9	107	3.4	1,380
.2	17.7	1.1	150	4.1	2,100
.3	24.6	1.4	232	5.0	3,350
.4	33.5	1.8	373	5.9	4,990
.5	44.5	2.2	556	6.5	6,320

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	173	258	1,440	195	205	313	244	71	83	77	2,990
2	66	801	283	905	190	200	416	224	65	31	62	1,440
3	59	1,100	242	*779	185	195	613	204	64	32	48	506
4	55	702	215	*f700	*180	260	903	190	57	19	33	246
5	52	441	*250	f560	175	340	1,010	190	66	14	24	245
6	50	793	225	485	175	320	1,950	192	47	16	18	1,030
7	61	889	277	402	225	300	2,210	188	54	24	15	858
8	129	569	360	359	284	280	2,250	335	46	170	12	384
9	112	391	313	370	290	*257	2,330	323	36	257	11	234
10	88	309	303	368	280	239	2,600	254	49	138	12	216
11	74	315	296	330	270	*230	*2,750	206	32	90	8.8	335
12	68	1,310	294	290	260	220	2,950	185	26	137	26	234
13	65	1,130	776	260	258	215	2,730	163	46	115	24	158
14	63	658	646	225	267	210	3,440	149	45	69	19	117
15	141	660	610	225	508	205	3,750	135	78	39	20	88
16	341	598	560	220	535	201	3,690	125	96	51	36	78
17	222	449	1,710	f280	550	228	2,400	140	105	40	51	59
18	169	383	1,260	f360	509	239	1,960	199	118	90	40	50
19	185	333	1,050	396	409	225	1,560	182	95	147	33	43
20	145	426	807	360	344	215	1,960	158	37	312	28	41
21	120	739	758	342	319	210	1,550	133	57	176	22	41
22	95	978	698	f320	285	203	1,010	115	34	95	21	41
23	128	1,050	592	309	266	210	691	115	50	60	37	37
24	173	703	463	262	260	236	545	106	27	55	39	36
25	177	539	429	269	245	266	472	96	41	22	64	35
26	165	322	395	f230	230	279	413	93	20	16	371	34
27	119	277	552	f225	225	296	375	89	12	10	276	34
28	103	304	*3,210	221	215	306	332	94	14	32	149	36
29	82	290	4,920	211	-	329	298	101	42	86	87	41
30	93	292	6,250	202	-	302	266	92	58	127	57	47
31	148	-	2,520	200	-	303	-	76	-	112	181	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,622	341	50	117	0.619	0.71
November	17,924	1,310	173	597	3.16	3.53
December	31,822	6,250	215	1,027	5.43	6.26
Calendar year 1940	180,474	6,250	21	493	2.61	35.51
January	12,105	1,440	200	390	2.06	2.38
February	8,134	550	175	290	1.53	1.59
March	7,724	340	195	249	1.32	1.52
April	47,737	3,750	266	1,591	8.42	9.39
May	5,096	335	76	164	.868	1.00
June	1,588	118	12	52.9	.280	.31
July	2,665	312	10	86.0	.455	.52
August	1,901.8	371	8.8	61.3	.324	.37
September	9,734	2,990	34	324	1.71	1.91
Water year 1940-41	150,052.8	6,250	8.8	411	2.17	29.49

* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed on basis of partly estimated gage height.
Note.- Stage-discharge relation affected by ice Dec. 4-6, Jan. 11-16, 20, Jan. 31 to Feb. 7, Feb. 10-12, Feb. 24 to Mar. 8, Mar. 11-15, 19-21.

Black River near Boonville, N. Y.

Location.- Water-stage recorder, lat. 43°30'35", long. 75°18'25", at highway bridge three-quarters of a mile upstream from Sugar River and 2 miles northeast of Boonville, Oneida County.
Drainage area.- 295 square miles.
Records available.- February 1911 to September 1941.
Average discharge.- 30 years (1911-41), 654 second-feet (unadjusted).
Extremes.- Maximum discharge during year, 7,460 second-feet Dec. 30 (gage height, 9.88 feet); minimum, 60 second-feet (regulated), Aug. 11 (gage height, 3.33 feet).
1911-41: Maximum discharge, about 10,000 second-feet Mar. 28, 1913 (gage height, about 12.5 feet); minimum, about 5 second-feet (regulated), Aug. 26, 1918 (gage height, 2.40 feet).
Remarks.- Records good except those for periods of ice effect or fragmentary gage-height record, which are fair. Flow partly regulated by several headwater reservoirs. Forestport feeder diverts water from State Pond at Forestport. That portion of diverted water which does not pass down Black River Canal (flowing south) returns to Black River below station through Mill Creek sluiceway.

Rating tables, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 30				Dec. 30 to Sept. 30					
4.1	187	6.1	1,200	3.4	68	4.6	364	7.6	2,900
4.2	214	6.9	1,900	3.6	96	5.0	546	8.5	4,360
4.5	311	7.8	2,900	3.8	132	5.5	840	9.6	6,750
4.9	475	8.4	3,840	4.0	176	6.1	1,280		
5.4	736	8.6	4,230	4.3	258	6.8	1,930		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	251	263	453	2,680	360	340	500	627	175	149	359	2,930
2	240	415	430	1,820	360	340	680	578	166	183	274	3,290
3	238	568	410	1,370	360	350	853	516	158	138	208	1,380
4	227	450	380	1,180	350	390	984	458	148	110	173	752
5	212	363	410	940	350	470	*1,050	442	151	99	150	623
6	210	388	390	*720	340	780	1,310	406	156	92	105	705
7	252	639	460	580	*370	760	1,740	341	146	114	92	638
8	384	693	460	500	430	660	2,130	426	138	354	85	515
9	357	598	430	520	450	580	2,180	505	130	262	81	451
10	305	519	420	560	440	540	2,330	438	122	194	80	429
11	269	517	410	540	430	500	2,600	379	132	159	83	657
12	250	1,250	400	480	420	*480	2,800	337	135	484	96	684
13	237	1,930	540	500	410	460	2,910	333	129	484	106	607
14	227	1,320	800	440	410	450	3,140	317	144	348	97	688
15	255	1,130	780	420	470	450	4,090	275	289	235	94	607
16	291	1,200	740	400	540	450	4,050	253	363	160	110	572
17	280	1,010	2,100	450	490	460	3,340	255	479	245	143	524
18	262	852	2,050	520	450	430	2,820	303	571	f290	150	467
19	245	748	1,690	560	420	400	2,340	286	363	f250	125	402
20	236	689	1,160	520	400	380	2,720	256	249	240	114	361
21	228	722	934	460	380	370	2,510	230	179	261	105	337
22	218	714	813	500	370	370	1,600	211	144	276	89	300
23	219	743	676	480	380	430	1,140	227	143	209	88	252
24	237	*671	576	450	370	440	977	247	139	180	85	190
25	238	586	596	430	370	420	928	225	125	166	104	157
26	223	463	561	410	360	410	887	211	115	159	219	144
27	207	473	554	400	360	410	860	203	104	160	172	140
28	204	481	1,410	390	350	410	795	189	103	190	132	141
29	198	442	4,060	380	-	400	745	229	119	495	158	137
30	200	473	6,700	370	-	390	690	264	120	496	171	142
31	241	-	*4,380	370	-	400	-	209	-	449	248	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,641	384	198	246	0.834	0.96
November	21,310	1,930	263	710	2.41	2.69
December	36,173	6,700	380	1,167	3.96	4.56
Calendar year 1940	237,650	6,700	93	649	2.20	29.97
January	20,340	2,680	370	656	2.22	2.56
February	11,190	540	340	400	1.36	1.42
March	14,120	780	340	455	1.54	1.78
April	55,709	4,090	500	1,857	6.29	7.02
May	10,176	627	189	328	1.11	1.28
June	5,635	571	103	188	.637	.71
July	7,631	496	92	246	.834	.96
August	4,296	359	80	139	.471	.54
September	19,222	3,290	137	641	2.17	2.42
Water year 1940-41	213,443	6,700	80	585	1.98	26.90

Peak discharge.- Dec. 30 (3:30 p.m.) 7,460 sec.-ft.; Apr. 15 (10:45 a.m.) 4,320 sec.-ft.; Sept. 2 (4 a.m.) 4,250 sec.-ft.
* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed on basis of partly estimated gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 2-18, Jan. 4 to Apr. 2.

Black River at Watertown, N. Y.

Location.- Water-stage recorder, lat. 43°59'05", long. 75°55'30", in Watertown, Jefferson County, at Vanduzee Street bridge.
Drainage area.- 1,876 square miles.
Records available.- July 1920 to September 1941.
Average discharge.- 21 years, 3,799 second-feet.
Extremes (regulated).- Maximum discharge during year, 19,900 second-feet Dec. 31 (gage height, 7.97 feet); minimum, 41 second-feet July 13 (gage height, -0.05 foot); minimum daily, 600 second-feet Aug. 13.
1920-41: Maximum discharge, 33,900 second-feet Apr. 9, 1928 (gage height, 10.6 feet); minimum, 10 second-feet (estimated), Sept. 2, 1934 (gage height, -0.19 foot); minimum daily, 137 second-feet Sept. 4, 1939.
Maximum discharge known, about 39,700 second-feet sometime in April 1869.
Remarks.- Records excellent except those for periods of ice effect or fragmentary gage-height record, which are good. Flow partly regulated by Stillwater Reservoir, Fulton Chain of Lakes, and other reservoirs. During canal season water is diverted out of basin through Forestport feeder and Black River Canal (flowing south). Large diurnal fluctuation at low and medium stages caused by mills and power plants in Watertown and above.

Rating tables, water year 1940-41, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to April 8, June 19 to Sept. 30				April 9 to June 18			
1.3	869	4.0	5,880	1.0	672	4.0	6,240
1.6	1,210	5.0	8,710	1.4	1,090	5.0	9,190
1.9	1,610	6.0	12,100	1.9	1,755	6.1	12,950
2.3	2,260	7.0	15,800	2.5	2,780	7.3	18,000
3.0	3,610	7.8	19,100	3.2	4,240		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,330	1,640	1,700	17,700	2,100	b1,900	2,460	2,360	1,120	674	2,460	7,090
2	1,410	1,790	1,660	14,000	1,980	1,850	2,940	2,150	1,140	665	1,870	8,450
3	1,440	1,600	b2,000	11,100	1,840	1,400	3,550	1,910	1,040	767	1,370	8,840
4	1,380	2,620	b2,100	9,320	1,930	1,680	4,720	1,840	1,060	742	1,100	8,970
5	1,460	3,080	b1,950	*7,550	b2,050	1,960	6,030	1,640	1,090	782	846	7,270
6	1,100	2,540	b1,900	5,850	*b1,850	1,820	6,190	1,820	882	902	950	6,220
7	914	2,820	b2,050	5,250	1,950	2,090	7,920	1,910	882	723	992	5,930
8	1,140	3,240	2,120	4,550	2,050	2,100	10,400	1,760	958	722	938	5,130
9	1,580	f2,800	2,010	3,540	2,140	2,110	*12,100	1,920	896	1,070	898	4,280
10	1,850	f2,400	2,390	3,320	2,230	1,720	12,100	2,040	896	1,240	826	3,690
11	1,890	2,090	2,370	3,130	2,370	1,950	12,500	1,860	832	1,650	814	3,640
12	1,640	2,510	2,610	2,540	2,290	1,940	13,000	1,730	838	1,690	644	3,440
13	1,150	4,730	2,700	2,550	2,110	*2,000	13,600	1,660	784	717	600	3,100
14	1,170	5,340	3,130	b2,500	2,150	1,910	15,100	1,540	788	1,460	640	2,540
15	1,350	5,190	2,940	b2,400	2,380	1,870	16,400	1,420	795	1,790	1,100	2,250
16	1,320	4,620	3,310	b2,300	2,550	1,790	18,000	1,370	752	1,510	1,050	2,030
17	1,720	4,250	4,480	2,380	2,890	1,490	17,900	1,420	846	1,460	962	1,640
18	1,810	3,840	5,820	2,620	3,000	1,790	16,500	1,510	1,400	1,210	684	1,690
19	2,050	3,360	6,070	3,220	2,890	1,690	14,400	1,630	1,460	1,290	781	1,640
20	1,840	2,940	5,900	3,290	2,380	1,850	12,500	1,730	1,490	1,590	937	1,350
21	1,720	3,410	5,770	b3,100	2,200	1,690	10,800	1,580	1,500	1,220	876	1,240
22	1,730	*3,570	5,390	3,000	2,030	1,580	9,920	1,510	1,160	1,300	938	1,080
23	1,730	3,820	4,860	2,760	1,750	1,560	9,190	1,450	986	1,320	997	1,110
24	1,640	3,580	4,420	b2,600	1,820	1,360	7,650	1,350	953	1,200	971	1,070
25	1,740	3,230	3,560	b2,500	1,860	1,620	6,220	1,250	894	883	958	1,280
26	1,740	2,800	2,980	b2,300	2,080	1,810	4,970	1,200	992	976	1,600	1,110
27	1,620	2,530	3,290	b2,400	b2,000	1,950	3,840	1,200	928	920	2,010	1,230
28	1,170	1,750	4,760	b2,400	b1,950	2,150	3,250	1,180	699	981	1,800	1,100
29	1,540	1,790	8,340	2,310	-	2,470	3,060	1,180	912	1,040	1,440	1,130
30	1,550	1,820	12,400	2,220	-	2,440	2,720	1,160	730	1,560	1,370	1,100
31	1,610	-	19,000	2,180	-	2,330	-	1,110	-	2,830	1,310	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	47,334	2,050	914	1,527	-	-
November	91,700	5,340	1,600	3,057	-	-
December	133,980	19,000	1,660	4,322	-	-
Calendar year 1940	1,187,813	19,100	626	3,245	1.73	23.57
January	136,880	17,700	2,180	4,415	-	-
February	60,820	3,000	1,750	2,172	-	-
March	58,070	2,470	1,360	1,873	-	-
April	279,930	18,000	2,460	9,331	-	-
May	49,590	2,360	1,110	1,600	-	-
June	29,723	1,500	699	991	-	-
July	36,884	2,830	665	1,190	-	-
August	34,732	2,460	600	1,120	-	-
September	100,640	8,970	1,070	3,355	-	-
Water year 1940-41	1,060,283	19,000	600	2,905	1.55	21.01

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
f Fragmentary gage-height record; discharge computed on basis of power-plant record at Black River, N. Y.

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

Location.- Two water-stage recorders and concrete controls, lat. 43°27'20", long. 75°19'25", 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 1941 (canal seasons.)

Remarks.- Records good except those for periods of fragmentary gage-height record, which are poor. Records show combined flow at gages 1 and 2 and represent total diversion from Black River at Forestport, through Forestport feeder, into Mohawk River Basin. During period Nov. 13 to Apr. 29, when no water was diverted, canal carried a small flow made up of leakage through head gates and run-off from area draining into canal above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f52	74					-	18	48	f53	55	54
2	f26	90					-	17	48	f55	54	32
3	51	67					-	16	47	f53	53	56
4	52	77					-	26	47	f52	53	63
5	61	83					f14	30	48	f51	53	63
6	64	91					29	32	48	f53	52	66
7	54	91					23	39	47	f55	52	63
8	40	87					18	52	46	f38	52	61
9	40	85					14	54	43	f42	53	60
10	65	85					12	51	43	f54	53	62
11	66	85					11	51	43	54	52	50
12	65	116					9.2	50	44	f44	54	56
13	65	76					8.5	49	46	f52	54	54
14	65	38					9.9	49	47	f60	54	49
15	68	21					8.6	47	31	f60	54	58
16	70	f7.2					8.1	47	40	f58	54	57
17	69	-					6.4	47	34	f52	56	59
18	68	-					5.3	48	36	f45	55	59
19	69	-					5.1	48	52	58	55	59
20	67	-					6.8	48	51	58	52	58
21	67	-					5.6	47	49	57	53	59
22	67	-					4.8	46	51	58	53	58
23	68	-					5.9	47	53	55	52	58
24	70	-					15	48	52	56	53	57
25	69	-					14	49	52	54	56	57
26	68	-					14	43	f52	53	44	56
27	68	-					14	37	f51	54	38	57
28	68	-					13	48	f51	55	53	58
29	68	-					12	50	f51	56	55	57
30	68	-					15	50	f49	58	56	60
31	73	-					-	48	-	58	60	-

Month	Second-foot-days	Maximum	Minimum	Mean	
October	1,931	73	26	62.3	
November 1-16	1,173.2	116	7.2	73.3	
December	-	-	-	-	
Calendar year	-	-	-	-	
January	-	-	-	-	
February	-	-	-	-	
March	-	-	-	-	
April 5-30	302.2	29	4.8	11.6	
May	1,332	54	16	43.0	
June	1,400	53	31	46.7	
July	1,660	60	38	53.5	
August	1,643	60	38	53.0	
September	1,746	84	32	58.2	
Water year	-	-	-	-	

f Fragmentary gage-height record at gage 1; discharge computed on basis of recorded range in stage, gage-height graph for gage 2, and records of operation of gates at head of Forestport feeder.

Moose River at McKeever, N. Y.

Location.- Water-stage recorder, lat. 43°36'40", long. 75°06'35", half a mile west of McKeever, Herkimer County, and 2 miles downstream from South Branch of Moose River.

Drainage area.- 365 square miles.

Records available.- May 1922 to September 1941. June 1900 to December 1922 at site at Moose River, 2⅝ miles downstream.

Average discharge.- 33 years (1907-13, 14-41), 829 second-feet (unadjusted).

Extremes.- Maximum discharge during year, 6,920 second-feet Apr. 16 (gage height, 10.15 feet); minimum, 81 second-feet (regulated) May 25 (gage height, 1.48 feet).
1900-41: Maximum discharge recorded, about 16,500 second-feet Mar. 27, 1913 (gage height, 16.2 feet, from floodmarks, site and datum then in use); minimum, about 42 second-feet (regulated) July 21, 23, and 25-27, 1913.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated to some extent by Fulton Chain of Lakes. Occasional slight diurnal fluctuation during low and medium stages caused by paper mill in McKeever.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.6	105	2.9	517	8.0	4,300
1.7	127	3.5	795	9.0	5,450
1.8	151	4.5	1,370	9.7	6,330
2.0	205	6.0	2,470		
2.4	331	7.0	3,320		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	232	456	500	2,610	440	340	418	441	a215	174	449	2,850
2	229	453	470	1,980	430	330	445	568	a200	164	263	2,210
3	295	1,110	490	1,770	420	340	425	370	a185	149	247	1,030
4	258	1,120	620	1,510	410	340	496	388	a170	134	223	804
5	272	721	620	1,040	410	330	509	449	a161	127	205	719
6	300	720	600	1,040	400	320	*543	345	161	118	194	878
7	345	950	580	*620	390	320	704	343	141	116	177	928
8	418	760	820	700	400	320	898	338	141	174	167	818
9	755	587	677	740	*450	310	1,120	338	139	197	159	750
10	573	496	682	680	440	*310	1,380	405	132	290	154	690
11	396	453	668	620	430	310	1,910	389	125	327	149	688
12	311	1,200	641	580	430	310	2,270	344	123	320	146	765
13	211	2,110	682	540	420	300	2,720	322	123	768	144	666
14	260	1,330	775	500	450	300	4,700	274	122	429	132	540
15	299	1,060	928	520	580	310	6,230	270	145	324	127	390
16	437	1,210	1,040	620	540	330	6,090	258	250	166	118	388
17	632	1,020	1,340	620	500	350	4,580	252	272	216	116	355
18	600	825	1,450	640	470	340	4,060	244	355	368	125	308
19	521	686	1,270	700	450	330	3,290	261	445	262	132	226
20	460	560	1,060	660	430	320	3,260	272	478	334	129	300
21	449	551	878	620	410	320	3,140	269	256	318	125	307
22	453	632	835	600	400	310	2,130	236	210	196	120	364
23	538	850	745	580	390	320	1,650	216	267	188	123	341
24	521	*835	602	560	380	370	1,260	209	138	167	125	338
25	449	755	596	540	370	410	1,070	144	150	149	127	334
26	480	623	664	520	360	430	831	163	151	134	151	366
27	386	614	551	500	350	450	777	177	144	120	229	400
28	396	540	1,010	490	*340	450	683	146	134	128	217	376
29	430	470	4,130	480	-	440	592	233	149	816	183	384
30	393	440	5,770	460	-	430	401	a23e	167	976	159	372
31	513	-	4,020	450	-	420	-	a230	-	674	174	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12,812	755	211	413	-	-
November	24,137	2,110	440	805	-	-
December	35,714	5,770	470	1,152	-	-
Calendar year 1940	260,744	6,060	127	712	1.95	26.58
January	24,490	2,610	450	790	-	-
February	11,890	580	340	425	-	-
March	10,810	450	300	349	-	-
April	58,582	6,230	401	1,953	-	-
May	9,132	568	144	295	-	-
June	5,849	478	122	195	-	-
July	9,023	976	116	291	-	-
August	5,289	449	116	171	-	-
September	19,885	2,850	226	663	-	-
Water year 1940-41	227,613	6,230	116	624	1.71	23.20

Peak discharge.- Dec. 30 (10:30 a.m.) 6,670 sec.-ft.; Apr. 15 (6:50 a.m.) 6,780 sec.-ft.; Apr. 16 (10:15 a.m.) 6,020 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records at nearby stations.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 8, Jan. 6 to Mar. 31.

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

Location.- Staff gage, lat. 43°42'50", long. 74°58'10", at Old Forge, Herkimer County, 400 feet downstream from State dam.

Drainage area.- 52 square miles.

Records available.- November 1911 to September 1941.

Average discharge.- 29 years (1912-41), 103 second-feet (unadjusted).

Extremes (regulated).- Maximum daily discharge during year, 291 second-feet Oct. 8, 16 (gage height, 2.9 feet); maximum gage height, 3.3 feet Sept. 28-30, backwater from temporary dam; minimum daily, 0.5 second-foot Aug. 28-31, Sept. 3-18 when gates in dam were closed and no spilling occurred.

1911-41: Maximum daily discharge, 862 second-feet Mar. 23, 1921, from rating curve extended above 450 second-feet by logarithmic plotting; minimum daily, about 0.1 second-foot many times during 1938-39, when gates in dam were closed.

Remarks.- Records good except those for periods of backwater, which are fair. On days of changes in gate openings the discharge is averaged for intervals of a day from graph based on gage readings and record of gate operations. Gage read twice daily. Flow regulated by Fulton Chain of Lakes.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	154	236	35	54	196	152	91	2.1	1.6	1.3	1.0	0.6
2	216	226	75	54	196	152	85		1.4	1.3	1.0	.6
3	226	155	226	54	196	152	47		1.4	1.2	1.0	.5
4	226	2.9	226	54	187	144	1.6		1.4	1.2	1.0	.5
5	206	2.9	226	56	187	144	1.4		1.6	1.2	1.0	.5
6	206		216	56	187	144	1.4	2.2	1.6	1.2	1.0	.5
7	230		216	56	187	137	1.4		1.6	1.2	1.0	.5
8	291		206	55	187	137	1.2		1.6	1.2	.9	.5
9	143		206	55	187	137	1.2		1.6	1.1	.9	.5
10	4.1		206	55	178	137	1.1		1.6	1.1	.9	.5
11	4.3		206	57	178	137	1.1		1.6	.9	.9	.5
12	4.1		196	55	178	137	1.1		1.6	.9	.8	.5
13	2.8		196	55	178	139	1.1		1.6	.9	.8	.5
14	87		206	94	178	152	1.0		1.6	.9	.8	.5
15	280	1.8	196	216	178	144	1.0		1.6	.9	.8	.5
16	291		206	226	178	137	1.0	2.1	1.6	1.1	.7	.5
17	280		132	216	169	123	1.0		1.6	1.1	.7	.5
18	280		58	216	169	130	.9		1.6	.9	.7	.5
19	280		56	216	169	123	.9		1.6	.9	.7	72
20	269		56	206	169	116	.9		1.9	.7	.6	155
21	269		56	206	169	116	.8		1.4	.9	.6	155
22	280		54	206	169	116	.8		1.4	.9	.6	155
23	269		54	206	160	110	.8		1.4	.9	.6	160
24	258		52	206	160	110	.7		1.4	1.1	.6	165
25	269	9.0	51	206	160	110	.7		1.4	1.1	.6	215
26	247	34	51	196	152	104	.7	2.1	1.4	1.1	.6	240
27	247	34	50	196	152	97	1.1		1.2	1.1	.6	240
28	236	34	52	196	152	97	1.1		1.2	1.1	.5	250
29	236	34	52	196	-	91	1.1		1.4	1.1	.5	250
30	236	34	52	196	-	97	.9		1.4	1.1	.5	245
31	247	-	52	196	-	97	-		-	1.1	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,474.3	291	2.8	209	-	-
November	836.0	236	-	27.9	-	-
December	3,922	226	35	127	-	-
Calendar year 1940	25,775.5	314	1.2	70.4	1.35	18.45
January	4,312	226	54	139	-	-
February	4,906	196	152	175	-	-
March	3,919	152	91	126	-	-
April	251.0	91	.7	8.37	-	-
May	66.0	-	-	2.13	-	-
June	45.3	1.9	1.2	1.51	-	-
July	32.7	1.3	.7	1.05	-	-
August	23.4	1.0	.5	.75	-	-
September	2,301.2	250	.5	76.7	-	-
Water year 1940-41	27,088.9	291	.5	74.2	1.43	19.38

Note.- Backwater from North Branch of Moose River Nov. 4, 6-29, Dec. 1, 19-24, Dec. 29 to Jan. 5, Apr. 12-23; from debris on control May 2 to June 12; from temporary dam on control July 1 to Sept. 30; discharge computed on basis of nine discharge measurements, gage heights, and records of gate operation at Old Forge Dam. Increase in combined storage in Old Forge and Sixth Lake Reservoirs during calendar year 1940, about 402,000,000 cubic feet (equivalent mean discharge, 12.7 sec.-ft.; run-off, 3.32 inches); decrease during water year 1940-41, about 46,000,000 cubic feet (equivalent mean discharge 1.46 sec.-ft.; run-off, 0.38 inch).

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

Location.- Water-stage recorder, lat. 43°37'45", long. 75°04'55", half a mile upstream from confluence with South Branch and 1½ miles northeast of McKeever, Herkimer County.

Drainage area.- 148 square miles.

Records available.- October 1925 to September 1941.

Average discharge.- 16 years, 320 second-feet (unadjusted).

Extremes (regulated).- Maximum discharge during year, 1,240 second-feet Apr. 17 (gage height, 5.37 feet); minimum, 40 second-feet Oct. 1 (gage height, 1.95 feet).
1925-41: Maximum discharge, 2,100 second-feet Apr. 27, 1926 (gage height, 6.6 feet); minimum, 36 second-feet Aug. 15, 1940.

Remarks.- Records good except those for periods of ice effect or no gage-height record and those below 90 second-feet, which are fair. Flow partly regulated by Fulton Chain of Lakes.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.0	44	2.8	150	4.0	499
2.2	63	3.1	213	4.6	775
2.5	102	3.5	322	5.4	1,255

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	307	220	917	300	225	185	174	80	75	110	485
2	167	332	210	900	290	220	200	195	78	70	104	385
3	246	341	240	791	290	220	190	182	73	65	101	412
4	248	231	390	690	280	225	177	173	70	60	102	381
5	254	142	380	490	280	225	167	169	68	57	106	344
6	254	142	370	490	280	220	*171	147	67	53	106	344
7	259	145	360	310	280	215	199	104	64	55	104	361
8	325	150	460	*340	*290	210	216	106	61	57	99	464
9	341	145	410	370	300	210	f259	114	59	76	96	460
10	170	138	420	340	300	205	f316	122	58	78	94	409
11	89	145	410	310	290	205	f402	123	56	73	88	357
12	70	253	400	290	280	*205	464	122	55	73	84	310
13	63	286	410	270	280	200	528	119	55	71	75	272
14	60	289	440	260	290	200	775	114	55	68	68	246
15	192	298	520	280	310	205	894	110	56	65	63	228
16	364	289	540	400	310	205	1,110	104	54	63	62	208
17	374	275	600	390	300	210	1,200	104	56	74	62	190
18	374	264	528	400	290	210	1,200	108	58	70	60	169
19	361	f248	438	400	280	205	1,120	110	58	65	60	154
20	354	f233	410	390	270	200	1,020	110	59	61	57	245
21	348	f223	380	370	260	195	906	104	59	58	55	298
22	338	f223	380	360	260	190	796	96	59	55	57	292
23	335	f254	320	350	250	190	695	92	61	52	67	284
24	335	f267	280	340	245	215	592	87	61	49	68	275
25	328	*f259	270	330	240	220	499	83	59	48	71	286
26	325	260	260	330	235	215	430	82	57	46	84	319
27	319	264	251	320	230	210	374	79	56	44	85	335
28	313	250	422	320	225	200	322	79	55	51	82	332
29	307	235	660	310	-	195	248	83	65	68	75	328
30	304	225	878	300	-	190	125	83	70	101	69	325
31	316	-	940	300	-	190	-	83	-	120	110	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,183	374	50	264	-	-
November	7,113	341	138	237	-	-
December	13,197	940	210	426	-	-
Calendar year 1940	90,884	1,120	38	248	1.68	22.82
January	12,658	917	260	408	-	-
February	7,735	310	225	276	-	-
March	6,430	225	190	207	-	-
April	15,780	1,200	125	526	-	-
May	3,561	195	79	115	-	-
June	1,841	80	54	61.4	-	-
July	2,031	120	44	65.5	-	-
August	2,524	110	55	81.4	-	-
September	9,498	485	154	317		
Water year 1940-41	90,551	1,200	44	248	1.68	22.73

* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed on basis of recorded range in stage and records at nearby stations.
Note.- Stage-discharge relation affected by ice Nov. 26, Nov. 28 to Dec. 17, Dec. 20-26, Jan. 5 to Apr. 3.

Independence River at Sperryville, N. Y.

Location.- Staff gage, lat. 43°46'30", long. 75°18'05", half a mile upstream from highway bridge at Sperryville, Lewis County, and 9½ miles east of Lowville.

Drainage area.- 85 square miles.

Records available.- December 1927 to September 1941.

Average discharge.- 13 years (1928-41), 164 second-feet.

Extremes.- Maximum discharge during year, 2,550 second-feet Sept. 1 (gage height, 6.9 feet, from graph based on gage readings); minimum, 16 second-feet June 27 (gage height, 1.00 foot).

1927-41: Maximum discharge, 4,700 second-feet Oct. 6, 1932 (gage height, 9.2 feet, from graph based on gage readings), from rating curve extended above 1,310 second-feet; minimum, 14 second-feet Aug. 31 to Sept. 2, 1934, and Sept. 2 and 3, 1939; minimum gage height, 0.88 foot Aug. 31 to Sept. 2, 1934.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read twice daily.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 6						Apr. 7 to Sept. 30					
1.0	16	1.8	90	3.5	527	1.0	16	1.8	92	3.6	552
1.1	22	2.0	120	4.0	735	1.1	22	2.0	123	4.3	837
1.2	29	2.2	155	4.5	975	1.2	29	2.3	180	5.1	1,260
1.4	45	2.6	244	5.0	1,270	1.4	46	2.6	249	6.0	1,840
1.6	66	3.0	357	5.6	1,660	1.6	67	3.0	357		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	37	90	691	56	a43	70	100	50	22	77	1,810
2	22	43	84	421	54	43	104	97	43	21	46	1,360
3	21	100	80	297	52	43	137	68	39	18	35	481
4	20	128	76	232	50	50	165	58	35	18	29	225
5	19	128	74	a175	48	58	197	84	33	17	25	180
6	19	112	72	*146	46	56	257	59	31	17	21	562
7	18	171	70	137	*45	52	418	121	29	19	20	643
8	47	155	98	a128	56	50	450	84	28	46	18	372
9	73	106	92	a120	64	48	626	150	28	65	18	249
10	51	97	86	110	60	46	705	104	23	77	22	357
11	40	116	a82	102	56	45	791	84	21	40	18	483
12	32	208	a80	96	54	44	935	71	20	67	18	387
13	29	455	186	a90	52	43	1,040	66	20	65	17	300
14	27	297	175	a84	52	*43	1,350	57	26	53	17	170
15	48	208	244	80	60	43	1,840	57	28	52	18	115
16	112	186	297	76	78	46	*1,440	56	34	42	19	92
17	90	175	405	74	74	50	935	90	41	44	31	77
18	66	146	357	94	70	60	665	160	60	35	33	62
19	63	112	342	130	66	58	450	160	45	39	29	50
20	60	a104	312	118	62	56	483	123	35	34	23	48
21	57	120	297	108	58	54	418	98	28	31	21	46
22	49	165	284	100	56	52	357	84	26	28	21	43
23	40	*257	257	92	54	50	225	73	23	23	33	49
24	35	208	197	86	52	52	202	64	22	20	38	44
25	33	175	a175	80	50	54	202	58	20	20	47	39
26	36	137	a155	74	48	56	132	55	17	17	59	37
27	35	104	186	70	a46	60	115	52	16	17	50	34
28	27	97	360	66	a44	72	123	50	17	42	44	32
29	28	90	1,410	62	-	80	95	60	22	307	42	31
30	28	96	1,660	60	-	80	102	63	22	314	41	31
31	32	-	1,120	58	-	76	-	63	-	152	80	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,282	112	18	41.4	0.487	0.56
November	4,533	455	37	151	1.78	1.99
December	9,403	1,660	70	303	3.56	4.10
Calendar year 1940	54,580	1,660	16	149	1.75	23.87
January	4,257	691	58	137	1.61	1.86
February	1,563	78	44	55.8	.656	.68
March	1,663	80	43	53.6	.631	.73
April	15,029	1,840	70	501	5.89	6.57
May	2,569	160	50	82.9	.975	1.12
June	882	60	16	29.4	.346	.39
July	1,762	314	17	56.8	.668	.77
August	1,010	80	17	32.6	.384	.44
September	8,409	1,810	31	280	3.29	3.67
Water year 1940-41	52,362	1,840	16	143	1.68	22.88

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Deer River at Copenhagen, N. Y., West Branch of Oswegatchie River near Harrisville, N. Y., and East Branch of Fish Creek at Taberg, N. Y.

Note.- Stage-discharge relation affected by ice Nov. 30 to Dec. 10, Jan. 10 to Mar. 30.

Stillwater Reservoir near Beaver River, N. Y.

Location.- Float-tape gage, lat. 43°53'50", long. 75°03'05", at Stillwater Reservoir dam, 7⅛ miles west of Beaver River post office, Herkimer County. Datum of gage is mean sea level, adjustment of 1912.

Drainage area.- 172 square miles.

Records available.- February 1925 to September 1941.

Extrsmes.- Maximum elevation during year, 1,673.60 feet May 9, 10 (contents, 3,129,000,000 cubic feet); minimum, 1,659.93 feet Apr. 3 (contents, 723,000,000 cubic feet).
1925-41: Maximum elevation, 1,679.46 feet May 4, 1929 (contents, 4,669,000,000 cubic feet); minimum since first filling, 1,644.80 feet Mar. 25-27, 1940 (reservoir empty).

Remarks.- Reservoir originally formed about 1885; enlarged at various times and in 1924 enlarged to a usable capacity of 4,623,000,000 cubic feet between elevations 1,650.3 feet and 1,679.3 feet (high flow line) above mean sea level. Elevation of gate sill of lowest outlet, 1,642.3 feet. Capacity below elevation 1,650.3 feet, about 90,000,000 cubic feet. Reservoir is used to regulate flow of Beaver and Black Rivers for control of floods, for power development, and for general welfare of the public. Records of contents given herein represent those above elevation 1,650.3 feet. Daily observations are made about 8 a.m.

Cooperation.- Record furnished by Board of Black River Regulating District.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67.98	61.98	66.54	69.85	66.58	63.46	60.05	72.97	73.19	71.15	69.43	67.88
2	67.77	61.76	66.55	70.19	68.40	63.44	59.99	73.07	73.14	71.06	69.54	68.30
3	67.56	61.80	66.50	70.48	66.23	63.33	59.93	73.17	73.07	70.96	69.59	68.48
4	67.34	61.80	66.41	70.75	66.05	63.14	60.05	73.23	73.02	70.85	69.62	68.61
5	67.12	61.79	66.35	70.97	67.88	62.97	60.22	73.34	72.97	70.73	69.61	68.71
6	67.03	61.83	66.27	71.16	67.70	62.62	60.39	73.41	72.91	70.61	69.33	69.02
7	66.90	61.98	66.18	71.23	67.53	62.36	60.61	73.49	72.85	70.50	69.14	69.33
8	66.79	62.13	66.25	71.22	67.44	62.09	60.87	73.57	72.75	70.50	68.95	69.51
9	66.59	62.27	66.21	71.18	67.27	62.15	61.20	73.60	72.66	70.46	68.81	69.62
10	66.36	62.41	66.15	71.15	67.09	62.05	61.57	73.60	72.56	70.41	68.66	69.73
11	66.12	62.49	66.01	71.11	66.90	61.78	62.07	73.59	72.46	70.33	68.50	69.98
12	65.88	62.78	65.90	71.06	66.73	61.57	62.70	73.57	72.37	70.32	68.32	70.10
13	65.80	63.16	65.91	70.99	66.54	61.29	63.49	73.56	72.28	70.26	68.16	70.14
14	65.69	63.43	65.91	70.93	66.32	61.03	64.47	73.53	72.20	70.17	68.03	70.15
15	65.50	63.66	66.04	70.86	66.16	60.76	65.97	73.50	72.17	70.07	67.84	70.15
16	65.38	63.87	66.07	70.77	65.97	60.77	67.37	73.47	72.11	69.97	67.71	70.13
17	65.17	64.07	66.22	70.66	65.80	60.79	68.34	73.44	72.06	69.89	67.71	70.10
18	64.93	64.25	66.33	70.57	65.60	60.71	69.13	73.56	72.10	69.90	67.58	70.08
19	64.71	64.39	66.58	70.51	65.40	60.63	69.75	73.58	72.05	69.68	67.45	70.05
20	64.64	64.49	66.73	70.42	65.20	60.47	70.34	73.58	71.97	69.57	67.28	70.01
21	64.51	64.68	66.91	70.31	65.01	60.33	70.77	73.56	71.94	69.47	67.13	69.95
22	64.26	64.85	67.10	70.16	64.81	60.18	71.25	73.53	71.95	69.36	66.98	69.90
23	64.01	65.15	67.25	70.03	64.86	60.26	71.57	73.51	71.98	69.26	66.88	69.85
24	63.76	65.40	67.25	69.88	64.76	60.34	71.81	73.48	71.86	69.15	66.75	69.80
25	63.50	65.67	67.20	69.73	64.49	60.30	72.06	73.44	71.78	69.08	66.61	69.70
26	63.24	65.80	67.13	69.59	64.23	60.23	72.26	73.38	71.65	68.93	66.84	69.52
27	63.16	65.99	67.06	69.47	63.98	60.16	72.44	73.34	71.54	68.81	67.09	69.41
28	63.02	66.15	67.06	69.26	63.74	60.08	72.58	73.32	71.43	68.76	67.23	69.25
29	62.75	66.27	67.56	69.11	-	60.02	72.73	73.33	71.34	69.07	67.31	69.14
30	62.50	66.36	68.57	68.92	-	60.02	72.84	73.28	71.24	69.20	67.35	68.98
31	62.24	-	69.40	68.76	-	60.12	-	73.23	-	69.29	67.42	-

Elevation and contents, water year October 1940 to September 1941

Date	Elevation (feet)	Contents (million cubic feet)	Change in contents during month (equivalent mean second-feet)
Sept.30	68.04	1,958	-
Oct. 31	62.07	993	-360
Nov. 30	66.48	1,677	+264
Dec. 31	69.70	2,280	+225
Calendar year 1940	-	-	+33.0
Jan. 31	68.64	2,072	-78
Feb. 28	63.55	1,204	-359
Mar. 31	60.07	739	-174
Apr. 30	72.93	2,974	+862
May 31	73.20	3,036	+23
June 30	71.18	2,587	-173
July 31	69.38	2,216	-139
Aug. 31	67.72	1,899	-118
Sept.30	68.87	2,116	+84
Water year 1940-41	-	-	+5.0

Note.- Add 1,600 feet to obtain elevations above mean sea level. Reservoir elevations at midnight obtained by interpolation.

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

Location.- Lat. 43°53'50", long. 75°03'05", at Stillwater Dam, 7½ miles west of Beaver River post office, Herkimer County.

Drainage area.- 172 square miles.

Records available.- May 1908 to September 1941.

Average discharge.- 33 years, 356 second-feet (unadjusted).

Extremes.- 1908-41: 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 Stillwater Reservoir (capacity, 4,623,000,000 cubic feet). Discharge determined from ratings for gates and spillway at Stillwater Dam.

Cooperation.- Records of gate openings and reservoir elevations furnished by Board of Black River Regulating District.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	545	560	127	13	580	296	228	14	220	315	13	12
2	542	402	411	13	578	172	228	14	220	315	13	12
3	540	11	411	13	576	580	94	14	220	315	13	12
4	537	198	408	13	573	576	10	14	220	315	253	13
5	398	210	408	13	573	572	10	14	220	313	470	13
6	164	210	408	166	569	568	10	14	220	313	511	13
7	595	177	290	504	568	564	11	66	253	312	508	13
8	592	11	136	504	566	223	11	222	288	312	455	13
9	589	11	408	504	565	176	11	222	287	311	407	13
10	586	11	405	502	561	560	11	222	287	311	405	48
11	582	11	405	501	561	556	11	222	285	311	404	203
12	437	11	405	501	557	553	11	222	285	311	403	203
13	163	11	405	501	556	547	11	222	285	311	401	204
14	615	11	287	501	553	543	11	222	284	310	400	204
15	612	11	135	500	550	226	12	222	284	309	399	204
16	611	11	405	498	549	94	12	221	303	309	397	204
17	609	11	408	498	545	316	12	170	322	309	397	203
18	605	11	372	497	544	316	13	57	322	309	396	203
19	440	11	214	497	541	316	13	222	322	307	396	203
20	12	11	150	523	540	313	13	222	239	307	395	203
21	403	12	12	599	536	311	13	222	13	306	393	203
22	593	12	12	596	186	117	13	222	13	306	392	203
23	589	12	190	595	208	10	13	222	225	306	392	202
24	586	12	431	595	601	115	13	221	322	304	391	297
25	581	12	430	591	595	230	13	221	321	304	388	409
26	425	12	428	590	593	230	13	221	319	304	170	407
27	11	12	428	590	589	230	13	221	319	303	12	407
28	388	12	226	589	585	228	14	221	318	303	12	405
29	570	12	12	585	-	169	14	221	318	183	12	443
30	566	12	13	585	-	10	14	221	316	13	12	466
31	564	-	13	582	-	142	-	220	-	13	12	-

Month	Observed					Adjusted for storage†		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	15,050	615	11	485		125	0.727	0.84
November	2,031	560	11	67.7		332	1.93	2.15
December	8,793	431	12	284		509	2.96	3.41
Calendar year 1940	104,098	644	6	284		317	1.84	25.13
January	13,759	599	13	444		366	2.13	2.46
February	15,098	601	186	539		180	1.05	1.09
March	9,859	580	10	318		144	.837	.96
April	876	228	10	29.2		891	5.18	5.78
May	5,251	222	14	169		192	1.12	1.29
June	7,850	322	13	262		89	.517	.58
July	8,870	315	13	286		147	.855	.99
August	9,222	511	12	297		179	1.04	1.20
September	5,638	466	12	188		272	1.58	1.76
Water year 1940-41	102,297	615	10	280		285	1.66	22.51

† Adjusted for change in contents in Stillwater Reservoir.

Beaver River at Croghan, N. Y.

Location.- Water-stage recorder, lat. 43°53'50", long. 75°24'15", about 1,000 feet upstream from Black Creek and half a mile west of Croghan, Lewis County.

Drainage area.- 294 square miles.

Records available.- September 1930 to September 1941.

Average discharge.- 11 years, 524 second-feet.

Extremes (regulated).- Maximum discharge during year, 1,870 second-feet Dec. 31 (gage height, 4.49 feet); minimum, 55 second-feet Dec. 1 (gage height, 1.16 feet); minimum daily, 61 second-feet Dec. 1.
1930-41: Maximum discharge, 3,390 second-feet Apr. 19, 1933 (gage height, 5.80 feet); minimum, about 18 second-feet Feb. 24, 1936 (gage height, 0.89 foot); minimum daily, 35 second-feet May 13, 1934.

Remarks.- Records excellent. Flow of Beaver River completely regulated by Stillwater Reservoir (see p. 137). Between Stillwater Dam and this station flow is further regulated and controlled by nine power-plant ponds. Diurnal fluctuation at low and medium stages.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.2	59	1.7	161	3.5	1,050
1.3	72	2.0	254	4.1	1,510
1.4	89	2.4	406		
1.5	110	2.9	656		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	712	587	61	1,190	745	671	281	183	98	240	467	628
2	634	288	353	540	196	109	359	180	230	241	325	377
3	711	114	475	708	502	467	360	175	222	321	143	529
4	672	411	434	426	628	519	347	83	221	271	261	743
5	284	285	444	193	734	707	380	161	218	249	352	573
6	131	272	412	521	626	616	240	181	212	202	368	530
7	504	384	525	590	730	541	428	178	204	397	380	125
8	705	395	103	562	643	637	375	210	97	351	384	338
9	515	253	403	514	397	282	431	227	220	404	357	347
10	485	120	439	508	729	447	493	211	211	482	158	345
11	491	265	607	370	744	630	503	60	207	453	258	255
12	340	364	509	435	611	665	497	193	276	375	296	225
13	94	301	568	634	503	707	678	210	383	262	579	200
14	421	265	402	612	512	669	887	207	248	383	576	92
15	508	352	355	741	400	705	1,100	208	111	493	513	216
16	498	248	703	581	110	228	1,370	211	247	446	473	250
17	493	76	765	743	589	454	1,190	200	247	487	180	253
18	501	246	768	759	499	490	1,300	111	320	494	413	252
19	730	247	763	749	502	541	1,020	253	385	485	489	254
20	450	265	752	780	499	476	674	245	347	154	495	235
21	610	266	540	746	614	438	562	258	230	460	487	98
22	720	262	302	744	293	418	520	249	90	444	488	206
23	597	174	638	740	201	109	514	240	262	347	443	237
24	572	68	510	683	491	407	518	227	348	351	166	242
25	660	231	207	580	546	407	461	77	385	353	424	323
26	717	250	539	740	709	418	317	218	302	340	566	425
27	115	259	467	744	668	421	87	238	413	144	527	398
28	640	258	734	660	687	423	238	239	248	295	611	107
29	743	256	855	722	-	416	243	246	108	437	597	436
30	635	198	1,300	752	-	95	218	242	238	575	450	712
31	696	-	1,490	701	-	268	-	225	-	671	181	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	16,584	743	94	535	-	-
November	7,960	587	68	265	-	-
December	17,423	1,490	61	562	-	-
Calendar year 1940	166,969	1,490	46	456	1.55	21.13
January	19,968	1,190	193	644	-	-
February	15,108	745	110	540	-	-
March	14,381	707	95	464	-	-
April	16,591	1,370	87	553	-	-
May	6,166	258	77	199	-	-
June	7,328	413	90	244	-	-
July	11,607	671	144	374	-	-
August	12,407	611	143	400	-	-
September	9,951	743	92	332	-	-
Water year 1940-41	155,474	1,490	61	426	1.45	19.67

Deer River at Copenhagen, N. Y.

Location.- Water-stage recorder, lat. 43°53'55", long. 75°39'40", at power plant half a mile northeast of Copenhagen, Lewis County.

Drainage area.- 89 square miles.

Records available.- September 1929 to September 1941.

Average discharge.- 12 years, 205 second-feet.

Extremes.- Maximum discharge during year, 14,400 second-feet Sept. 1 (gage height, 12.08 feet), by slope-area method; minimum, 1.1 second-feet (regulated), July 5, 6 (gage height, 0.22 foot); minimum daily, 1.2 second-feet (regulated), July 5.
1929-41: Maximum discharge, that of Sept. 1, 1941; minimum, 0.7 second-foot (regulated), Aug. 12, 1940 (gage height, 0.17 foot); minimum daily, 0.8 second-foot (regulated), July 22 to Aug. 2, 1933.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low and medium stages caused by power plant.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	54	79	484	72	58	119	59	19	9.0	41	4,010
2	16	100	70	338	70	57	146	55	18	7.4	25	763
3	27	178	60	274	66	56	177	51	15	5.2	18	282
4	31	144	56	247	65	61	253	46	13	1.4	15	154
5	31	102	54	*160	63	71	356	54	11	1.2	12	261
6	27	376	58	156	*63	d70	489	57	12	2.8	11	1,170
7	29	395	119	125	65	d66	807	52	12	11	8.9	385
8	23	214	146	120	73	d64	1,150	112	12	48	6.4	220
9	17	139	166	124	83	d62	*1,590	98	11	46	5.2	222
10	17	119	191	125	92	d60	1,850	69	10	30	2.4	338
11	16	222	190	118	d78	d60	2,000	55	7.8	19	6.2	335
12	15	1,010	176	100	d72	d58	1,860	48	4.3	17	6.8	190
13	14	505	272	87	d90	*d58	1,830	42	9.0	15	7.6	122
14	14	255	292	71	d124	57	2,400	38	13	12	8.6	82
15	44	177	259	66	166	57	1,740	35	27	9.3	10	61
16	91	155	316	72	233	56	1,310	32	49	9.0	f14	51
17	62	117	818	97	d245	69	816	77	33	103	f26	43
18	61	120	626	242	d200	75	624	161	81	55	24	37
19	65	120	492	323	d150	72	476	89	44	137	20	33
20	51	444	378	269	d125	72	508	65	25	220	15	24
21	46	520	468	245	d102	69	409	50	16	86	6.0	20
22	38	*661	391	184	d88	65	279	39	15	44	8.9	18
23	38	455	290	143	d80	65	194	33	13	28	54	18
24	38	296	211	118	d74	67	153	33	15	20	45	19
25	38	188	179	102	72	72	131	33	11	16	151	19
26	37	92	178	93	70	80	108	29	11	12	695	18
27	34	69	529	88	64	88	73	26	7.5	7.0	250	16
28	32	64	1,720	82	60	104	63	28	4.8	25	102	17
29	31	71	2,110	78	-	122	57	32	2.9	63	52	26
30	34	80	2,090	76	-	122	57	26	6.4	55	37	35
31	50	-	703	74	-	118	-	20	-	65	1,370	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,079	91	13	34.8	0.391	0.45
November	7,442	1,010	54	248	2.79	3.11
December	13,687	2,110	54	442	4.97	5.73
Calendar year 1940	75,852.3	2,840	2.4	207	2.33	31.71
January	4,861	484	66	157	1.76	2.03
February	2,805	d245	60	100	1.12	1.17
March	2,231	122	56	72.0	.809	.93
April	22,025	2,400	57	734	8.25	9.20
May	1,644	161	20	53.0	.596	.69
June	528.7	81	2.9	17.6	.198	.22
July	1,179.3	220	1.2	38.0	.427	.49
August	3,054.0	1,370	2.4	98.5	1.11	1.28
September	8,989	4,010	16	300	3.37	3.76
Water year 1940-41	69,545.0	4,010	1.2	191	2.15	29.06

Peak discharge.- Dec. 28 (3:15 p.m.) 3,990 sec.-ft.; Dec. 29 (5:45 p.m.) 3,180 sec.-ft.; Apr. 11 (7:15 p.m.) 2,690 sec.-ft.; Apr. 14 (8:05 a.m.) 2,980 sec.-ft.; Sept. 1 (12:01 a.m.) 14,400 sec.-ft.

* Winter discharge measurement made on this day.

d Doubtful gage-height record; discharge computed on basis of records for East Branch of Fish Creek at Taberg.

f Fragmentary gage-height record; discharge computed on basis of records for East Branch of Fish Creek at Taberg.

Note.- Stage-discharge relation affected by ice Dec. 2-6, Jan. 15, 16, 31, Feb. 1, Feb. 25 to Mar. 1.

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

Location.- Water-stage recorder, lat. 44°13'15", long. 74°51'00", in village of Cranberry Lake, St. Lawrence County, about 900 feet downstream from dam at outlet of Cranberry Lake.

Drainage area.- 144 square miles.

Records available.- May 1923 to September 1941.

Average discharge.- 18 years, 292 second-feet.

Extremes (regulated).- Maximum discharge during year, 365 second-feet Mar. 7 (gage height, 5.18 feet); minimum, 37 second-feet Aug. 5 (gage height, 3.385 feet); minimum daily discharge, 38 second-feet Aug. 3, 4.

1923-41: Maximum daily discharge, 1,620 second-feet Apr. 17-20, 1933; minimum occurred when gates in dam were closed and there was no discharge over spillway; minimum daily, about 3 second-feet Apr. 9-16, 1931.

Remarks.- Records excellent. Flow completely regulated by gates in Cranberry Lake Dam.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

3.4	38	4.0	95	4.9	279
3.5	45	4.3	140	5.2	372
3.7	62	4.6	203		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	257	125	85	296	299	252	75	170	210	46	151
2	279	255	125	87	296	299	247	75	170	208	39	151
3	279	252	143	87	296	296	244	75	172	208	38	151
4	276	252	210	87	296	314	240	75	174	208	38	151
5	276	250	210	87	296	324	237	75	196	208	92	151
6	276	246	210	87	316	324	232	75	220	208	167	153
7	276	234	210	133	336	346	234	75	220	206	167	153
8	274	150	210	317	336	360	242	75	220	205	167	151
9	274	122	210	317	333	359	250	75	220	179	167	151
10	274	122	208	317	333	356	260	75	220	167	165	150
11	274	122	205	317	330	349	213	75	220	167	165	150
12	274	122	205	317	327	346	135	75	220	167	165	150
13	274	122	205	317	324	342	130	75	220	167	159	150
14	271	122	208	317	324	339	123	75	220	167	153	150
15	271	122	208	314	324	333	105	76	220	167	150	150
16	268	122	208	314	324	327	91	76	220	167	150	150
17	268	123	208	314	320	324	76	76	220	167	150	150
18	268	123	175	311	320	320	78	76	217	165	148	150
19	268	123	135	311	320	317	79	75	217	165	148	150
20	266	123	135	311	317	311	80	75	217	163	155	148
21	266	123	135	311	314	305	81	92	217	163	155	146
22	266	123	135	308	311	302	81	174	217	161	155	146
23	263	123	135	308	308	296	81	174	217	161	155	144
24	263	125	135	308	308	294	81	174	217	161	153	144
25	260	125	133	305	308	288	82	174	215	161	153	144
26	260	125	133	305	305	282	78	174	213	161	153	144
27	257	125	133	302	305	279	76	174	213	161	151	144
28	257	125	135	302	302	274	76	174	213	161	151	144
29	257	125	137	299	-	268	76	172	210	110	151	142
30	257	125	107	296	-	263	76	172	210	67	151	142
31	257	-	84	296	-	257	-	172	-	55	151	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,331	282	257	269	-	-
November	4,638	257	122	155	-	-
December	5,155	210	84	166	-	-
Calendar year 1940	77,550	734	55	212	1.47	20.07
January	8,087	317	85	261	-	-
February	8,825	336	296	315	-	-
March	9,693	360	257	313	-	-
April	4,336	260	76	145	-	-
May	3,330	174	75	107	-	-
June	6,315	220	170	210	-	-
July	5,190	210	55	167	-	-
August	4,308	167	38	139	-	-
September	4,451	153	142	148	-	-
Water year 1940-41	72,659	360	38	199	1.38	18.78

Note.- Increase in storage in Cranberry Lake Reservoir during calendar year 1940, about 274,000,000 cubic feet (equivalent mean discharge, 8.66 sec.-ft.; runoff, 0.82 inch); increase in elevation, 1.25 ft.; decrease during water year 1940-41, about 694,000,000 cubic feet (equivalent mean discharge, 22.0 sec.-ft.; runoff, 2.08 inches), decrease in elevation, 3.38 ft.

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

Location.- Water-stage recorder, lat. 44°13'25", long. 75°04'35", at Flat Rock hydro-electric plant of Northern New York Utilities, 2¾ miles north of Oswegatchie, St. Lawrence County.

Drainage area.- 263 square miles.

Records available.- October 1924 to September 1941.

Average discharge.- 16 years (1925-41), 514 second-feet.

Extremes (regulated).- Maximum discharge during year, 2,180 second-feet Dec. 30 (gage height, 5.50 feet); minimum, 6.2 second-feet June 4 (gage height, 0.89 foot); minimum daily, 107 second-feet Aug. 4.

1924-41: Maximum discharge, 4,010 second-feet Apr. 6, 1928 (gage height, 7.1 feet), from rating curve extended by logarithmic plotting above 1,900 second-feet; minimum, probably less than 1 second-foot during complete shut-down of power plant and ponding of entire flow of river; minimum daily, 1 second-foot July 25, 1926.

Remarks.- Records excellent. Large diurnal fluctuation at low and medium stages caused by power plant; seasonal flow partly regulated by Cranberry Lake (see p. 141).

Rating table, water year 1940-41 (gage height, in feet, and discharge, in feet, and discharge, in second-feet)

1.9	92	2.7	269	4.0	865
2.1	125	3.0	368	4.5	1,220
2.4	188	3.4	535	5.0	1,660

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	381	325	248	900	420	424	514	206	206	211	211	166
2	385	271	272	718	347	353	569	326	241	195	186	208
3	412	269	272	407	400	459	580	260	278	213	196	207
4	420	319	266	389	332	422	741	202	191	233	107	211
5	489	319	269	356	335	523	771	192	264	218	302	216
6	319	379	265	404	365	471	615	211	209	222	306	220
7	304	354	266	435	372	420	706	212	205	209	196	232
8	315	476	264	592	380	371	594	206	204	219	198	206
9	321	364	207	543	414	370	980	198	212	222	197	200
10	311	420	265	536	370	527	1,180	215	206	225	206	227
11	309	361	270	424	460	520	1,240	144	199	225	191	213
12	190	380	269	427	430	446	1,030	210	214	196	202	215
13	246	586	267	416	443	472	670	260	382	168	206	205
14	348	544	303	424	455	354	1,200	255	216	261	198	208
15	317	565	272	443	436	401	1,410	272	199	205	181	202
16	343	329	267	436	472	315	1,500	262	160	210	178	201
17	370	320	756	451	526	360	1,310	198	219	226	234	219
18	477	374	573	447	571	352	1,200	206	194	223	180	222
19	377	316	673	377	505	354	425	199	209	227	171	215
20	312	333	617	461	521	453	319	199	227	210	176	216
21	374	255	534	432	481	366	468	192	218	209	164	202
22	373	372	333	518	524	356	451	195	215	217	154	205
23	309	391	326	513	540	406	456	194	210	224	167	200
24	422	274	411	416	527	347	406	208	223	223	152	176
25	383	239	428	423	502	367	408	207	217	221	168	196
26	385	304	327	421	518	350	253	236	233	196	154	217
27	347	416	359	399	521	351	166	253	227	194	209	219
28	309	267	649	427	485	351	260	266	234	293	245	206
29	311	231	826	421	-	374	263	196	225	416	222	207
30	299	203	1,610	442	-	236	254	202	216	301	167	164
31	270	-	1,550	481	-	356	-	219	-	328	160	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,728	489	190	346	-	-
November	10,556	586	203	352	-	-
December	14,216	1,610	207	459	-	-
Calendar year 1940	153,007	2,330	119	418	1.59	21.65
January	14,479	900	356	467	-	-
February	12,652	571	332	452	-	-
March	12,227	527	236	394	-	-
April	20,939	1,500	166	698	-	-
May	6,801	326	144	219	-	-
June	6,655	382	160	222	-	-
July	7,142	416	168	230	-	-
August	6,016	306	107	194	-	-
September	6,223	232	166	207	-	-
Water year 1940-41	128,634	1,610	107	352	1.34	18.21

Oswegatchie River near Heuvelton, N. Y.

Location.- Water-stage recorder, lat. 44°36'00", long. 75°22'45", 2⅛ miles upstream from Heuvelton, St. Lawrence County.

Drainage area.- 973 square miles.

Records available.- June 1916 to September 1941.

Average discharge.- 25 years, 1,668 second-feet.

Extremes.- Maximum discharge during year, 6,990 second-feet Jan. 1 (gage height, 5.71 feet); minimum, 220 second-feet (regulated) July 7 (gage height, 0.82 foot, backwater from weeds).

1916-41: Maximum discharge, 15,600 second-feet Jan. 11, 1930 (gage height, 9.1 feet); minimum, 200 second-feet (regulated) Aug. 18, 1934 (gage height, 0.65 foot).

Remarks.- Records excellent except those for periods of ice effect, which are good, and those for periods of backwater from weeds, which are fair. Seasonal flow slightly regulated by Cranberry Lake; slight diurnal fluctuation at low and medium stages caused by power plants. During high stages on Grass River part of flow of that stream may pass through Upper Lake, Indian Creek, and Lower Lake and enter Oswegatchie River at Rensselaer Falls, 4⅛ miles above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 9				Nov. 10 to Sept. 30			
1.1	380	0.8	225	1.9	990	5.0	5,560
1.2	440	1.0	317	2.4	1,540	5.7	6,970
1.4	570	1.2	428	3.0	2,280		
1.9	990	1.5	637	4.0	3,760		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	550	492	653	6,890	804	933	2,000	850	466	320	1,110	405
2	479	505	735	6,800	780	904	2,310	795	466	330	1,050	399
3	472	466	702	6,090	760	850	2,950	744	454	310	895	376
4	460	434	669	5,030	740	804	3,660	710	460	320	678	434
5	518	504	637	3,840	720	735	4,430	686	405	310	622	460
6	564	591	637	2,890	718	795	4,760	702	365	260	548	492
7	512	664	645	2,220	727	813	4,740	686	370	245	428	506
8	550	762	678	1,790	850	820	5,070	702	359	250	382	479
9	479	962	735	1,520	1,010	*800	5,370	669	338	310	354	492
10	466	971	840	*1,520	*980	720	5,180	678	344	300	322	534
11	453	942	895	1,480	1,000	680	*4,990	718	359	300	317	513
12	460	924	942	1,380	1,040	740	4,900	702	354	410	312	520
13	446	914	980	1,260	1,030	780	4,830	686	376	380	328	506
14	398	1,060	1,010	1,300	1,060	800	4,720	653	354	380	322	466
15	392	1,310	1,030	1,200	1,510	850	4,650	607	338	430	303	405
16	518	1,420	1,060	1,120	2,220	787	4,940	600	411	420	338	405
17	550	1,370	1,640	1,060	2,110	761	5,160	630	416	390	328	416
18	518	1,140	2,700	1,050	1,850	727	5,280	630	376	400	312	359
19	570	*1,020	2,860	1,160	1,660	720	5,160	592	431	380	328	322
20	648	952	2,830	1,290	1,430	700	4,540	600	577	330	328	322
21	672	971	2,830	1,220	1,270	744	3,470	607	534	310	333	303
22	524	1,020	2,900	1,140	1,230	804	2,700	600	440	320	333	338
23	538	1,130	2,840	1,160	1,110	735	2,320	562	380	350	298	328
24	531	1,230	2,540	1,080	1,060	694	2,070	520	340	350	293	365
25	512	1,420	2,140	1,020	1,060	787	1,860	499	350	350	312	328
26	492	1,360	1,890	980	1,020	924	1,640	466	360	350	328	288
27	466	1,260	1,730	933	980	1,160	1,370	479	320	330	322	283
28	434	1,070	1,890	904	933	1,640	1,180	506	310	330	303	265
29	467	859	2,890	831	-	2,450	1,040	460	350	399	293	269
30	505	831	4,850	831	-	2,660	933	428	320	590	293	251
31	479	-	6,250	831	-	2,200	-	441	-	1,060	337	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,623	672	392	504	0.518	0.60
November	28,554	1,420	434	952	.978	1.09
December	55,628	6,250	637	1,794	1.84	2.12
Calendar year 1940	487,879	10,500	330	1,333	1.37	18.63
January	61,820	6,890	831	1,994	2.05	2.36
February	31,662	2,220	718	1,131	1.16	1.21
March	30,517	2,660	680	984	1.01	1.16
April	108,223	5,370	933	3,607	3.71	4.14
May	19,208	850	428	620	.637	.73
June	11,723	577	310	391	.402	.45
July	11,514	1,060	245	371	.381	.44
August	13,050	1,110	293	421	.433	.50
September	11,829	534	251	394	.405	.45
Water year 1940-41	399,351	6,890	245	1,094	1.12	15.25

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 14-17, 24-26, Feb. 2-5, 26, Mar. 8-14, 19, 20. Backwater from aquatic vegetation June 22 to July 28; discharge computed on basis of two discharge measurements, gage heights and engineer's notes.

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

Location.- Water-stage recorder, lat. 44°11'10", long. 75°19'55", at highway bridge, half a mile northeast of Geers Corners and 4 miles downstream from Harrisville, Lewis County.

Drainage area.- 258 square miles.

Records available.- July 1916 to September 1941.

Average discharge.- 25 years, 509 second-feet.

Extremes.- Maximum discharge during year, 3,580 second-feet Dec. 31 (gage height, 6.83 feet); minimum, 42 second-feet June 12 (gage height, 1.05 feet).
1916-41: Maximum discharge, 6,920 second-feet Jan. 9, 1930 (gage height, 9.6 feet), from rating curve extended above 2,400 second-feet; minimum, 25 second-feet Sept. 1, 1934 (gage height, 0.86 foot).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation, principally during low flow, caused by pondage for pulp mill at Harrisville.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30					
1.2	55	2.4	257	1.1	46	2.3	248	5.0	1,810
1.3	65	2.e	408	1.3	65	2.6	341	6.0	2,730
1.5	86	3.3	650	1.6	101	3.0	500	6.7	3,440
1.8	125	4.1	1,095	1.8	133	3.5	745		
2.1	179			2.0	173	4.0	1,045		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	91	263	2,770	206	152	257	315	152	74	488	184
2	73	103	254	1,950	201	152	302	305	104	70	400	245
3	67	140	220	1,370	189	139	359	296	114	66	348	257
4	62	193	205	1,040	196	150	478	260	97	49	245	248
5	59	188	195	812	189	145	641	251	99	60	167	198
6	58	234	b190	636	182	b140	767	271	96	50	143	196
7	57	386	b195	b540	179	b140	968	274	81	49	116	253
8	58	454	207	b460	212	b140	1,190	299	96	51	92	245
9	60	f399	257	b400	229	137	1,340	352	80	90	78	216
10	62	f333	254	377	*248	*148	*1,470	377	a72	154	83	206
11	61	296	260	*370	245	144	1,610	348	68	173	86	214
12	62	357	245	348	234	145	1,790	296	.69	180	76	174
13	64	575	283	315	226	142	1,920	262	72	184	65	166
14	60	635	b330	b290	240	144	2,120	234	73	160	56	152
15	75	605	b390	262	341	139	2,730	218	a78	137	58	123
16	132	545	478	254	373	148	2,950	194	a92	109	'61	110
17	175	468	710	254	396	148	2,810	191	a114	102	77	93
18	159	395	945	286	373	146	2,270	262	a210	106	121	86
19	146	321	1,060	341	321	156	1,760	283	a195	91	89	81
20	131	*286	1,080	373	277	160	1,400	257	a135	114	84	65
21	118	361	1,000	359	257	148	1,190	216	99	116	77	59
22	106	497	927	334	243	142	1,040	201	83	101	72	59
23	96	650	810	321	226	146	900	186	78	84	58	59
24	92	695	675	302	214	148	745	152	72	55	55	59
25	91	660	565	283	196	156	612	152	69	65	69	56
26	87	536	493	271	187	169	527	148	68	86	61	50
27	86	417	459	240	b175	184	453	122	63	64	93	51
28	82	365	571	240	161	214	400	135	67	83	187	50
29	78	329	1,020	b225	-	245	363	142	63	471	191	49
30	76	296	2,380	b215	-	245	328	165	64	703	153	50
31	84	-	3,420	210	-	248	-	141	-	661	123	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,697	175	57	87.0	0.337	0.39
November	11,810	695	91	394	1.53	1.71
December	20,331	3,420	190	656	2.54	2.93
Calendar year 1940	154,464	3,600	42	422	1.64	22.26
January	16,448	2,770	210	531	2.06	2.38
February	6,716	396	161	240	.930	.97
March	4,960	248	137	160	.620	.71
April	35,690	2,950	257	1,190	4.61	5.14
May	7,305	377	122	236	.915	1.05
June	2,823	210	63	94.1	.365	.41
July	4,556	703	49	147	.570	.66
August	4,075	488	56	131	.508	.59
September	4,054	257	49	135	.523	.58
Water year 1940-41	121,467	3,420	49	333	1.29	17.52

Peak discharge.- Dec. 31 (4 a.m.) 3,580 sec.-ft.; Apr. 16 (8:30 p.m.) 3,000 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Independence River at Sperryville and Grass River at Pyrites.
b Stage-discharge relation affected by ice.
f Fragmentary gage-height record; discharge computed on basis of partly estimated gage heights.

Grass River at Pyrites, N. Y.

Location.- Water-stage recorder, lat. 44°31'30", long. 75°11'50", 1,000 feet downstream from lower bridge in Pyrites, St. Lawrence County, and half a mile upstream from Harrison Creek.

Drainage area.- 335 square miles.

Records available.- August 1924 to September 1941.

Average discharge.- 17 years, 576 second-feet.

Extremes.- Maximum discharge during year, 4,760 second-feet Dec. 30, 31 (gage height, 8.95 feet), from rating curve extended above 2,800 second-feet by logarithmic plotting; minimum, 64 second-feet Sept. 26, 28 (gage height, 1.21 feet); minimum daily, 65 second-feet Sept. 26-29.

1924-41: Maximum discharge, about 8,300 second-feet Nov. 18, 1927 (gage height, 13.0 feet), from rating curve extended above 2,100 second-feet by logarithmic plotting; minimum, 37 second-feet July 15, 1933; minimum daily, 59 second-feet Aug. 29 to Sept. 1, 1934.

Remarks.- Records good except those for periods of ice effect, fragmentary or doubtful gage heights, which are fair. Occasional diurnal fluctuations at low and medium stages caused by power plants.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15						Apr. 16 to Sept. 30			
1.4	104	3.1	730	7.0	3,200	1.2	62	1.9	230
1.6	154	4.0	1,190	8.3	4,240	1.4	96	2.4	415
2.0	276	5.0	1,800			1.6	141	3.0	680
2.5	462	6.0	2,500			Note.- Same as preceding table above 3.0 feet.			

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	128	f144	330	2,590	245	230	350	344	163	85	244	125
2	121	f188	320	1,750	240	225	400	332	146	87	163	237
3	116	f333	310	1,260	235	220	500	318	134	102	127	195
4	111	399	300	980	230	215	720	299	124	87	104	146
5	111	343	290	780	225	210	900	292	119	78	94	124
6	111	362	280	700	220	205	860	318	117	73	89	182
7	106	526	280	660	260	200	1,000	321	113	73	80	250
8	114	545	360	640	300	195	1,200	325	111	92	75	192
9	121	426	350	560	*350	190	1,350	379	104	106	72	152
10	133	340	330	*480	370	*185	1,750	375	104	138	97	146
11	133	333	320	440	350	180	*2,010	321	100	217	131	160
12	128	502	310	400	330	180	2,160	274	92	242	104	180
13	128	690	300	380	320	175	2,250	250	94	399	89	163
14	133	597	290	360	330	175	2,500	233	100	329	82	141
15	194	466	280	340	490	170	3,030	224	106	218	78	119
16	342	392	330	320	460	170	3,030	211	124	141	82	109
17	399	351	1,080	310	400	195	2,700	217	154	119	166	98
18	318	318	1,100	350	370	195	2,120	282	304	117	250	94
19	256	*290	1,040	450	350	190	1,600	314	270	129	183	89
20	218	312	980	410	330	185	1,240	268	182	127	136	82
21	194	454	1,000	380	310	180	1,020	237	136	129	115	78
22	171	562	1,000	360	300	175	865	201	113	111	104	75
23	162	647	880	340	290	175	715	177	100	96	96	72
24	157	597	780	320	280	195	604	171	94	89	89	70
25	157	511	660	310	270	230	541	163	83	82	89	68
26	157	377	560	300	260	260	498	160	83	73	94	65
27	154	390	558	290	245	290	452	163	78	75	136	65
28	146	370	916	280	235	380	419	177	73	194	129	65
29	138	360	2,100	270	-	440	387	204	76	570	111	65
30	133	340	4,170	260	-	400	359	217	78	602	100	68
31	f141	-	4,120	250	-	370	-	189	-	392	94	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,131	399	106	166	0.496	0.57
November	12,465	690	144	416	1.24	1.38
December	25,924	4,170	280	836	2.50	2.88
Calendar year 1940	190,197	4,620	81	520	1.55	21.12
January	17,520	2,590	250	565	1.69	1.95
February	8,595	490	220	307	.916	.95
March	6,985	440	170	225	.672	.77
April	37,550	3,030	350	1,252	3.74	4.17
May	7,956	379	160	257	.767	.88
June	3,675	304	73	122	.364	.41
July	5,372	602	73	173	.516	.59
August	3,603	250	72	116	.346	.40
September	3,675	250	65	122	.364	.41
Water year 1940-41	138,451	4,170	65	379	1.13	15.36

* Winter discharge measurement made on this day.

f Fragmentary gage-height record; discharge computed from graph of gage heights based on recorded range in stage, weather records, and records at adjacent stations.

Note.- Stage-discharge relation affected by ice Nov. 27 to Dec. 26, Jan. 5 to Apr. 10 (doubtful gage-height record Jan. 21 to Feb. 2, Feb. 19-23).

Raquette River at Piercefield, N. Y.

Location.- Water-stage recorder, lat. 44°14'05", long. 74°34'20", half a mile downstream from dam of International Paper Co. and Piercefield, St. Lawrence County.

Drainage area.- 722 square miles.

Records available.- August 1908 to September 1941.

Average discharge.- 33 years, 1,266 second-feet.

Extremes (regulated).- Maximum discharge during year, 3,970 second-feet Apr. 23 (gage height, 9.06 feet); minimum, 124 second-feet June 29 (gage height, 2.42 feet); minimum daily, 144 second-feet Sept. 14.
1908-41: 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, 11 second-feet Sept. 2, 1913.

Remarks.- Records excellent except those for periods of doubtful gage-height record, which are fair. Large diurnal fluctuation in flow for short periods caused by paper mill. Seasonal distribution of flow appreciably modified by natural storage in lakes and ponds above station.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30					
3.4	306	6.5	1,620	2.5	136	4.1	503	6.8	1,830
3.9	433	7.5	2,390	2.9	202	4.8	746	7.9	2,750
4.6	667	8.5	3,350	3.4	311	5.8	1,200	9.1	4,020
5.5	1,053	9.0	3,900						

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	572	978	2,680	982	878	448	2,650	522	255	462	373
2	506	504	970	2,660	906	868	452	2,450	498	264	459	374
3	469	482	920	2,650	916	772	450	2,330	454	238	459	388
4	502	422	910	2,650	878	592	460	2,140	448	212	456	392
5	542	454	873	2,600	822	566	478	1,540	433	196	454	418
6	518	588	858	2,560	752	550	542	1,060	430	186	464	440
7	494	411	862	2,430	688	520	616	1,120	412	186	442	438
8	494	497	856	d2,250	554	479	725	1,160	399	184	433	414
9	495	536	846	d2,110	548	466	975	1,180	366	236	414	372
10	491	479	824	d2,010	589	463	1,010	1,140	264	449	378	394
11	490	486	808	1,950	693	466	1,080	1,150	400	412	260	398
12	495	500	793	1,900	676	466	1,160	1,150	530	468	264	244
13	438	408	820	d1,850	746	480	1,310	1,130	533	508	236	157
14	422	368	822	d1,800	706	563	1,560	1,110	502	453	304	144
15	346	420	801	d1,750	712	564	1,820	1,060	469	574	296	274
16	328	494	802	d1,700	688	550	2,240	1,030	460	630	304	408
17	410	584	856	d1,600	648	554	2,740	1,020	492	560	327	448
18	440	648	861	d1,200	568	546	3,160	956	501	519	330	419
19	438	702	861	d1,250	563	526	3,460	956	428	511	344	574
20	434	759	868	d1,260	552	516	3,700	934	372	476	341	568
21	438	838	878	d1,270	511	500	3,800	906	361	470	340	578
22	520	1,030	900	d1,030	544	498	3,830	880	378	449	320	576
23	430	1,050	896	677	540	482	3,940	840	370	450	258	572
24	438	1,060	884	644	537	480	3,890	792	320	442	251	574
25	528	1,020	873	660	530	474	3,790	768	274	432	242	573
26	476	1,040	860	762	551	472	3,640	763	310	447	244	577
27	476	1,070	861	794	602	466	3,420	724	297	431	388	572
28	523	1,050	920	902	850	461	3,210	530	222	466	396	586
29	540	1,060	1,240	1,110	-	464	3,020	528	172	448	390	574
30	437	990	2,250	1,070	-	460	2,820	526	260	469	381	522
31	458	-	2,660	1,010	-	450	-	528	-	466	376	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,526	542	328	469	0.650	0.75
November	20,522	1,070	368	684	.947	1.06
December	30,411	2,660	793	981	1.36	1.57
Calendar year 1940	380,738	6,220	115	1,040	1.44	19.62
January	50,789	2,680	644	1,638	2.27	2.62
February	18,852	982	511	673	.932	.97
March	16,592	876	450	535	.741	.85
April	63,746	3,940	448	2,125	2.94	3.28
May	35,051	2,650	526	1,131	1.57	1.81
June	11,877	533	172	396	.548	.61
July	12,487	630	184	403	.558	.64
August	11,013	464	236	355	.492	.57
September	13,341	586	144	445	.616	.69
Water year 1940-41	299,207	3,940	144	820	1.14	15.42

d Doubtful gage-height record; discharge computed on basis of fragmentary record, observer's readings, weather records, and study of daily discharge hydrograph.

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

Location.- Water-stage recorder, lat. 44°51'50", long. 74°46'45", 600 feet upstream from highway bridge at Brasher Center, St. Lawrence County, and 6½ miles downstream from confluence of East and West Branches at Winthrop.

Drainage area.- 616 square miles.

Records available.- August 1910 to November 1917, January 1919 to September 1941.

Average discharge.- 28 years (1910-13, 1914-17, 1919-41), 1,060 second-feet.

Extremes.- Maximum discharge during year, 5,550 second-feet Apr. 15 (gage height, 9.27 feet); minimum, 95 second-feet Aug. 14 (gage height, 5.62 feet).
1910-17, 1919-41: Maximum discharge, 16,800 second-feet Apr. 6, 1937 (gage height, 12.82 feet), from rating curve extended above 8,240 second-feet by logarithmic plotting; maximum gage height recorded, about 15.3 feet Apr. 6, 1937, ice jam; minimum discharge, about 34 second-feet Aug. 8, 1917 (gage height, 5.25 feet).

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are fair.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 14		Apr. 15 to Sept. 30			
5.8	173	5.6	87	6.6	887
5.9	240	5.7	129	7.0	1,420
6.1	392	5.8	181	7.8	2,670
Note.- Same as		5.9	243	8.8	4,550
following table		6.1	392	9.3	5,620
above 6.1 feet.		6.3	569		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	276	490	2,700	340	330	520	679	532	160	212	206
2	255	321	460	2,210	340	320	620	648	495	150	181	354
3	255	409	440	1,990	330	310	740	599	418	155	150	189
4	227	486	420	1,720	320	310	1,080	628	300	150	139	d145
5	227	495	400	1,300	310	310	1,350	541	286	145	139	d150
6	227	579	380	1,100	310	300	1,300	514	278	139	134	165
7	227	668	380	1,000	*370	300	1,450	523	264	145	129	160
8	227	700	560	940	430	*290	*1,750	477	231	181	125	165
9	240	638	540	*820	520	280	2,000	443	193	181	116	165
10	262	579	500	680	540	280	2,700	599	181	264	116	165
11	255	452	470	600	520	280	3,200	541	176	231	121	134
12	255	814	450	560	490	270	3,400	477	171	237	121	171
13	255	985	430	520	470	270	3,650	426	165	417	116	171
14	255	808	410	490	480	270	4,700	452	187	579	108	171
15	329	658	400	460	620	260	5,470	384	206	376	116	165
16	634	648	460	440	640	260	5,180	400	212	369	121	165
17	505	560	1,330	430	580	290	4,740	418	218	330	150	165
18	609	*477	1,480	490	540	290	3,970	452	322	307	171	165
19	477	514	1,410	640	500	280	*3,340	532	384	278	150	160
20	409	418	1,360	580	470	280	2,790	495	322	237	155	160
21	313	548	1,350	540	450	270	2,370	392	250	212	160	160
22	345	797	1,360	500	430	260	2,050	400	231	187	160	150
23	360	785	1,210	470	420	260	1,720	361	206	176	171	139
24	306	830	973	450	400	300	1,450	361	193	171	165	127
25	291	842	948	430	380	340	1,130	353	187	165	171	125
26	329	631	830	410	370	390	1,040	314	176	160	171	116
27	298	426	742	390	350	440	948	330	165	168	165	d116
28	313	380	1,180	380	340	560	887	353	155	165	160	d116
29	313	480	2,570	370	-	680	797	704	160	176	183	d121
30	298	520	3,800	360	-	620	700	842	150	171	155	d125
31	262	-	3,510	350	-	560	-	710	-	181	150	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,798	634	227	316	0.513	0.59
November	17,724	985	276	591	.959	1.07
December	31,243	3,800	380	1,008	1.64	1.89
Calendar year 1940	291,491	6,090	161	796	1.29	17.59
January	24,320	2,700	350	785	1.27	1.46
February	12,260	640	310	438	.711	.74
March	10,460	680	260	337	.547	.63
April	67,942	5,470	520	2,235	3.63	4.05
May	15,348	842	314	495	.804	.93
June	7,414	532	150	247	.401	.45
July	6,963	579	139	225	.365	.42
August	4,581	212	108	148	.240	.28
September	4,786	354	116	160	.260	.29
Water year 1940-41	221,939	5,470	108	581	.943	12.80

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of records of Grass River at Pyrites.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 16, Jan. 5 to Apr. 12.

Salmon River at Chasm Falls, N. Y.

Location.- Water-stage recorder, lat. 44°45'20", long. 74°13'10", at Chasm Falls, Franklin County, a quarter of a mile downstream from power plant of Central New York Power Corporation.

Drainage area.- 132 square miles.

Records available.- July 1925 to September 1941.

Average discharge.- 16 years, 224 second-feet.

Extremes.- Maximum discharge during year, 1,940 second-feet Apr. 16 (gage height, 4.12 feet); minimum, 21 second-feet (regulated) May 16 (gage height, 0.48 foot); minimum daily, 49 second-feet Aug. 6.

1925-41: Maximum discharge, 2,890 second-feet Apr. 25, 1926 (gage height, 5.0 feet), from rating curve extended above 2,340 second-feet on basis of velocity-area study; minimum, 20 second-feet (regulated) Oct. 25, 1934 (gage height, 0.46 foot); minimum daily, 28 second-feet Sept. 4, 1934.

Remarks.- Records excellent. Diurnal fluctuation at low and medium stages caused by power plant. A small diversion from tributary stream above station is used as water supply for village of Malone.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

0.8	46	1.2	95	1.6	194	2.5	605
.9	56	1.3	115	1.8	260	3.0	960
1.0	67	1.4	139	2.0	340	3.5	1,360
1.1	80	1.5	165	2.2	435	4.1	1,920

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	133	173	322	127	115	126	149	120	84	66	103
2	90	158	169	239	130	93	126	121	124	66	64	68
3	103	191	163	270	128	113	124	125	114	63	62	122
4	93	174	150	247	137	111	146	129	100	64	64	138
5	96	152	146	197	119	111	175	126	94	70	53	126
6	95	183	165	180	118	105	195	135	107	58	49	65
7	105	190	160	171	140	110	238	121	83	65	59	56
8	167	170	171	148	138	108	270	125	71	82	59	87
9	138	96	162	148	146	108	335	146	76	95	50	145
10	115	92	150	154	140	107	422	137	84	86	54	131
11	110	96	142	153	127	99	524	117	78	76	59	90
12	101	184	141	147	128	109	597	108	76	164	56	90
13	107	152	143	151	129	103	654	105	76	160	73	57
14	116	122	128	163	140	111	1,110	105	84	99	55	53
15	171	155	140	154	156	107	1,730	117	101	84	55	73
16	212	151	140	151	136	108	1,850	90	145	75	74	71
17	111	152	207	152	150	113	1,430	108	131	73	92	74
18	91	145	193	181	133	98	1,040	130	124	76	82	75
19	90	138	193	173	126	105	744	130	104	75	69	67
20	75	150	187	165	122	110	571	120	87	59	76	83
21	100	211	174	145	124	107	478	121	75	65	62	85
22	159	197	174	155	106	105	370	113	72	61	78	82
23	165	220	155	155	122	102	310	98	71	61	76	85
24	169	190	145	140	118	109	273	113	71	61	87	86
25	162	178	158	142	109	115	244	106	69	65	74	92
26	165	143	145	152	119	120	221	102	69	87	102	72
27	117	193	158	140	102	121	208	116	62	60	73	88
28	146	184	220	140	110	128	127	140	63	83	69	82
29	129	166	419	125	-	129	139	283	80	90	69	81
30	136	175	541	129	-	122	136	220	82	78	64	82
31	134	-	516	137	-	118	-	155	-	73	73	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,863	212	75	125	0.947	1.09
November	4,841	220	92	161	1.22	1.36
December	6,028	541	128	194	1.47	1.70
Calendar year 1940	71,910	1,410	73	196	1.48	20.26
January	5,226	322	125	169	1.28	1.48
February	3,580	156	102	128	.970	1.01
March	3,420	129	93	110	.833	.96
April	14,913	1,850	124	497	3.77	4.21
May	4,011	283	90	129	.977	1.13
June	2,693	145	62	89.8	.680	.76
July	2,458	164	58	79.3	.601	.69
August	2,068	102	49	66.7	.505	.58
September	2,609	145	53	87.0	.659	.74
Water year 1940-41	55,710	1,850	49	153	1.16	15.71

Chateaugay River near Chateaugay, N. Y.

Location.- Water-stage recorder, lat. 44°54'35", long. 74°05'10", 150 feet downstream from dam of International Paper Co., 1 mile south of Chateaugay, Franklin County.
Drainage area.- 112 square miles.
Records available.- September to December 1908, October 1926 to September 1941.
Average discharge.- 15 years (1926-41), 173 second-feet.
Extremes (regulated).- Maximum discharge during year, 857 second-feet Apr. 17 (gage height, 4.53 feet); minimum, 45 second-feet Sept. 26 (gage height, 1.12 feet); minimum daily, 55 second-feet Sept. 28.
1908, 1926-41: Maximum discharge, 2,060 second-feet Apr. 8, 1928 (gage height, 7.3 feet), from rating curve extended above 970 second-feet by logarithmic plotting; minimum, 6 second-feet Nov. 20, 1928 (gage height, 0.23 foot); minimum daily, 26 second-feet July 8, 1934.
Remarks.- Records excellent except those for periods of ice effect, or doubtful or no gage-height record, which are fair. Flow regulated by Upper and Lower Chateaugay Lakes. Large diurnal fluctuation at all stages caused by power operations.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 11		Nov. 11 to Sept. 30			
1.5	85	1.2	51	2.4	205
1.6	97	1.4	68	2.9	312
1.7	110	1.7	100	3.5	479
1.8	123	2.0	139	4.3	765

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	91	104	133	160	130	113	a122	81	74	67	66
2	93	97	104	154	160	130	113	a117	84	70	64	59
3	88	94	102	150	155	131	118	111	81	73	62	63
4	92	91	102	149	155	130	134	108	81	68	65	59
5	89	92	100	149	155	135	149	106	82	71	62	63
6	90	100	100	152	*155	130	163	100	82	70	60	62
7	96	99	106	155	175	*135	162	99	86	74	62	57
8	94	102	116	*160	165	130	*184	98	77	71	60	63
9	91	101	104	160	155	125	193	96	81	72	61	60
10	90	105	108	175	150	125	197	94	82	74	61	62
11	90	111	98	175	145	124	201	93	82	68	65	60
12	89	103	102	175	145	124	191	92	83	67	62	61
13	92	90	102	160	150	130	198	92	82	66	61	59
14	91	94	102	195	160	125	282	92	83	67	62	56
15	111	90	100	195	140	126	349	93	84	66	62	62
16	97	92	110	195	130	125	613	93	83	67	64	59
17	92	*96	140	190	124	119	737	97	83	66	59	60
18	92	96	110	225	121	104	669	96	83	67	64	60
19	92	95	106	195	123	113	663	94	82	65	62	59
20	92	106	110	215	125	131	621	89	82	64	60	58
21	92	97	116	215	128	125	565	87	70	70	61	57
22	92	100	108	230	131	121	482	87	70	65	64	58
23	92	106	104	225	130	120	390	87	71	64	59	57
24	92	103	104	220	128	118	301	87	73	68	60	61
25	92	92	102	220	132	121	a260	87	76	66	66	59
26	91	95	102	215	125	121	a230	88	70	66	63	58
27	92	102	116	210	130	120	a190	84	71	64	61	59
28	91	100	156	190	130	120	a150	85	77	67	61	55
29	91	111	162	170	-	123	a140	91	73	69	60	76
30	92	106	149	165	-	118	a130	81	74	66	62	63
31	92	-	139	165	-	117	-	83	-	67	59	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,857	111	88	92.2	-	-
November	2,957	111	90	98.6	-	-
December	3,464	162	98	112	-	-
Calendar year 1940	59,573	975	69	163	1.46	19.78
January	5,702	230	133	184	-	-
February	3,982	175	121	142	-	-
March	3,845	135	104	124	-	-
April	8,908	737	113	297	-	-
May	2,929	122	81	94.5	-	-
June	2,369	86	70	79.0	-	-
July	2,112	74	64	68.1	-	-
August	1,921	67	59	62.0	-	-
September	1,811	76	55	60.4	-	-
Water year 1940-41	42,877	737	55	117	1.04	14.25

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of record of gate operation at Forge Dam and gage-height record for preceding and following days.
Note.- Stage-discharge relation affected by ice Dec. 1-10, 14-19, 24, 25, Jan. 7 to Feb. 17, Feb. 27 to Mar. 2, Mar. 5-15 (doubtful gage-height record Jan. 15-18, 21-24, Feb. 7-10). Increase in storage in Chateaugay Lakes during the calendar year 1940, about 157,580,000 cubic feet (equivalent mean discharge, 4.98 sec.-ft.; runoff, 0.61 inch), increase in elevation, 1.19 ft. Decrease during water year 1940-41, about 150,960,000 cubic feet (equivalent mean discharge, 4.79 sec.-ft.; runoff 0.58 inch), decrease in elevation, 1.14 ft.

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

Location.- Water-stage recorder, lat. 44°59'45", long. 73°21'40", in Rouses Point, Clinton County, at outlet of Lake Champlain, 90 feet north of Rutland Railroad bridge and 1 mile south of Fort Montgomery. Datum of gage is 93.00 feet above mean sea level, datum of 1929.

Drainage area.- 8,277 square miles.

Records available.- October 1863 to December 1870 (maximum and minimum monthly gage heights at St. Johns, Quebec, published in Water-Supply Paper 97) and March 1871 to September 1941 (daily gage heights; those for 1871-1907 published in Water-Supply Paper 894). January 1875 to September 1916 (monthly discharge) at Chambly, Quebec, published in Water-Supply Paper 424.

Extremes.- Maximum gage height during year, 4.68 feet Apr. 20; minimum, -0.59 foot Sept. 29.

1871-1941: Maximum gage height observed, 8.80 feet Mar. 30, 1903; observations at St. Johns, Quebec, indicate a maximum gage height of 8.83 feet (computed) during April 1869; minimum observed, -0.60 foot Nov. 13, 1908.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.70	0.59	1.48	2.98	2.32	2.01	1.98	3.89	2.45	1.38	1.03	0.47
2	.65	.72	1.53	2.94	2.28	2.01	2.00	3.71	2.40	1.31	.97	.37
3	.62	.57	1.45	3.08	2.26	1.98	2.05	3.75	2.35	1.29	.93	.41
4	.65	.68	1.62	3.09	2.24	1.95	2.11	3.69	2.31	1.26	.92	.48
5	.78	.78	1.45	3.08	2.23	1.96	2.19	3.60	2.24	1.24	.89	.53
6	.93	.84	1.47	3.07	2.19	1.93	2.27	3.55	2.21	1.30	.86	.43
7	.79	.87	1.63	3.14	2.14	1.92	2.42	3.52	2.19	1.30	.86	.30
8	.71	.84	1.41	3.15	2.22	1.87	2.56	3.42	2.14	1.23	.88	.26
9	.70	.93	1.38	3.16	2.23	1.85	2.67	3.31	1.89	1.20	.82	.31
10	.71	1.00	1.49	2.97	2.25	1.87	2.80	3.22	1.82	1.24	.72	.39
11	.79	1.21	1.39	2.89	2.25	1.85	2.94	3.20	1.88	1.21	.87	.30
12	.77	1.15	1.43	2.87	2.24	1.85	3.12	3.17	1.89	1.18	.73	.29
13	.72	1.00	1.38	2.84	2.26	1.87	3.29	3.11	1.96	1.14	.65	.31
14	.66	1.10	1.45	2.86	2.27	1.86	3.44	3.05	1.86	1.17	.66	.47
15	.62	1.25	1.49	2.79	2.27	1.84	3.74	2.97	1.78	1.19	.68	.39
16	.73	1.42	1.54	2.74	2.30	1.83	3.97	2.93	1.75	1.27	.63	.30
17	.82	1.55	1.37	2.75	2.34	1.80	4.27	2.83	1.74	1.21	.57	.25
18	.65	1.44	1.47	2.74	2.33	1.78	4.32	2.74	1.71	1.15	.62	.20
19	.71	1.65	1.56	2.70	2.31	1.74	4.42	2.76	1.71	1.26	.67	.19
20	.78	1.65	1.58	2.68	2.30	1.74	4.51	2.74	1.65	1.08	.57	.35
21	.64	1.50	1.55	2.71	2.26	1.74	4.47	2.71	1.64	1.05	.59	.27
22	.73	1.61	1.55	2.71	2.24	1.71	4.39	2.63	1.57	1.07	.67	.23
23	.85	1.41	1.57	2.61	2.21	1.70	4.49	2.55	1.54	.99	.53	.12
24	.52	1.55	1.68	2.55	2.19	1.71	4.37	2.45	1.49	.97	.54	.14
25	.57	1.44	1.65	2.53	2.19	1.70	4.29	2.46	1.43	.99	.69	.46
26	.50	1.54	1.66	2.47	2.11	1.71	4.24	2.43	1.49	.96	.55	.07
27	.53	1.63	1.71	2.46	2.10	1.77	4.16	2.41	1.41	.97	.47	.11
28	.51	1.44	1.66	2.45	2.05	1.82	4.09	2.39	1.39	1.02	.43	.24
29	.56	1.59	1.87	2.42	-	1.86	4.08	2.35	1.36	1.08	.46	-.09
30	.54	1.49	2.30	2.42	-	1.92	3.92	2.46	1.38	1.09	.50	.19
31	.53	-	2.72	2.38	-	1.95	-	2.48	-	1.11	.47	-

Monthly gage height, in feet, water year October 1940 to September 1941

Month	Maximum	Minimum	Mean
October	0.93	0.50	0.68
November	1.65	.57	1.21
December	2.72	1.37	1.60
Calendar year 1940	7.19	.50	2.26
January	3.16	2.38	2.78
February	2.34	2.05	2.24
March	2.01	1.70	1.84
April	4.51	1.98	3.45
May	3.89	2.35	2.98
June	2.45	1.36	1.82
July	1.38	.96	1.16
August	1.03	.43	.69
September	.53	-.09	.29
Water year 1940-41	4.51	-.09	1.72

Lake Champlain at Burlington, Vt.

Location.- Water-stage recorder, lat. 44°29'00", long. 73°13'30", in Burlington, Chittenden County, 0.6 mile north of railroad station. Datum of gage is 92.86 feet above mean sea level, datum of 1929.

Records available.- May 1907 to September 1941.

Extremes.- Maximum gage height during year, 4.55 feet Apr. 22; minimum, 0.00 foot Sept. 30.

1907-41: Maximum gage height observed, 8.65 feet Mar. 27, 28, 1936; minimum, -0.25 feet Dec. 4, 1908.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.78	0.58	1.53	2.81	2.38	2.11	2.01	3.99	2.45	1.40	1.06	0.47
2	.78	.58	1.50	2.94	2.37	2.07	2.05	3.94	2.40	1.38	1.07	.48
3	.76	.66	1.49	2.95	2.40	2.04	2.08	3.84	2.33	1.34	1.05	.48
4	.74	.71	1.44	3.03	2.42	2.04	2.14	3.75	2.32	1.31	1.02	.45
5	.69	.76	1.46	3.06	a2.38	2.01	2.23	3.69	2.31	1.27	.98	.41
6	.60	.80	1.44	3.05	2.34	1.99	2.36	3.60	2.25	1.22	.94	.42
7	.59	.86	1.38	3.04	2.30	1.97	2.48	3.52	2.16	1.14	.93	.42
8	.73	.90	1.43	3.03	2.28	1.95	2.61	3.49	2.09	1.18	.88	.38
9	.75	.94	1.42	2.99	2.29	1.99	2.72	3.45	a2.03	1.23	.86	.38
10	.77	.95	1.39	2.97	2.33	1.96	2.86	3.39	a1.98	1.23	.85	.37
11	.74	.92	1.39	2.94	2.31	1.95	3.02	3.32	a1.92	1.21	.83	.40
12	.73	.93	1.39	2.91	2.30	1.99	3.17	3.24	1.86	1.26	.75	.41
13	.73	1.07	1.42	2.89	2.29	1.95	3.30	3.18	a1.86	1.26	.72	.42
14	.73	1.19	1.40	2.85	2.26	1.92	3.50	3.11	1.87	1.27	.69	.37
15	.79	1.29	1.39	2.81	2.32	1.89	3.78	3.05	1.82	1.24	.68	.32
16	.78	1.38	1.37	2.77	2.33	1.86	4.08	2.98	1.87	1.18	.69	.34
17	.74	1.40	1.45	2.75	2.37	1.84	4.27	2.94	a1.80	1.15	.69	.35
18	.76	1.48	1.48	2.77	2.37	1.82	4.40	2.91	1.74	1.14	.68	.35
19	.75	1.48	1.46	2.74	2.36	1.81	4.49	2.87	1.76	1.09	.65	.35
20	.73	1.41	1.45	2.76	2.34	1.82	4.50	a2.79	a1.66	1.05	.62	.28
21	.71	1.46	1.49	2.68	2.32	1.80	4.50	2.71	1.56	1.05	.62	.24
22	.68	1.46	1.49	2.68	2.29	1.78	4.53	2.72	a1.55	1.01	.59	.23
23	.59	1.53	1.52	2.63	2.26	1.76	4.50	2.69	a1.55	.99	.58	.25
24	.63	1.53	1.50	2.62	2.23	1.75	4.43	2.60	1.54	.99	.57	.24
26	.64	1.54	1.50	2.60	2.20	1.74	4.39	2.49	1.50	1.00	.54	.16
26	.64	1.54	1.52	2.58	2.18	1.74	4.34	2.38	1.44	1.04	.56	.14
27	.62	1.54	1.51	2.58	2.16	1.77	4.28	a2.40	1.40	1.03	.57	.14
28	.61	1.52	1.56	2.55	2.14	1.84	4.22	a2.43	1.39	1.06	.55	.08
29	.59	1.49	1.78	2.50	-	1.92	4.12	2.45	1.43	1.12	.53	.07
30	.59	1.50	2.18	2.46	-	1.96	4.05	2.42	1.41	1.12	.49	.04
31	.60	-	2.58	2.43	-	1.98	-	2.44	-	1.10	.49	-

a Interpolated.

Note.- Gage heights for periods Dec. 17-20, Jan. 17 to Feb. 4, Feb. 6-12, May 19, 21-26, May 29 to June 8, June 12, 14-16, 18, 19, 21, computed from graph based on once-daily readings of float gage in pump house of Burlington Water Department.

Monthly gage height, in feet, water year October 1940 to September 1941

Month	Maximum	Minimum	Mean
October	0.79	0.59	0.70
November	1.54	.58	1.18
December	2.58	1.37	1.53
Calendar year 1940	7.21	.58	2.29
January	3.06	2.43	2.79
February	2.42	2.14	2.30
March	2.11	1.74	1.90
April	4.53	2.01	3.51
May	3.99	2.38	3.06
June	2.45	1.39	1.84
July	1.40	.99	1.16
August	1.08	.49	.73
September	.48	.04	.31
Water year 1940-41	4.53	.04	1.75

Smaller reservoirs in Richelieu River Basin

Chittenden and East Pittsford Reservoirs on East Creek are operated as a unit for power development. Their downstream order and the usable capacity of each are as follows: Chittenden Reservoir, 5 miles northeast of Chittenden, Vt., completed in 1902, has usable capacity of 819,800,000 cubic feet; East Pittsford Reservoir, at East Pittsford, Vt., completed in 1901, has usable capacity of 150,000,000 cubic feet. Records furnished by Central Vermont Public Service Corporation.

Peacham Pond and Mollys Falls Reservoir are operated as a unit for conservation for hydroelectric power development. Their downstream order and the usable capacity of each are as follows: Peacham Pond on Peacham Brook, 4 miles east of Marshfield, Vt., 126,000,000 cubic feet; Mollys Falls Reservoir on Mollys Brook, 2 miles east of Marshfield, Vt., 366,000,000 cubic feet. Records furnished by Green Mountain Power Corporation.

Monthly change in reservoir contents, in equivalent mean second-feet, water year October 1940 to September 1941

Month	Chittenden and East Pittsford Reservoirs on East Creek	Peacham Pond and Mollys Falls Reservoir in Winooski River Basin
October	-42.9	-25.9
November	+28.6	+35.3
December	+2.24	-.597
Calendar year 1940	-	+6.42
January	-30.3	-24.0
February	-37.3	-37.2
March	-50.9	-26.9
April	+94.7	+58.5
May	+6.83	+19.5
June	-9.11	+7.93
July	+24.4	+15.3
August	-21.4	-30.5
September	-16.4	-16.4
Water year 1940-41	-4.31	-2.05

Great Chazy River at Perry Mills, N. Y.

Location.- Water-stage recorder, lat. 45°00'00", long. 73°30'05", 500 feet upstream from highway bridge at Perry Mills, Clinton County.
Drainage area.- 247 square miles.
Records available.- September 1928 to September 1941.
Average discharge.- 13 years, 262 second-feet.
Extremes.- Maximum discharge during year, 2,510 second-feet Apr. 14 (gage height, 6.60 feet); maximum gage height, 8.32 feet Dec. 30, ice jam; minimum discharge, about 1 second-foot (regulated) June 12 (gage height, 1.44 feet); minimum daily, 13 second-feet (regulated) July 20.
1928-41: Maximum discharge, 6,000 second-feet Apr. 7, 1937 (gage height, 9.74 feet); maximum gage height, 11.2 feet Mar. 15, 1929, ice jam; minimum discharge, about 0.8 second-foot (regulated) Sept. 18, 1932 (gage height, 1.33 feet); minimum daily, 10 second-feet (regulated) Sept. 18, 1932.
Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low and medium stages caused by sawmill nearby. Partial regulation by Chazy Lake. Clinton Prison at Dannemora obtains its water supply from Chazy Lake.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 16						Apr. 17 to Sept. 30					
2.1	52	3.2	297	5.0	1,200	1.7	10	2.2	61	3.4	380
2.2	66	3.4	365	5.5	1,550	1.8	17	2.3	78	4.0	627
2.4	97	3.6	439	6.3	2,230	1.9	26	2.4	98	4.7	1,000
2.6	133	4.0	615			2.0	36	2.6	146		
2.9	206	4.5	880			2.1	47	3.0	249		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	74	116	480	135	86	114	119	149	30	60	47
2	83	115	112	370	135	90	120	122	103	23	49	42
3	82	147	108	300	130	98	140	120	72	20	41	41
4	76	114	106	300	125	96	180	109	68	19	44	35
5	55	113	102	240	*125	94	250	114	71	16	38	47
6	82	126	100	195	124	*92	410	83	59	16	37	33
7	72	147	104	180	135	92	620	67	43	17	37	27
8	99	135	114	*190	150	90	1,040	82	31	18	54	34
9	108	124	118	195	170	90	*1,370	95	43	17	66	36
10	87	113	112	200	155	92	1,600	78	32	18	46	47
11	72	106	110	195	150	90	1,790	69	44	24	41	31
12	64	142	108	185	145	88	1,750	57	23	30	37	34
13	79	153	108	180	140	86	1,690	57	20	47	37	37
14	72	128	106	180	135	84	2,170	55	29	35	20	34
15	85	127	104	185	160	84	2,230	51	45	26	18	40
16	192	129	120	155	155	90	*1,720	48	48	21	73	36
17	148	*120	180	160	150	100	980	50	55	22	72	39
18	109	119	190	180	140	96	757	78	47	20	49	36
19	104	124	175	200	125	92	590	105	40	17	39	34
20	91	131	165	180	120	90	490	80	34	13	40	33
21	68	216	155	165	112	88	415	72	25	15	43	32
22	103	186	150	165	108	86	329	63	21	15	41	37
23	96	174	145	175	102	86	284	67	25	14	46	38
24	88	166	140	165	98	88	264	50	22	15	41	33
25	98	155	135	165	96	90	262	34	21	18	42	35
26	64	122	140	160	92	96	206	44	22	56	50	34
27	68	122	155	155	90	104	193	50	18	36	47	34
28	72	130	215	150	88	114	175	77	17	172	44	35
29	78	123	500	150	-	125	142	424	35	248	-	40
30	103	120	880	145	-	120	125	305	42	121	41	37
31	65	-	640	140	-	112	-	187	-	75	36	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,745	192	55	88.5	0.358	0.41
November	4,003	216	74	133	.538	.60
December	5,713	880	100	184	.745	.86
Calendar year 1940	81,245	2,300	55	222	.899	12.22
January	6,185	480	140	200	.810	.93
February	3,590	170	88	128	.518	.54
March	2,929	125	84	94.5	.383	.44
April	22,406	2,230	114	747	3.02	3.37
May	3,012	424	34	97.2	.394	.45
June	1,304	149	17	43.5	.176	.20
July	1,234	248	13	39.8	.161	.19
August	1,371	73	18	44.2	.179	.21
September	1,098	47	27	36.6	.148	.17
Water year 1940-41	55,590	2,230	13	152	.615	8.37

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 29 to Apr. 8.

Saranac River at Saranac, N. Y.

Location.- Water-stage recorder, lat. 44°38'45". long. 73°44'40", 500 feet upstream from highway bridge at Saranac, Clinton County.

Drainage area.- 521 square miles.

Records available.- September 1930 to September 1941.

Average discharge.- 11 years, 653 second-feet.

Extremes.- Maximum discharge during year, 3,960 second-feet Apr. 16; maximum gage height, 10.75 feet Mar. 20, ice jam; minimum discharge, 75 second-feet (regulated) Sept. 15, 22 (gage height, 1.66 feet); minimum daily, 78 second-feet Sept. 15.
1930-41: Maximum discharge, 5,780 second-feet Apr. 17, 1933, from rating curve extended above 3,700 second-feet by logarithmic plotting; maximum gage height, 12.74 feet Dec. 2, 1936, ice jam; minimum discharge, 67 second-feet (regulated) Aug. 27, 1934 (gage height, 1.63 feet); minimum daily, that of Sept. 15, 1941.

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Considerable diurnal fluctuation caused by power operations. Flow partly regulated by Lower Saranac Lake and elsewhere.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.6	60	2.3	315	4.5	2,160
1.7	85	2.7	537	5.6	3,500
1.8	114	3.2	882		
2.0	184	3.7	1,310		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	182	430	752	470	500	440	322	416	198	212	166
2	257	205	420	640	440	480	520	214	403	210	296	116
3	264	316	440	800	480	450	560	259	398	240	150	200
4	240	200	490	640	480	430	580	376	400	219	264	256
5	254	215	560	840	480	470	680	264	403	325	248	120
6	268	244	620	860	470	*490	740	276	413	242	236	102
7	228	234	560	*800	470	500	840	248	397	304	275	164
8	318	168	520	780	600	540	880	325	433	283	296	126
9	242	397	410	580	520	560	*1,080	284	422	266	232	184
10	228	472	540	520	450	560	1,180	404	478	281	225	187
11	222	196	540	500	480	470	1,350	454	248	218	264	170
12	280	257	490	540	490	500	1,490	454	217	330	338	243
13	310	498	500	560	470	460	1,550	493	270	268	320	200
14	446	528	520	500	470	540	2,660	472	258	127	224	90
15	504	517	580	480	490	500	2,940	434	220	298	197	78
16	420	*330	460	470	430	560	3,450	436	418	362	242	85
17	368	466	540	520	430	480	2,960	516	299	308	286	178
18	272	384	540	540	620	420	2,660	482	299	342	210	236
19	248	398	580	580	640	420	2,280	410	322	288	250	103
20	317	512	540	450	600	400	2,070	424	242	281	226	236
21	188	396	430	460	480	440	1,850	417	207	363	210	149
22	238	496	440	490	440	520	1,530	407	322	362	188	86
23	263	476	470	500	430	540	1,360	404	271	292	179	101
24	297	348	500	440	430	520	1,260	402	272	278	98	232
25	272	474	480	460	440	520	1,140	414	242	294	152	179
26	223	468	460	490	440	480	1,070	281	318	296	244	132
27	173	545	440	460	460	490	999	303	127	166	234	130
28	268	520	700	470	520	470	884	308	306	245	191	176
29	298	390	1,020	500	-	470	705	552	452	397	257	184
30	400	420	1,250	440	-	490	d 320	488	204	302	146	145
31	335	-	1,090	500	-	400	-	430	-	178	186	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,911	504	173	287	0.551	0.64
November	11,252	545	168	375	.720	.80
December	17,560	1,250	410	566	1.09	1.26
Calendar year 1940	214,916	2,810	120	587	1.13	15.34
January	17,762	860	440	573	1.10	1.27
February	13,620	640	430	486	.933	.97
March	15,070	560	400	486	.933	1.08
April	42,028	3,450	320	1,401	2.69	3.00
May	11,953	552	214	386	.741	.85
June	9,677	478	127	323	.620	.69
July	8,563	397	127	276	.530	.61
August	7,076	338	98	228	.438	.50
September	4,754	256	78	158	.303	.34
Water year 1940-41	168,226	3,450	78	461	.885	12.01

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of partly estimated gage height.
Note.- Stage-discharge relation affected by ice Nov. 26 to Dec. 30, Jan. 2 to Apr. 8 (doubtful gage-height record Dec. 3-30, Jan. 15 to Feb. 5, Feb. 11-13, Feb. 21 to Mar. 6, Mar. 28 to Apr. 8).

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

Location.- Water-stage recorder, lat. 44°18'40", long. 73°55'00", 4 miles northeast of Newman, Essex County, and 4 miles downstream from Lake Placid outlet.

Drainage area.- 116 square miles.

Records available.- June 1916 to December 1917, July 1919 to September 1941.

Average discharge.- 22 years (1919-41), 215 second-feet.

Extremes.- Maximum discharge during year, 2,970 second-feet Apr. 16 (gage height, 7.18 feet); minimum, 24 second-feet Sept. 22, 23 (gage height, 2.20 feet); minimum daily, 24 second-feet Sept. 22, 23.

1916-17, 1919-41: Maximum discharge, 10,800 second-feet Sept. 22, 1938 (gage height, 12.20 feet), from rating curve extended above 3,200 second-feet by logarithmic plotting; practically no flow Sept. 13, 1920 (gage height, 1.60 feet), caused by closing gates in logging dam; minimum daily, 7.2 second-feet (regulated), July 29, 1920.

Remarks.- Records excellent except those for periods of ice effect, which are good. Diurnal fluctuation at low and medium stages caused by power plants.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.2	23.5	2.7	75	3.6	306	5.2	1,170
2.4	39	2.8	90	4.0	478	5.6	1,460
2.5	49	3.0	126	4.4	682	6.1	1,680
2.6	61	3.2	173	4.8	915	6.6	2,350

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	66	91	442	*74	52	66	229	9e	47	48	94
2	58	129	81	338	70	52	72	189	91	49	42	70
3	54	321	83	275	72	50	70	150	82	45	40	47
4	51	193	75	*255	68	49	86	124	78	43	39	64
5	52	145	72	196	66	*48	96	129	71	39	38	43
6	50	216	70	*162	64	47	104	133	67	39	32	36
7	54	202	74	140	78	44	130	136	60	38	33	36
8	197	144	80	122	140	48	145	247	59	66	34	34
9	190	117	83	124	175	47	170	267	55	68	32	36
10	118	96	78	123	135	47	*210	194	52	92	36	46
11	96	102	74	112	120	46	280	153	52	78	32	61
12	79	359	75	98	105	45	350	133	49	543	34	77
13	72	343	90	88	102	45	500	119	45	296	32	45
14	73	199	86	82	114	52	1,700	107	51	158	30	35
15	89	160	82	72	155	66	2,270	101	50	99	30	34
16	147	*144	80	72	130	70	2,150	96	55	73	56	52
17	119	122	130	90	112	66	*1,430	119	71	63	48	36
18	97	113	150	112	99	62	1,150	224	96	54	42	30
19	91	115	140	113	88	58	976	161	73	58	35	25
20	79	97	127	87	86	56	1,220	129	59	66	33	25
21	77	109	119	82	82	56	1,040	112	52	55	33	25
22	69	132	110	94	76	54	542	102	45	40	34	24
23	70	206	100	99	72	58	356	98	44	50	41	24
24	82	159	90	83	68	66	290	109	43	43	35	26
25	87	132	96	86	64	80	241	105	44	30	38	26
26	84	106	92	81	60	86	210	93	42	33	133	25
27	80	98	95	76	58	80	188	100	38	40	83	26
28	70	95	235	75	56	82	179	111	41	45	52	27
29	67	78	940	76	-	76	184	141	78	84	35	29
30	64	96	1,240	68	-	66	201	136	59	49	35	30
31	68	-	810	72	-	62	-	113	-	38	51	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,643	197	50	85.3	0.735	0.85
November	4,594	359	66	153	1.32	1.47
December	5,748	1,240	70	185	1.59	1.83
Calendar year 1940	70,707	2,640	36	193	1.66	22.65
January	3,975	442	68	128	1.10	1.27
February	2,589	175	56	92.5	.797	.83
March	1,816	86	44	58.6	.505	.58
April	16,608	2,270	66	554	4.78	5.33
May	4,360	267	93	141	1.22	1.41
June	1,805	98	38	60.1	.518	.58
July	2,521	543	30	81.3	.701	.81
August	1,316	133	30	42.5	.366	.42
September	1,188	94	24	39.6	.341	.38
Water year 1940-41	49,161	2,270	24	135	1.16	15.76

Peak discharge.- Apr. 14 (10 p.m.) 2,240 sec.-ft.; Apr. 16 (1 a.m.) 2,970 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by siphonic action or ice Dec. 5-8; 11, 13-19, 29, 30, Jan. 13, 15-17, 21, Jan. 29 to Feb. 11, Feb. 19 to Apr. 13.

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Ausable River near Ausable Forks, N. Y.

Location.- Water-stage recorder, lat. 44°27'05", long. 73°38'35", 1¼ miles downstream from confluence of East and West Branches and Ausable Forks, Clinton County. Datum of gage is 505.61 feet above mean sea level, adjustment of 1912.
Drainage area.- 448 square miles.
Records available.- September 1924 to September 1941. August 1910 to September 1925 at Ausable Forks, 1½ miles upstream.
Average discharge.- 17 years (1924-41), 665 second-feet.
Extremes.- Maximum discharge during year, 8,010 second-feet Apr. 15 (gage height, 6.97 feet); minimum, 62 second-feet (regulated) Sept. 19 (gage height, 0.94 foot).
1910-41: Maximum discharge, 24,200 second-feet Sept. 22, 1938 (gage height, 11.65 feet), from rating curve extended above 9,100 second-feet by logarithmic plotting; maximum gage height, about 14.0 feet Mar. 27, 1934, caused by ice jam; practically no flow July 21, 1912.
Remarks.- Records excellent except those for periods of ice effect or doubtful gage-height record, which are fair. Flow partly regulated, principally by Taylor Pond and Fern Lake. Diurnal fluctuations at low and medium stages caused by power plants above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15						Apr. 16 to Sept. 30			
1.2	122	2.3	630	5.0	3,850	1.0	73	1.4	178
1.4	181	2.9	1,085	6.0	5,740	1.1	94	1.6	252
1.6	253	3.5	1,690	6.6	7,090	1.2	118		
1.9	391	4.2	2,610			Note.- Same as preceding table above 1.6 feet.			

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	167	172	225	1,340	185	145	280	650	322	182	173	220
2	179	186	220	819	*175	140	310	580	277	148	148	330
3	175	532	210	700	170	140	340	496	252	d135	d130	224
4	168	591	200	580	170	135	390	420	224	d130	d125	172
5	158	412	195	*460	165	*130	440	398	216	d130	d125	186
6	157	420	190	420	165	130	480	406	197	d130	d118	140
7	158	515	205	380	195	130	620	395	182	d125	116	129
8	344	392	220	360	520	130	752	520	164	206	112	127
9	513	306	225	340	480	125	884	704	156	236	108	117
10	366	264	210	320	400	125	*1,050	560	d145	220	131	124
11	285	244	200	300	360	125	1,310	465	d135	233	115	150
12	245	504	205	270	310	125	1,590	394	d125	791	124	175
13	228	844	235	250	290	125	2,000	355	d120	702	114	182
14	220	537	225	235	310	160	5,940	320	d130	450	110	130
15	256	*434	220	225	430	200	7,060	302	d150	272	116	116
16	340	391	215	220	360	225	5,940	276	182	200	133	106
17	290	352	320	270	320	200	3,890	307	216	176	168	118
18	252	302	350	330	280	185	3,280	606	256	171	146	96
19	225	248	380	340	260	175	2,610	494	186	168	129	86
20	204	248	350	280	240	d170	3,200	391	196	168	122	127
21	188	281	320	240	225	d165	2,940	338	170	168	114	84
22	174	286	290	260	215	d160	1,690	294	154	d135	114	77
23	176	456	270	270	200	185	1,120	270	d135	d140	119	83
24	178	410	250	245	185	230	888	305	d145	d140	119	88
25	200	352	270	235	175	260	748	306	d145	163	128	86
26	202	222	280	220	165	290	650	280	d135	190	232	80
27	194	260	280	210	155	310	584	273	d125	200	243	82
28	182	250	580	205	150	310	544	340	d140	220	167	83
29	165	225	2,450	200	-	300	542	720	252	242	133	82
30	167	235	4,140	190	-	280	559	566	222	208	121	82
31	170	-	2,510	190	-	250	-	402	-	186	138	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,929	513	157	224	0.500	0.58
November	11,171	844	172	372	.830	.93
December	16,470	4,140	190	531	1.19	1.37
Calendar year 1940	209,600	7,080	110	573	1.28	17.40
January	10,904	1,340	190	352	.786	.91
February	7,245	520	150	259	.578	.60
March	5,760	310	125	186	.415	.48
April	52,651	7,060	280	1,754	3.92	4.37
May	13,133	720	270	424	.946	1.09
June	5,454	322	120	182	.406	.45
July	6,965	791	125	225	.502	.58
August	4,191	243	108	135	.301	.35
September	3,882	330	77	129	.288	.32
Water year 1940-41	144,735	7,060	77	397	.886	12.03

Peak discharge.- Apr. 14 (7:40 p.m.) 7,600 sec.-ft.; Apr. 15 (10:40 p.m.) 8,010 sec.-ft.
* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of weather records and records for station on East and West Branches of Ausable River and on Black Brook at Black Brook.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 29, Jan. 3 to Apr. 7.

Black Brook at Black Brook, N. Y.

Location.- Water-stage recorder, lat. 44°26'50", long. 73°44'45", 100 feet downstream from abandoned hydroelectric plant of Associated Gas & Electric System and three-quarters of a mile south of town of Black Brook, Clinton County.

Drainage area.- 49.4 square miles.

Records available.- September 1924 to September 1941.

Average discharge.- 17 years, 49.6 second-feet.

Extremes (regulated).- Maximum discharge during year, 453 second-feet Apr. 14 (gage height, 4.64 feet); minimum, 5.4 second-feet June 10, 11 (gage height, 1.41 feet).
1924-41: Maximum discharge, 1,050 second-feet Apr. 6, 1937 (gage height, 6.95 feet), from rating curve extended above 450 second-feet by logarithmic plotting; minimum, 0.8 second-foot July 2 and Aug. 29, 1931 (plant shut down).

Remarks.- Records good except those for periods of ice effect or fragmentary gage-height record, which are fair. Flow regulated by Fern Lake and Taylor Pond.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1-15		Oct. 16 to Sept. 30					
1.9	29	1.4	5.1	1.8	22.4	3.0	144
2.0	36	1.5	8.1	2.0	35.6	3.4	206
2.2	52	1.6	12.0	2.3	60.5	3.8	276
		1.7	16.8	2.6	91	4.3	375

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	8.9	10	60	23	21	27	24	19	36	68	38
2	45	11	10	42	*23	22	28	22	16	31	47	34
3	45	20	10	33	22	22	26	22	15	28	37	32
4	44	18	9.8	29	21	*22	25	20	15	34	37	31
5	42	15	9.6	*27	21	21	34	20	13	39	37	31
6	42	13	9.4	26	20	21	37	22	12	38	36	30
7	42	14	10	25	23	20	52	20	9.8	38	36	28
8	52	13	11	24	36	21	70	26	8.5	42	36	25
9	47	12	11	24	47	21	97	31	8.8	42	37	17
10	46	11	10	23	41	20	*134	26	7.2	40	43	17
11	44	10	10	22	37	20	174	22	6.3	39	41	26
12	44	12	11	22	34	20	198	22	6.3	48	49	19
13	43	11	12	22	31	23	209	19	6.3	45	42	15
14	42	10	11	21	34	33	321	17	6.9	18	41	13
15	50	*12	11	21	34	39	362	16	12	7.8	39	13
16	37	13	12	21	32	38	270	15	20	6.6	40	12
17	19	12	16	23	31	34	151	19	21	17	40	11
18	15	12	18	26	29	31	111	27	21	23	36	10
19	12	11	17	29	28	29	84	21	20	26	36	8.9
20	11	12	16	27	27	28	72	17	17	24	36	8.1
21	10	16	15	25	26	27	61	14	15	22	33	8.5
22	9.3	16	14	26	26	26	51	13	15	23	34	8.3
23	9.3	16	13	21	26	30	42	12	14	22	34	21
24	9.7	15	13	21	25	39	38	13	22	29	31	21
25	9.3	14	14	20	24	47	34	12	24	76	36	19
26	8.9	11	13	17	23	45	31	12	23	98	46	18
27	8.5	12	14	24	23	44	29	13	23	101	36	16
28	8.5	12	36	23	22	36	27	18	33	104	34	14
29	7.5	11	145	23	-	31	26	82	61	61	33	14
30	7.8	11	200	22	-	30	24	51	42	47	33	13
31	8.9	-	97	22	-	27	-	27	-	72	35	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	852.7	52	7.5	27.5		
November	384.9	20	8.9	12.8		
December	808.8	200	9.4	26.1		
Calendar year 1940	12,958.3	258	6.0	35.4		
January	791	60	17	25.5		
February	789	47	20	28.2		
March	888	47	20	28.6		
April	2,845	362	24	94.8		
May	695	82	12	22.4		
June	533.1	61	6.3	17.8		
July	1,277.4	104	6.6	41.2		
August	1,199	68	31	38.7		
September	571.8	38	8.1	19.1		
Water year 1940-41	11,635.7	362	6.3	31.9		

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 26, 28, 29, Dec. 1 to Jan. 24, Jan. 27 to Feb. 20, Feb. 24-28, Mar. 4-14, 17-24 (fragmentary gage-height record Dec. 4 to Jan. 5).

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

Location.- Water-stage recorder, lat. 44°26'20", long. 73°40'55", 700 feet upstream from upper highway bridge in Ausable Forks, Essex County, and half a mile upstream from confluence with West Branch. Datum of gage is 545.32 feet above mean sea level, adjustment of 1912.

Drainage area.- 198 square miles.

Records available.- September 1924 to September 1941.

Average discharge.- 17 years, 300 second-feet.

Extremes.- Maximum discharge during year, 4,460 second-feet Apr. 15 (gage height, 6.34 feet); maximum gage height, 7.92 feet Dec. 29, ice jam; minimum discharge, 21 second-feet Sept. 26 (gage height, 0.88 foot).
1924-41: Maximum discharge, 20,100 second-feet Sept. 22, 1938 (gage height, 12.91 feet, present site and datum, or 11.2 feet, site and datum then in use, from flood-marks); minimum discharge observed, 20 second-feet Aug. 11, 14, 28, 1934.

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29				Dec. 30 to Sept. 30					
1.2	51	2.3	321	0.8	15	1.6	117	3.7	1,170
1.4	79	2.6	450	.9	23	1.8	170	4.4	1,780
1.6	115	3.0	655	1.0	32	2.1	269	5.1	2,600
1.8	160	3.5	990	1.2	53	2.5	437	5.9	3,740
2.0	216	4.0	1,410	1.4	79	3.0	704		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	56	94	648	68	56	114	296	100	49	44	110
2	55	68	90	396	64	56	130	265	88	40	39	168
3	51	458	86	349	62	54	150	216	79	37	36	111
4	49	284	82	*281	*60	54	180	185	72	35	34	77
5	47	196	80	213	58	52	190	173	68	35	34	61
6	46	196	78	179	56	*52	210	167	64	32	33	54
7	46	216	82	135	68	46	260	159	60	32	31	53
8	118	163	90	155	250	50	320	208	55	98	29	49
9	182	128	84	135	190	50	400	244	52	89	28	44
10	134	111	80	120	155	50	*511	197	49	72	33	50
11	107	104	78	108	135	50	667	167	44	68	29	59
12	88	250	78	98	120	49	793	145	42	296	28	72
13	76	360	86	90	110	49	1,040	130	42	260	28	69
14	76	226	84	84	140	54	3,590	117	45	166	25	58
15	78	*187	82	80	200	68	3,740	106	49	103	27	50
16	102	165	80	78	150	76	2,670	96	62	75	35	43
17	88	146	112	102	125	72	1,820	123	78	65	41	39
18	78	126	130	120	108	66	1,450	279	84	57	44	34
19	72	104	135	140	92	64	1,210	194	76	51	37	31
20	64	106	125	108	82	62	1,510	150	73	55	33	28
21	61	123	120	84	86	60	1,370	124	66	52	30	28
22	59	119	114	96	82	60	814	106	59	46	30	27
23	56	199	108	108	78	64	536	100	53	44	32	25
24	60	165	94	102	72	84	415	115	50	40	31	25
25	68	147	106	96	68	100	341	111	46	39	31	24
26	66	95	108	90	64	112	292	98	42	43	76	22
27	63	129	106	84	60	124	265	96	38	42	70	24
28	59	114	260	80	58	130	247	125	37	45	43	25
29	54	106	1,400	76	-	118	244	237	58	72	38	23
30	54	98	2,060	72	-	108	258	162	61	67	40	24
31	56	-	1,190	70	-	100	-	120	-	51	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,273	182	46	73.3	0.370	0.43
November	4,945	458	56	165	.833	.93
December	7,502	2,060	78	242	1.22	1.41
Calendar year 1940	94,805	3,980	32	259	1.31	17.80
January	4,577	648	70	148	.747	.86
February	2,861	250	56	102	.515	.54
March	2,190	130	46	70.6	.357	.41
April	25,737	3,740	114	858	4.33	4.83
May	5,011	296	96	162	.818	.94
June	1,792	100	37	59.7	.302	.34
July	2,256	296	32	72.8	.368	.42
August	1,130	76	25	36.5	.184	.21
September	1,507	168	22	50.2	.254	.28
Water year 1940-41	61,781	3,740	22	169	.854	11.60

Peak discharge.- Apr. 14 (4 p.m.) 4,440 sec.-ft.; Apr. 15 (9 p.m.) 4,460 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 29, Jan. 8 to Apr. 9.

Bouquet River at Willsboro, N. Y.

Location.- Water-stage recorder, lat. 44°21'30", long. 73°23'50", half a mile southwest of Willsboro, Essex County.

Drainage area.- 275 square miles.

Records available.- August and September 1904 (gage heights and discharge measurements only), August to November 1908, July 1923 to September 1941.

Average discharge.- 18 years (1923-41), 295 second-feet.

Extremes.- Mamimum discharge during year, 2,750 second-feet Apr. 15 (gage height, 5.67 feet); maximum gage height, 7.73 feet Dec. 29, ice jam; minimum discharge, 16 second-feet Sept. 18 (gage height, 1.95 feet).
1923-41: Maximum discharge, about 11,800 second-feet Oct. 1, 1924 (gage height, 10.85 feet), from rating curve extended above 4,600 second-feet by logarithmic plotting; minimum, that of Sept. 18, 1941.

Remarks.- Records good except those for periods of ice effect, and periods of fragmentary or no gage-height record, which are fair. Occasional slight diurnal fluctuation at low stages caused by power plants above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29				Dec. 30 to Sept. 30							
2.3	51	3.0	260	1.9	12	2.3	53	2.7	142	3.7	719
2.4	70	3.2	364	2.0	19.5	2.4	69	2.8	177	4.2	1,125
2.6	117	3.5	555	2.1	29	2.5	89	3.0	267	4.8	1,690
2.8	179	3.8	780	2.2	40	2.6	113	3.3	438	5.5	2,530

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	90	100	673	84	76	175	206	115	55	38	a52
2	66	99	96	354	82	78	200	198	95	53	32	a60
3	62	263	92	331	80	78	245	185	92	50	28	a44
4	68	225	90	260	*78	*76	290	174	89	50	28	a37
5	70	166	88	200	78	72	320	166	86	49	26	34
6	62	153	84	*165	76	70	408	163	82	44	24	27
7	70	140	86	150	86	68	484	160	80	39	20	23
8	104	132	90	135	290	68	464	170	75	48	20	19
9	137	117	92	130	250	66	544	190	69	59	17	23
10	116	93	88	125	195	66	644	177	50	69	23	27
11	102	94	84	118	150	66	*813	154	56	63	27	28
12	92	118	84	112	130	66	908	136	59	127	21	27
13	88	141	92	108	116	66	974	131	61	136	20	31
14	81	*161	88	104	122	70	1,630	133	66	91	20	31
15	88	150	86	98	260	84	2,410	122	71	70	18	31
16	112	162	86	96	210	96	1,870	116	71	59	22	30
17	112	153	104	122	150	90	1,060	127	71	52	40	25
18	100	132	120	160	120	82	908	209	74	49	46	20
19	92	117	124	170	108	78	696	184	94	49	36	20
20	85	102	112	130	100	76	704	146	89	48	31	21
21	68	102	100	102	96	76	662	116	81	43	36	19
22	68	120	94	110	92	74	510	118	69	37	a31	21
23	62	124	88	116	86	78	395	99	59	36	a34	20
24	60	159	84	104	84	88	343	110	53	31	31	20
25	74	145	84	98	82	114	304	105	53	31	28	21
26	85	97	88	94	80	140	272	104	60	32	36	20
27	85	109	90	92	78	170	253	99	50	34	38	19
28	79	106	170	90	76	190	224	112	50	34	a33	18
29	74	104	740	88	-	175	215	206	58	44	a26	19
30	79	102	1,500	86	-	160	202	177	58	43	a27	20
31	85	-	1,400	84	-	150	-	130	-	44	a30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,596	137	60	83.7	0.304	0.35
November	3,976	263	90	133	.484	.54
December	6,324	1,500	84	204	.742	.86
Calendar year 1940	91,411	2,560	40	250	.909	12.36
January	4,805	673	84	155	.564	.65
February	3,439	290	76	123	.447	.47
March	2,907	190	66	93.8	.341	.39
April	19,147	2,410	175	638	2.32	2.59
May	4,623	209	99	149	.542	.62
June	2,136	115	50	71.2	.259	.29
July	1,669	136	31	53.8	.196	.23
August	887	46	17	28.6	.104	.12
September	807	60	18	26.9	.098	.11
Water year 1940-41	53,316	2,410	17	146	.531	7.22

Peak discharge.- Apr. 15 (6 a.m.) 2,750 sec.-ft.; Apr. 16 (8:25 a.m.) 2,200 sec.-ft.
* Winter discharge measurement made on this day.
a Fragmentary or no gage-height record; discharge computed on basis of partial gage-height record weather records, and records for East Branch of Ausable River at Ausable Forks.
Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 30, Jan. 4 to Apr. 5.

Lake George at Rogers Rock, N. Y.

Location.- Water-stage recorder, lat. 43°48'10", long. 73°27'25", about 500 feet north of Hooper's dock on south side of Stones Bay, Rogers Rock, Essex County. Datum of gage is 315.93 feet above mean sea level, adjustment of 1912.

Records available.- July 1913 to September 1941.

Extremes.- Maximum gage height during year, 3.52 feet Feb. 8; minimum, 0.94 foot Sept. 29. 1913-41: Maximum gage height observed, 5.09 feet Apr. 9, 1936; minimum, that of Sept. 29, 1941.

Remarks.- Elevation of lake surface regulated by power plants and flood gates at Ticonderoga. Lake George has been controlled by a dam at its outlet for more than 100 years.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.81	2.37	2.46	3.07	3.17	3.09	2.46	2.94	2.62	2.32	2.07	1.61
2	2.76	2.42	2.49	3.10	3.14	3.10	2.46	2.90	2.60	2.29	2.05	1.56
3	2.74	2.48	2.46	3.15	3.14	3.08	2.47	2.93	2.57	2.23	2.03	1.55
4	2.73	2.48	2.48	3.18	3.13	3.09	2.47	2.95	2.57	2.22	2.00	1.54
5	2.75	2.48	2.47	3.24	3.13	3.09	2.48	2.92	2.53	2.23	1.98	1.53
6	2.76	2.49	2.45	3.20	3.12	3.06	2.49	2.93	2.53	2.23	1.93	1.54
7	2.77	2.46	2.48	3.19	3.13	3.04	2.51	2.94	2.54	2.25	1.92	1.50
8	2.80	2.43	2.45	3.20	3.32	2.99	2.54	2.94	2.55	2.29	1.92	1.44
9	2.77	2.41	2.40	3.21	3.35	3.00	2.58	2.91	2.49	2.27	1.90	1.43
10	2.74	2.42	2.48	3.20	3.37	3.00	2.61	2.85	2.40	2.26	1.77	1.46
11	2.74	2.43	2.39	3.18	3.38	2.98	2.66	2.89	2.35	2.24	1.83	1.48
12	2.75	2.51	2.41	3.19	3.37	2.98	2.72	2.89	2.40	2.22	1.77	1.46
13	2.73	2.46	2.41	3.21	3.38	2.96	2.77	2.87	2.40	2.24	1.70	1.41
14	2.70	2.42	2.41	3.23	3.38	2.95	2.84	2.85	2.40	2.26	1.70	1.43
15	2.70	2.48	2.42	3.19	3.38	2.90	2.89	2.83	2.43	2.24	1.68	1.41
16	2.66	2.53	2.45	3.19	3.37	2.87	2.88	2.83	2.45	2.25	1.66	1.37
17	2.67	2.56	2.48	3.22	3.35	2.88	2.95	2.83	2.44	2.25	1.64	1.36
18	2.64	2.54	2.51	3.23	3.33	2.84	2.95	2.81	2.44	2.22	1.64	1.29
19	2.58	2.54	2.50	3.24	3.32	2.82	2.99	2.79	2.46	2.26	1.64	1.26
20	2.58	2.54	2.50	3.23	3.30	2.74	3.03	2.77	2.44	2.21	1.60	1.29
21	2.55	2.51	2.48	3.23	3.27	2.72	3.07	2.78	2.42	2.19	1.58	1.27
22	2.53	2.53	2.49	3.22	3.24	2.67	3.04	2.76	2.37	2.16	1 59	1.27
23	2.55	2.45	2.46	3.20	3.24	2.64	3.05	2.72	2.36	2.14	1.56	1.20
24	2.49	2.50	2.50	3.18	3.23	2.63	3.05	2.67	2.40	2.13	1.54	1.18
25	2.46	2.48	2.50	3.20	3.22	2.62	3.00	2.70	2.31	2.12	1.56	1.23
26	2.44	2.43	2.47	3.19	3.18	2.61	3.02	2.69	2.35	2.08	1.55	1.17
27	2.43	2.47	2.48	3.19	3.16	2.58	2.98	2.64	2.32	2.08	f1.51	1.14
28	2.39	2.48	2.53	3.19	3.12	2.54	2.96	2.66	2.32	2.09	f1.47	1.16
29	2.38	2.47	2.68	3.19	-	2.51	2.99	2.60	2.29	2.13	1.45	1.03
30	2.38	2.44	2.93	3.19	-	2.52	2.95	2.61	2.31	2.11	1.45	1.08
31	2.37	-	3.06	3.17	-	2.50	-	2.63	-	2.09	1.44	-

f Fragmentary gage-height record; mean daily gage height computed on basis of partial interpolation.

Monthly gage height, in feet, water year October 1940 to September 1941

Month	Maximum	Minimum	Mean
October	2.81	2.37	2.62
November	2.56	2.37	2.47
December	3.06	2.39	2.51
Calendar year 1940	4.58	1.10	2.80
January	3.24	3.07	3.19
February	3.38	3.12	3.26
March	3.10	2.50	2.84
April	3.07	2.46	2.80
May	2.95	2.60	2.81
June	2.62	2.29	2.44
July	2.32	2.08	2.20
August	2.07	1.44	1.71
September	1.61	1.03	1.36
Water year 1940-41	3.38	1.03	2.51

Poultney River below Fair Haven, Vt.

Location.- Water-stage recorder, lat. 43°37'40", long. 73°18'50", a third of a mile downstream from Carver Falls, 1.9 miles upstream from Hubbardton River, and 3½ miles northwest of Fair Haven, Rutland County.

Drainage area.- 187 square miles.

Records available.- October 1928 to September 1941.

Average discharge.- 13 years, 243 second-feet.

Extremes.- Maximum discharge during year, 4,380 second-feet Dec. 29 (gage height, 13.76 feet), from rating curve extended above 1,200 second-feet on basis of computations of flow over dam at gage heights 16.10 feet and 21.40 feet; minimum, 7.9 second-feet (regulated) July 7; minimum daily, 8.2 second-feet July 6.
1928-41: Maximum discharge, 10,300 second-feet Sept. 22, 1938, from rating curve extended above 1,200 second-feet on basis of computations of flow over dam at gage heights 16.10 feet and 21.40 feet; maximum gage height, 22.90 feet Mar. 12, 1936 (ice jam); minimum discharge, 2.3 second-feet (regulated) July 18, 1937, minimum daily, 2.9 second-feet Oct. 13, 1935.

Remarks.- Records good except those for periods of ice effect or shifting control, which are fair. Flow regulated by power plant above station and by Lake Bomoseen.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	96	125	850	170	175	301	109	11	15	80	70
2	88	88	100	605	210	177	289	138	43	14	67	62
3	78	109	115	500	225	177	303	133	38	15	13	36
4	78	57	90	438	220	175	375	81	29	12	54	42
5	34	172	100	375	225	173	412	91	29	10	46	52
6	26	141	130	287	*220	173	412	100	42	8.2	37	15
7	60	135	105	*221	220	175	475	92	11	18	37	22
8	92	130	125	240	500	161	388	88	11	1,900	40	43
9	84	60	150	215	380	143	388	128	13	714	32	37
10	85	106	120	220	320	168	400	111	31	384	13	46
11	85	50	130	230	330	141	412	102	25	273	36	334
12	34	143	120	200	230	148	400	90	12	234	30	206
13	37	223	140	180	230	143	375	74	13	226	29	164
14	80	194	170	200	230	141	388	69	11	212	13	58
15	84	480	140	210	300	111	394	71	13	139	27	85
16	81	472	160	220	340	92	342	65	30	119	63	69
17	77	351	310	225	275	155	310	76	32	96	12	66
18	78	285	300	210	250	185	290	48	48	109	50	67
19	61	239	265	215	250	158	277	63	26	88	40	67
20	15	219	231	215	250	*138	250	52	13	135	30	35
21	78	200	202	220	255	120	244	54	11	143	29	15
22	85	184	182	210	250	120	238	37	11	76	40	44
23	86	170	175	215	245	140	207	43	29	76	13	41
24	93	143	173	215	239	250	182	44	31	69	13	37
25	105	146	111	215	229	211	181	10	13	66	46	42
26	30	132	156	215	223	300	145	39	13	65	42	43
27	15	128	141	200	208	430	141	41	13	15	31	25
28	93	112	380	215	193	400	142	52	15	62	29	13
29	78	96	2,000	220	-	375	126	52	15	130	29	16
30	88	111	2,960	215	-	350	113	10	14	106	13	26
31	95	-	1,480	195	-	298	-	52	-	84	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,200	105	15	71.0	0.380	0.44
November	5,252	480	50	175	.936	1.04
December	11,086	2,960	90	358	1.91	2.20
Calendar year 1940	103,445	5,760	8	283	1.51	20.57
January	8,391	650	180	271	1.45	1.67
February	7,217	500	170	258	1.38	1.44
March	6,103	430	92	197	1.05	1.21
April	8,900	475	113	297	1.59	1.77
May	2,215	138	10	71.5	.382	.44
June	646	48	11	21.5	.115	.13
July	5,613.2	1,900	8.2	181	.968	1.12
August	1,047	80	12	33.8	.181	.21
September	1,878	334	13	62.6	.335	.37
Water year 1941	60,548.2	2,960	8.2	166	.888	12.04

Peak discharge.- Dec. 29 (12 p.m.) 4,380 sec.-ft.; July 8 (3 p.m.) 3,480 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 1-19, 28, 29, Jan. 8 to Feb. 22, Mar. 17, 18, 21-23, 26-30. Shifting-control corrections applied Oct. 1 to Apr. 14, July 8 to Sept. 17 on basis of eight discharge measurements and gage heights. Discharge in second-feet per square mile and run-off in inches may not represent the natural flow because of regulation.

Otter Creek at Center Rutland, Vt.

Location (revised).- Water-stage recorder, lat. 43°36'15", long. 73°00'50", at highway bridge in Center Rutland, Rutland County, 200 feet downstream from dam, 1.2 miles downstream from East Creek and 1⅛ miles west of Rutland.

Drainage area.- 307 square miles.

Records available.- May 1928 to September 1941.

Average discharge.- 13 years, 552 second-feet.

Extremes.- Maximum discharge during year, 4,220 second-feet July 8 (gage height, 6.73 feet); minimum daily, 55 second-feet July 5.
1928-41: Maximum discharge, 13,700 second-feet Sept. 22, 1938 (gage height, 12.45 feet), by computation of flow over dam; minimum daily, that of July 5, 1941.

Remarks.- Records good. Flow regulated by power plants and by East Pittsford and Chittenden Reservoirs on East Creek (see p. 152).

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

0.3	55	1.2	198	3.5	1,160
.4	66	1.6	300	4.0	1,520
.6	91	2.0	425	5.0	2,370
.8	121	2.5	625	6.0	3,400
1.0	156	3.0	860		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	193	347	1,360	252	226	381	395	152	131	189	511
2	184	447	404	895	186	195	363	431	158	131	153	341
3	196	1,150	375	768	268	241	450	359	149	140	135	198
4	173	710	299	747	261	351	647	315	148	101	133	168
5	149	489	365	596	252	354	791	317	147	55	129	160
6	124	465	375	582	236	319	719	309	140	81	130	126
7	169	466	345	424	313	283	1,000	282	123	235	134	122
8	235	405	406	441	2,140	211	880	327	105	2,680	121	137
9	239	333	475	465	1,640	251	1,000	462	124	537	107	145
10	223	272	401	494	907	241	1,120	527	136	331	86	221
11	258	326	408	433	639	247	1,240	388	124	243	120	690
12	247	830	373	346	540	247	1,280	315	106	197	136	310
13	146	1,270	571	404	477	273	1,310	288	126	419	107	195
14	189	880	573	408	492	278	1,560	259	142	247	129	156
15	202	1,720	392	415	687	293	1,920	244	148	183	144	139
16	240	1,660	436	379	497	282	2,060	234	173	140	170	151
17	236	1,180	720	384	416	468	1,680	217	264	150	151	136
18	217	835	587	346	419	394	1,310	217	257	143	163	120
19	174	674	572	372	351	299	1,090	215	198	485	167	130
20	150	618	506	415	337	307	910	198	176	564	139	116
21	184	614	501	376	327	275	850	166	136	270	141	91
22	203	587	483	345	289	277	687	177	115	206	125	120
23	197	544	453	345	246	226	553	199	111	173	99	145
24	211	473	408	325	295	376	504	135	154	146	91	136
25	210	503	351	279	289	346	462	133	135	143	114	122
26	140	424	383	228	293	369	409	158	136	136	143	114
27	133	427	450	308	259	413	369	165	115	112	138	92
28	198	391	950	298	246	422	375	180	108	220	123	74
29	190	326	2,020	295	-	425	322	320	393	636	114	98
30	200	440	2,470	289	-	380	309	279	184	326	88	137
31	194	-	2,140	302	-	358	-	191	-	221	91	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,022	258	124	194	0.632	0.73
November	19,852	1,860	193	662	2.16	2.40
December	19,539	2,470	299	630	2.05	2.37
Calendar year 1940	233,882	6,310	57	639	2.08	28.32
January	14,064	1,360	228	454	1.48	1.70
February	13,554	2,140	186	484	1.58	1.64
March	9,627	468	195	311	1.01	1.17
April	26,551	2,060	309	885	2.88	3.22
May	8,402	527	133	271	.883	1.02
June	4,683	393	105	156	.508	.57
July	9,782	2,680	55	316	1.03	1.18
August	4,010	189	86	129	.420	.49
September	5,401	690	74	180	.586	.65
Water year 1940-41	141,487	2,680	55	388	1.26	17.14

Otter Creek at Middlebury, Vt.

Location.- Water-stage recorder, lat. 44°00'45", long. 73°10'05", 150 feet upstream from highway bridge at Middlebury, Addison County, and 3½ miles downstream from Middlebury River.
Drainage area.- 628 square miles.
Records available.- April 1903 to May 1907, October 1910 to January 1920, October 1928 to September 1941.
Average discharge.- 25 years (1903-6, 1910-19, 1928-41), 974 second-feet.
Extremes.- Maximum discharge during year, 2,840 second-feet Dec. 31 (gage height, 4.55 feet); minimum, 141 second-feet July 7.
1903-7, 1910-20, 1928-41: Maximum discharge, 11,000 second-feet Mar. 20, 21, 1936 (gage height, 10.3 feet); minimum, 93 second-feet Mar. 5, 1929.
Maximum discharge known, 13,600 second-feet Nov. 4, 1927 (gage height, 13.3 feet, present datum at chain-gage site, 1,800 feet upstream), from rating curve extended above 9,000 second-feet by logarithmic plotting.
Remarks.- Records good except those for periods of ice effect or backwater from aquatic vegetation, which are fair. Some regulation by Chittenden and East Pittsford Reservoirs on East Creek (see p. 152).

Rating tables, water year 1940-41, except periods of ice effect and of backwater from aquatic vegetation (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 8				Feb. 9 to Sept. 30			
1.3	197	2.8	1,060	1.1	152	2.5	930
1.5	259	3.2	1,400	1.3	197	3.0	1,370
1.7	346	3.6	1,790	1.5	258	3.5	1,870
2.0	510	4.0	2,230	1.7	346	4.2	2,630
2.4	760	4.6	2,900	2.0	550		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	366	318	612	2,840	440	425	938	585	297	365	359	255
2	361	418	605	2,780	400	390	922	662	242	278	274	501
3	332	1,040	*610	2,780	360	352	954	683	245	242	232	452
4	328	1,310	545	2,670	400	425	1,170	606	238	222	203	293
5	309	1,060	496	2,450	410	560	1,420	550	232	183	222	242
6	259	865	560	*2,120	410	592	1,470	536	219	175	208	232
7	242	851	570	1,640	430	571	1,620	508	219	152	200	211
8	361	795	594	1,310	1,300	515	1,720	508	192	989	203	178
9	493	697	660	1,140	2,000	445	1,770	746	165	2,020	187	214
10	441	588	678	950	1,970	365	1,870	834	197	1,720	171	211
11	408	528	660	890	1,920	420	1,970	802	192	1,190	162	417
12	387	807	624	730	1,770	430	2,080	648	185	826	178	738
13	332	1,400	666	620	1,520	425	2,140	536	185	706	183	529
14	305	1,490	851	680	1,280	445	2,300	466	187	738	187	331
15	337	1,690	753	730	1,470	455	2,460	424	302	585	180	245
16	424	1,900	648	740	1,420	473	2,520	397	359	352	235	242
17	419	1,960	788	710	1,120	641	2,580	397	529	302	270	222
18	392	1,900	980	670	954	850	2,630	417	694	312	228	208
19	377	1,740	916	640	858	*730	2,580	359	655	293	228	197
20	314	1,440	865	650	730	580	2,520	365	390	634	222	187
21	259	1,180	816	660	670	550	2,410	317	285	730	208	178
22	305	1,040	788	620	580	515	2,080	274	245	501	200	162
23	309	956	755	610	510	445	1,720	266	200	404	195	190
24	314	851	710	580	460	494	1,320	281	219	352	171	195
25	314	781	654	520	510	669	1,050	251	225	281	154	197
26	314	746	594	490	530	882	906	225	225	278	205	197
27	275	678	660	460	500	1,190	786	270	205	225	200	200
28	222	648	1,090	500	480	1,320	722	278	195	197	187	178
29	280	487	1,840	490	-	1,280	683	297	268	466	187	152
30	314	546	2,450	480	-	1,140	592	397	501	722	185	183
31	318	-	2,780	470	-	954	-	391	-	515	171	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,411	493	222	336	0.535	0.62
November	30,710	1,960	318	1,024	1.63	1.82
December	26,820	2,780	498	865	1.38	1.59
Calendar year 1940	394,942	5,600	150	1,079	1.72	23.39
January	33,620	2,840	460	1,085	1.73	1.99
February	25,402	2,000	360	907	1.44	1.50
March	19,528	1,320	352	630	1.00	1.16
April	49,903	2,630	592	1,663	2.65	2.96
May	14,276	834	225	461	.734	.85
June	8,492	694	165	283	.451	.50
July	16,955	2,020	152	547	.871	1.00
August	6,395	359	154	206	.328	.38
September	7,937	738	152	265	.422	.47
Water year 1940-41	250,449	2,840	152	686	1.09	14.84

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 2-4, 6, 23, 24, Jan. 7 to Feb. 9, Feb. 20 to Mar. 2, Mar. 4, 5, 11-15, 18-21. Backwater from aquatic vegetation July 16 to Sept. 30; discharge computed on basis of three discharge measurements, gage heights, weather records, and records for station at Center Rutland.

East Creek at Rutland, Vt.

Location.- Water-stage recorder, lat. 43°37'40", long. 72°59'20", at Rutland, Rutland County, on grounds of Rutland Country Club, 280 feet downstream from Grove Street covered bridge and 2 miles upstream from mouth.
Drainage area.- 51.1 square miles.
Records available.- August 1940 to September 1941.
Extremes.- 1940: Maximum discharge during period August to September, 1,480 second-feet Sept. 2 (gage height, 3.96 feet), from rating curve extended above 600 second-feet by logarithmic plotting; minimum daily, 16 second-feet (regulated) Aug. 18, Sept. 8, 15.
1940-41: Maximum discharge during water year, 1,280 second-feet July 8 (gage height, 3.75 feet), from rating curve extended above 600 second-feet by logarithmic plotting; minimum daily, 15 second-feet (regulated) Oct. 6, 20, 26, 27, Aug. 17.
Remarks.- Records excellent. Diversion above station from Mendon Brook for municipal supply of Rutland. Flow regulated by Chittenden and East Pittsford Reservoirs (see p.152), which have a combined usable capacity of 969,800,000 cubic feet.

Discharge, in second-feet, 1940-41

1940

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	104	11	-	128	21	67	59
2	-	472	12	-	128	22	70	25
3	-	140	13	-	125	23	80	73
4	-	122	14	-	82	24	41	100
5	-	122	15	-	16	25	22	128
6	-	120	16	-	105	26	83	71
7	-	108	17	-	124	27	94	69
8	-	16	18	16	98	28	88	24
9	-	105	19	88	78	29	79	33
10	-	148	20	92	79	30	84	86
						31	80	-

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	63	32	117	80	76	81	73	16	16	31	67
2	66	96	102	124	18	24	74	64	36	25	16	27
3	80	87	93	107	106	105	106	41	36	27	16	32
4	67	114	90	127	103	105	102	31	40	16	33	42
5	57	100	111	36	100	104	80	57	46	17	28	49
6	15	101	108	118	97	98	88	66	40	17	43	23
7	64	106	91	140	113	106	133	57	26	98	53	20
8	104	92	38	137	438	32	144	80	18	447	46	45
9	84	51	117	121	105	91	148	82	47	44	25	61
10	86	16	109	106	108	81	156	61	61	41	16	82
11	138	83	99	85	112	101	155	39	46	26	55	102
12	132	181	106	42	111	108	151	28	36	17	69	16
13	17	155	126	101	116	118	142	57	62	105	46	16
14	98	115	66	138	111	121	250	33	45	31	69	16
15	92	215	135	130	144	122	258	41	17	30	68	21
16	86	134	111	131	38	49	221	55	36	17	47	49
17	77	102	154	121	101	113	148	28	38	31	15	41
18	88	119	101	50	121	103	158	25	27	27	46	34
19	45	99	119	58	116	119	105	46	18	116	69	52
20	15	110	106	128	102	123	91	46	23	38	43	37
21	84	123	96	129	114	120	112	29	18	16	59	17
22	82	131	34	113	63	105	71	49	18	29	47	50
23	80	105	106	111	19	23	57	64	18	24	24	83
24	83	65	107	85	112	110	57	24	36	16	17	70
25	76	95	26	70	104	133	66	16	17	30	41	58
26	15	112	107	19	112	120	46	50	36	24	52	50
27	15	121	113	114	96	84	19	47	32	16	59	30
28	96	58	190	119	97	94	80	68	30	36	57	16
29	88	99	311	110	-	60	35	46	47	62	49	46
30	83	104	260	114	-	25	55	17	20	27	22	85
31	83	-	194	125	-	74	-	23	-	22	18	-

Monthly discharge, in second-feet, 1940-41

Month	Observed				Change in contents and diversion (mean second-feet)†	Adjusted		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
August 18-31, 1940	984	94	16	70.3	-	-	-	-
September	3,088	472	16	103	-19.8	83.1	1.63	1.82
October 1940	2,268	138	15	73.2	-37.8	35.4	.693	.80
November	3,152	215	16	105	+34.0	139	2.72	3.04
December	3,558	311	26	115	+7.68	122	2.39	2.76
January 1941	3,224	140	19	104	-24.7	79.3	1.55	1.79
February	3,057	438	18	109	-31.8	77.4	1.51	1.58
March	2,847	133	23	91.8	-45.4	46.5	.910	1.05
April	3,389	258	19	113	+100	213	4.17	4.65
May	1,443	82	16	46.5	+11.6	58.2	1.14	1.31
June	986	62	16	32.9	-4.00	28.9	.566	.63
July	1,478	447	16	47.7	+29.5	77.1	1.51	1.74
August	1,279	69	15	41.3	-16.5	24.7	.483	.56
September	1,337	102	16	44.6	-11.7	32.9	.644	.72
Water year 1940-41	28,018	447	15	76.8	+.860	77.6	1.52	20.63

† Change in contents in Chittenden and East Pittsford Reservoirs and diversion from Mendon Brook for municipal supply of Rutland.

Winooski River at Montpelier, Vt.

Location.- Water-stage recorder, lat. 44°15'25", long. 72°35'35", three-eighths of a mile upstream from Dog River and 1 mile downstream from depot in Montpelier, Washington County. Datum of gage is 499.99 feet above mean sea level, datum of 1929.
Drainage area.- 397 square miles.
Records available.- May 1909 to September 1923, August 1928 to September 1941.
Average discharge.- 22 years (1914-23, 1928-41), 582 second-feet (adjusted for change in reservoir contents since October 1938).
Extremes.- Maximum discharge during year, 2,800 second-feet Apr. 16; maximum gage height, 9.14 feet Dec. 29, ice jam; minimum daily discharge, 43 second-feet (regulated) Sept. 28.
1909-23, 1928-41: Maximum discharge, 20,200 second-feet Apr. 7, 1912 (gage height, about 16.7 feet, present datum), from rating curve extended above 10,000 second-feet on basis of slope-area determination at gage height 27.1 feet; minimum, 6 second-feet (regulated) Sept. 30, 1921 (gage height, 2.58 feet); minimum daily, 17 second-feet (regulated) Sept. 3, 1933.
Maximum discharge known, 57,000 second-feet Nov. 3, 1927 (gage height, 27.1 feet), by slope-area method.
Remarks.- Records good except those for periods of no gage-height record, which are fair. Flow regulated by several small power plants above station, by Peacham Pond and Mollys Falls Reservoir (see p. 152), which regulate run-off from 24 square miles, and by detention in East Barre and Wrightsville Detention Reservoirs (see p. 169).

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15

3.2	96	3.8	280	5.0	1,030
3.4	141	4.0	379	6.0	1,900
3.6	201	4.5	675	7.0	2,900

Apr. 16 to Sept. 30

2.8	36	3.2	102	3.8	292
2.9	48	3.4	153	4.0	384
3.0	63	3.6	216	4.5	675

Note.- Same as preceding table above 4.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	212	215	337	1,500	280	200	390	404	227	254	271	132
2	165	370	315	960	180	145	490	378	219	188	199	159
3	210	1,540	340	930	190	160	750	340	220	148	129	139
4	228	938	280	800	290	240	*1,000	332	222	104	170	135
5	162	594	320	680	270	225	1,400	324	187	84	161	141
6	96	562	350	520	290	225	1,640	313	179	67	188	154
7	130	611	340	370	300	210	1,880	290	127	122	189	126
8	267	506	363	400	620	180	1,910	330	110	587	153	152
9	376	410	350	460	660	*145	2,060	465	148	507	119	111
10	262	337	335	460	520	160	2,100	310	122	318	64	132
11	198	323	320	390	480	200	2,200	284	106	223	151	358
12	177	631	*340	370	430	210	2,200	264	100	576	178	272
13	127	1,020	310	*350	370	210	2,150	246	99	519	147	200
14	154	686	290	360	350	210	2,600	253	94	340	139	134
15	194	1,480	250	330	370	210	2,700	222	147	234	150	163
16	314	1,360	270	320	330	170	2,600	201	200	165	414	140
17	238	950	325	330	290	190	*2,250	248	310	154	750	144
18	204	702	325	360	320	230	2,050	437	497	200	307	134
19	184	558	325	350	300	205	1,860	321	398	193	268	133
20	139	530	340	330	275	210	1,680	274	238	220	238	119
21	152	528	330	330	265	230	1,580	235	181	169	229	70
22	201	492	300	310	250	205	1,360	216	119	172	180	89
23	252	471	280	310	175	160	1,190	198	152	141	140	94
24	254	435	280	320	175	155	1,030	147	156	150	87	111
25	209	478	250	300	260	240	990	286	137	144	147	104
26	140	402	210	230	240	250	810	274	134	140	400	80
27	127	406	330	260	225	310	651	286	108	83	287	96
28	152	330	500	320	235	350	567	318	58	722	224	43
29	210	285	1,400	280	-	380	468	656	486	1,090	196	67
30	220	358	2,100	280	-	350	411	457	458	554	128	68
31	251	-	1,800	280	-	340	-	287	-	292	95	-

Month	Observed				Change in contents (equivalent mean second-feet)†	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	6,205	376	96	200	-27.1	173	0.436	0.50
November	18,488	1,540	215	616	+37.8	654	1.65	1.84
December	14,205	2,100	210	458	+37.1	495	1.25	1.44
Calendar year 1940	206,773	5,300	48	565	+9.69	575	1.45	19.70
January	13,780	1,500	230	445	-63.6	381	.960	1.11
February	8,940	660	175	319	-37.5	282	.710	.74
March	6,905	380	145	223	-25.3	197	.496	.57
April	44,967	2,700	390	1,499	+58.9	1,558	3.92	4.38
May	9,566	656	147	309	+19.9	328	.826	.95
June	5,941	497	58	198	+7.79	206	.519	.58
July	8,900	1,090	67	287	+15.5	303	.763	.88
August	6,498	750	64	210	-32.8	177	.446	.51
September	4,000	358	43	133	-16.9	116	.292	.33
Water year 1940-41	148,395	2,700	43	407	-2.16	404	1.02	13.83

* Winter discharge measurement made on this day.
† Change in contents in Peacham Pond, Mollys Falls Reservoir and East Barre and Wrightsville Detention Reservoirs.
Note.- No gage-height record Dec. 17 to Jan. 12, Jan. 30 to Feb. 1, Feb. 5-7; discharge computed on basis of one discharge measurement, weather records, power-plant records, and records for Dog River at Northfield Falls. Stage-discharge relation affected by ice Nov. 28, 29, Dec. 2-7, Dec. 9 to Apr. 4.

Winooski River near Essex Junction, Vt.

Location.- Water-stage recorder, lat. 44°28'40", long. 73°08'20", half a mile downstream from Muddy Brook and 2 miles southwest of Essex Junction, Chittenden County.
Drainage area.- 1,044 square miles.
Records available.- October 1928 to September 1941.
Average discharge.- 13 years, 1,601 second-feet (adjusted for change in reservoir contents since October 1936).
Extremes.- Maximum discharge during year, 11,900 second-feet Apr. 14; maximum gage height, 11.82 feet Dec. 30 (ice jam); minimum daily discharge, 73 second-feet (regulated) July 4.

1928-41: Maximum discharge, 45,300 second-feet Mar. 19, 1936 (gage height, 23.54 feet), from rating curve extended above 25,000 second-feet on basis of slope-area determination and computations of flow over dam at gage heights 18.72 feet, 23.54 feet and 50.4 feet; minimum daily, 70 second-feet (regulated) Sept. 25, 1937.

Maximum discharge known, 113,000 second-feet Nov. 4, 1927 (gage height, 50.4 feet, from floodmarks), by slope-area determination and computation of flow over dam.

Remarks.- Records excellent except those for periods of ice effect, which are fair. Flow regulated by power plants above station and by Peacham Pond and Mollys Falls Reservoir (see p. 152) and Waterbury Reservoir (see p. 173), which regulate run-off from 24 square miles and 109 square miles, respectively; and by detention in East Barre and Wrightsville Detention Reservoirs (see p. 169).

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.1	67	0.5	145	0.9	270	1.6	680	3.5	3,130
.2	81	.6	175	1.0	305	2.0	1,040	4.0	4,110
.3	97	.7	205	1.1	345	2.5	1,610	5.5	7,180
.4	118	.8	237	1.2	400	3.0	2,300	7.0	10,200

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	633	715	506	4,000	900	520	1,250	1,420	500	580	490	88
2	522	586	660	3,040	1,000	400	1,500	1,320	914	458	190	649
3	552	2,300	780	2,700	1,030	700	1,780	899	721	348	269	790
4	649	2,180	1,050	2,530	980	650	2,430	746	618	73	549	674
5	246	1,640	910	2,220	980	640	4,190	951	658	93	641	570
6	272	1,450	950	1,800	1,030	630	4,220	918	536	88	484	382
7	597	1,580	830	980	1,000	640	5,580	916	160	320	543	110
8	1,070	1,640	600	1,050	1,850	570	4,320	932	80	652	615	472
9	544	1,370	950	1,150	3,500	420	4,970	898	598	816	220	564
10	626	841	840	1,350	2,150	600	5,380	1,100	542	790	98	601
11	730	578	800	1,200	1,600	620	5,980	570	440	508	455	690
12	224	2,140	830	920	1,200	520	5,980	906	323	476	566	692
13	260	2,980	860	1,100	1,350	610	5,980	725	382	816	540	376
14	751	2,020	900	1,050	1,200	580	9,580	658	138	758	593	182
15	688	2,270	1,040	1,000	1,080	560	10,200	652	263	648	558	414
16	694	3,740	1,040	1,200	1,200	450	8,980	660	562	512	332	490
17	714	2,510	860	1,050	1,350	600	5,980	510	702	488	590	564
18	670	1,920	950	920	1,250	750	5,380	724	551	414	833	565
19	400	1,570	840	940	1,380	760	4,320	1,110	914	278	541	587
20	142	1,220	800	920	1,250	680	4,000	1,080	710	128	508	203
21	534	1,140	*670	980	1,050	650	4,110	861	360	484	640	245
22	619	1,260	534	1,100	820	650	3,040	663	166	496	634	576
23	586	1,040	850	940	880	450	2,380	591	482	435	256	568
24	705	850	950	1,100	940	760	2,150	392	423	430	148	541
25	635	1,100	870	1,120	1,000	800	2,010	370	455	518	569	460
26	516	1,040	940	1,000	880	780	1,800	987	340	189	604	438
27	110	1,110	860	1,050	800	900	1,510	946	330	119	619	218
28	630	550	1,100	1,060	660	1,150	1,350	736	328	874	631	108
29	597	1,000	3,000	1,070	-	1,200	1,130	1,660	276	2,990	626	408
30	574	761	6,800	1,020	-	1,160	1,290	1,590	718	1,710	248	352
31	624	-	5,200	1,050	-	1,120	-	1,010	-	700	128	-

Month	Observed				Change in contents (equivalent mean second-feet)†	Adjusted for change in reservoir contents		
	Second-feet-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	17,114	1,070	110	552	-75.6	476	0.456	0.53
November	45,101	3,740	550	1,503	+292	1,795	1.72	1.92
December	38,770	6,800	506	1,251	+186	1,436	1.38	1.59
Calendar year 1940	590,172	18,200	110	1,612	+38.7	1,651	1.58	21.55
January	42,610	4,000	920	1,375	-285	1,090	1.04	1.20
February	34,310	3,500	660	1,225	-278	947	.907	.94
March	21,530	1,200	400	695	-141	554	.531	.61
April	122,770	10,200	1,130	4,092	+638	4,730	4.53	5.05
May	27,551	1,660	370	889	+21.5	910	.872	1.01
June	14,190	914	80	473	-28.5	444	.425	.48
July	18,179	2,990	73	586	+24.0	610	.584	.67
August	14,718	833	98	475	-146	329	.315	.36
September	13,587	790	88	453	-226	227	.217	.24
Water year 1940-41	410,430	10,200	73	1,124	-1.19	1,123	1.08	14.60

* Winter discharge measurement made on this day.
† Change in contents in Peacham Pond and Mollys Falls Reservoir, East Barre and Wrightsville Detention Reservoirs and Waterbury Reservoir. Stage-discharge relation affected by ice Dec. 2-21, Dec. 23 to Jan. 1, Jan. 6 to Apr. 2.

East Barre detention reservoir at East Barre, Vt.

Location.- Staff gage, lat. 44°10', long. 72°27', on reservoir on Jail Branch at East Barre, Washington County, 3⅛ miles upstream from mouth of Jail Branch. Datum of gage is 1,127.9 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 32.2 square miles.

Records available.- March and April 1936, September 1938 to September 1941.

Extremes.- Maximum gage height observed during year, 14.35 feet Apr. 16; minimum 0.3 foot July 26, 27, Sept. 29, 30.
1936, 1938-41: Maximum gage height, 36.0 feet Mar. 22, 1936; minimum, 0.1 foot several days in August and September 1939.

Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, in 1935 for flood control. Usable capacity of reservoir is 506,000,000 cubic feet between gage heights 0.0 foot (bottom of outlet opening) and 37.1 feet (crest of spillway). Dam has no gates; outflow from reservoir is dependent on capacity of fixed outlet opening, 4 feet square, near base of dam.

Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.75	1.1	1.6	3.9	1.1	0.7	1.55	2.5	1.3	1.6	-	1.5
2	.7	.85	1.55	2.8	1.1	.7	1.7	2.25	1.1	1.1	1.1	-
3	.6	10.5	1.45	2.6	1.0	.7	2.0	2.1	2.0	1.0	.85	.7
4	.6	4.9	1.4	2.4	1.0	.8	3.2	2.0	1.2	.7	.65	.6
5	.6	2.3	1.5	2.2	1.0	.75	5.1	1.9	1.0	.6	.6	.6
6	.55	2.2	1.5	2.1	.9	.7	6.7	1.75	.9	.5	.5	1.0
7	.6	2.3	1.6	1.8	.9	.65	8.8	1.6	.9	.5	.5	.85
8	.9	2.0	2.0	1.75	8.3	.65	7.75	1.55	.9	4.2	.5	.65
9	2.15	1.65	1.8	1.7	6.3	.65	8.85	-	.8	2.1	.5	.6
10	1.35	1.6	1.5	1.8	2.9	.65	9.75	2.1	.8	1.5	.85	.85
11	1.1	1.6	1.5	1.75	2.45	.65	10.45	1.85	.7	-	.7	2.5
12	-	2.8	1.5	1.65	2.0	.65	11.35	1.6	.5	-	.55	1.5
13	.75	6.8	1.6	1.6	1.7	.75	11.2	1.5	.5	1.6	.5	1.2
14	1.0	3.05	1.5	1.6	1.6	.8	12.9	1.4	.6	1.1	.6	.9
15	.9	9.2	1.5	1.4	1.9	.8	13.4	1.3	-	.8	.45	.8
16	3.05	10.0	1.2	1.3	1.6	.85	14.35	1.2	1.15	.5	3.0	.7
17	1.6	5.4	1.4	1.3	1.5	.9	13.7	1.05	2.75	.45	7.25	.6
18	1.3	2.8	1.35	1.45	1.45	.8	13.4	2.5	2.75	1.3	2.3	.6
19	1.1	2.25	1.3	1.6	1.45	.75	11.9	-	2.55	1.0	1.4	.6
20	1.1	2.4	1.3	1.8	1.4	.8	8.7	-	1.3	1.35	1.35	.55
21	1.1	2.3	1.45	1.6	1.1	.85	5.1	1.1	.95	.95	1.1	.55
22	.75	2.25	1.4	1.4	1.1	.9	3.8	1.0	.75	-	.9	.5
23	1.0	2.1	1.4	1.4	1.0	.9	3.3	.9	.6	.5	1.25	.5
24	1.1	-	1.4	1.4	1.0	1.0	3.0	3.5	.55	.45	.95	.5
25	1.0	2.3	1.35	1.4	1.0	.95	3.4	2.4	1.15	.4	.75	.45
26	.75	1.4	-	1.4	1.0	1.0	3.0	1.9	-	.3	3.2	.45
27	.8	1.7	1.3	1.4	.9	1.0	2.5	-	.6	.3	1.2	.45
28	.95	1.5	2.2	1.4	.8	1.2	-	-	4.5	1.3	.85	.35
29	.5	1.4	7.85	1.3	-	1.65	-	3.7	-	11.8	.7	.3
30	.85	1.6	11.35	1.2	-	2.0	-	2.1	8.45	6.5	.65	.3
31	1.0	-	11.25	1.1	-	1.65	-	-	-	-	.6	-

Monthly gage height and contents, water year October 1940 to September 1941

Date	Gage height (feet)†	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)	Change in contents during month (equivalent mean second-feet)
Sept.30	0.7	0.35	-	-
Oct. 31	1.2	.62	+0.27	+0.10
Nov. 30	1.6	.87	+.25	+.10
Dec. 31	10.5	15.75	+14.88	+5.56
Calendar year 1940	-	-	+15.25	+.48
Jan. 31	1.1	.56	-15.19	-5.67
Feb. 28	.8	.40	-.16	-.07
Mar. 31	1.6	.87	+.47	+.18
Apr. 30	2.2	1.26	+.39	+.15
May 31	1.4	.74	-.52	-.19
June 30	2.1	1.18	+.44	+.17
July 31	1.2	.62	-.56	-.21
Aug. 31	.9	.45	-.17	-.06
Sept.30	.3	.15	-.30	-.12
Water year 1940-41	-	-	-.20	-.01

† Gage height at midnight, determined from graph based on observer's readings and on gage-height graph for Jail Branch at East Barre.

Jail Branch at East Barre, Vt.

Location.- Water-etage recorder, lat. 44°10', long. 72°27', in East Barre, Washington County, just downstream from highway bridge, three-quarters of a mile downstream from East Barre Detention Reservoir, and 2¾ miles upstream from Stevens Branch. Datum of gage is 1,071.59 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 33.0 square miles.
Records available.- August 1920 to September 1923, November 1933 to September 1941.
Extremes.- Maximum discharge during year, 295 second-feet Apr. 16, from graph based on gage readings; maximum gage height, 2.26 feet Feb. 9, 10, ice jams; minimum discharge, 2.2 second-feet July 27, Sept. 28.
1920-23, 1933-41: Maximum discharge observed, 1,350 second-feet Apr. 10, 1922 (gage height, 8.38 feet, site and datum then in use), from rating curve extended above 900 second-feet; minimum observed, 0.5 second-foot Sept. 11, 1921.
Remarks.- Records good except those below 20 second-feet and those for periods of ice effect or no gage-height record, which are fair. Run-off affected since November 1935 by East Barre Detention Reservoir (see p. 167). Diversion from reservoir on Orange Brook, a tributary upstream, for municipal use of city of Barre.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 15				Nov. 16 to Sept. 30					
0.2	4.9	0.7	26	0.1	2.5	0.6	19	1.1	92
.3	7.6	.8	36	.2	5.2	.7	27	1.2	120
.4	11	.9	50	.3	8.2	.8	37	1.3	154
.5	14	1.0	69	.4	11	.9	52	1.4	194
.6	19	1.1	92	.5	15	1.0	70	1.6	295

Note.- Same as following table above 1.1 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	16	27	135	16	11	24	44	19	25	17	18
2	9.4	72	26	61	16	11	27	40	22	15	13	11
3	8.2	232	24	50	15	11	*h44	40	32	10	11	7.9
4	7.4	111	23	47	15	12	60	34	17	8.2	8.8	6.7
5	7.1	42	25	40	15	11	105	34	15	7.0	7.0	6.1
6	7.1	42	25	36	14	10	135	30	14	4.9	6.7	15
7	7.1	42	29	33	14	*10	175	28	14	6.8	6.1	11
8	32	36	35	30	60	10	165	46	11	102	5.5	7.3
9	36	29	30	28	70	10	180	50	8.5	52	5.2	9.2
10	20	25	25	29	65	10	190	36	7.3	23	11	13
11	14	30	25	29	40	10	210	30	6.7	13	8.2	37
12	8.8	110	25	27	36	11	230	26	6.7	20	7.0	22
13	9.0	124	26	26	30	11	230	24	6.4	21	7.0	15
14	14	60	*27	*26	27	12	260	24	10	14	5.8	12
15	24	206	22	24	30	12	270	19	18	8.8	7.0	10
16	45	213	19	22	25	13	*h290	18	26	5.8	50	11
17	25	82	*25	22	23	14	273	31	54	9.7	144	9.1
18	19	56	22	25	22	13	268	44	93	17	37	7.6
19	15	42	21	28	22	13	246	26	42	21	22	6.4
20	14	44	22	27	21	13	208	19	18	24	18	7.6
21	16	44	27	25	17	12	127	16	12	11	14	5.5
22	14	45	27	23	16	12	81	14	8.8	7.9	11	5.2
23	14	42	26	22	15	14	66	13	7.3	6.4	16	4.1
24	16	40	22	21	15	15	70	32	7.0	4.9	12	3.3
25	13	42	18	20	15	15	72	43	12	3.8	10	4.1
26	9.4	30	17	21	14	15	59	30	7.6	3.3	41	2.5
27	9.7	32	22	20	13	15	56	33	5.8	3.0	16	3.0
28	13	26	52	20	12	16	47	33	24	107	11	2.5
29	11	24	160	19	-	24	41	82	199	236	8.5	2.5
30	12	27	225	17	-	29	37	33	92	117	8.5	3.3
31	15	-	241	16	-	25	-	24	-	24	9.1	-

Month	Observed				Change in contents (mean second-feet)†	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	474.6	45	7.1	15.3	+0.10	15.4	0.467	0.54
November	1,966	232	16	65.5	+.10	65.6	1.99	2.22
December	1,340	241	17	43.2	+5.56	48.8	1.48	1.70
Calendar year 1940	22,552.3	396	2.1	61.6	+.48	62.1	1.88	25.61
January	969	135	16	31.3	-5.67	25.6	.776	.89
February	683	70	12	24.4	-.07	24.3	.736	.77
March	422	29	10	13.6	+.18	13.8	.418	.48
April	4,246	290	24	142	+.15	142	4.30	4.79
May	996	82	13	32.1	-.19	31.9	.967	1.12
June	816.1	199	5.8	27.2	+.17	27.4	.830	.93
July	932.5	236	3.0	30.1	-.21	29.9	.906	1.04
August	554.4	144	5.2	17.9	-.06	17.8	.539	.62
September	276.9	37	2.5	9.30	-.12	9.18	.278	.31
Water year 1940-41	13,678.5	290	2.5	37.5	-.01	37.5	1.14	15.41

* Winter discharge measurement made on this day.
† Change in contents in East Barre Detention Reservoir.
h Computed from staff-gage readings.
Note.- No gage-height record Oct. 1, Nov. 29 to Dec. 12, Jan. 8-14, Jan. 24 to Feb. 7, Feb. 18 to Apr. 2, Apr. 4-15; discharge computed on basis of two discharge measurements, limits of stage shown by the recorder chart when available, weather records, records for East Barre Detention Reservoir, and records for stations on nearby streams. Stage-discharge relation affected by ice Nov. 25 to Dec. 16, Dec. 18, 19, 23-25, 28-30, Jan. 1-3, 5-21, 23, Feb. 8-12, 16, 17. Some backwater from ice during periods of no gage-height record in January, February, March, and April.

Wrightsville detention reservoir at Wrightsville, Vt.

Location.- Staff gage, lat. 44°18'35", long. 72°34'30", on reservoir on North Branch of Winooski River at Wrightsville, Washington County, a third of a mile downstream from Long Meadow Brook and 4¼ miles upstream from mouth of North Branch. Datum of gage is 612.75 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 66.5 square miles.

Records available.- March and April 1936, September 1938 to September 1941.

Extremes.- Maximum gage height observed during year, 38.4 feet Apr. 17; minimum observed, 0.4 foot Sept. 5, 27, 30.

1936, 1938-41: Maximum gage height, 63.7 feet Mar. 22, 1936, from graph based on gage readings; minimum observed, 0.4 foot several days in September 1939 and September 1941.

Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, in 1935 for flood control. Usable capacity of reservoir is 873,500,000 cubic feet between gage heights 0.0 foot (bottom of outlet opening) and 72.25 feet (crest of spillway). Dam has no gates; outflow from reservoir is dependent on capacity of fixed outlet opening, 5¼ feet square, near base of dam.

Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height at 7:30 a.m., in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	0.5	-	19.6	1.2	1.0	2.6	2.5	3.0	2.5	3.1	1.0
2	1.6	1.0	-	18.0	1.0	1.4	2.8	2.0	2.8	2.0	2.8	.8
3	1.4	9.8	-	14.1	1.0	1.4	3.0	2.0	2.9	1.8	2.4	.7
4	1.4	8.8	-	11.0	.9	1.6	-	2.0	2.0	1.5	2.0	.6
5	1.0	5.9	-	-	.8	1.6	-	2.1	2.0	1.3	1.8	.4
6	1.0	5.2	-	-	1.0	1.8	7.6	2.5	1.8	2.4	1.0	.8
7	1.4	5.7	-	-	1.0	1.6	12.4	2.4	1.6	2.4	.8	.8
8	1.4	4.9	-	-	1.8	1.5	13.2	2.2	1.6	2.5	.6	1.0
9	-	4.0	-	4.0	3.0	1.4	14.6	2.8	1.5	2.6	.5	.9
10	-	-	-	-	2.6	1.2	17.0	3.0	1.5	2.5	.6	.8
11	-	-	-	-	2.4	1.2	21.0	2.8	1.6	2.5	.5	2.0
12	-	7.0	-	-	2.3	1.0	24.0	2.5	1.6	2.7	1.0	2.2
13	1.6	-	-	-	2.2	1.2	24.0	2.4	1.5	-	.6	2.0
14	1.8	-	-	-	-	1.2	28.0	2.2	-	-	.5	1.8
15	-	8.0	-	-	-	1.2	34.0	2.0	-	2.0	.8	1.2
16	-	9.8	-	-	2.8	1.6	38.0	2.0	-	2.2	1.8	1.0
17	1.8	10.0	-	-	2.8	1.2	38.4	2.0	2.0	2.3	1.9	.8
18	1.8	-	-	1.4	2.2	1.0	38.0	3.0	1.6	2.4	1.8	.8
19	1.6	-	-	1.6	2.0	1.0	36.3	▶	-	2.3	1.6	.9
20	1.7	-	2.3	1.4	1.6	.9	31.4	-	-	2.0	1.8	1.0
21	1.5	-	2.5	1.2	1.4	.8	27.2	-	-	1.6	1.7	1.0
22	1.4	-	2.4	1.2	1.2	1.0	22.0	-	1.4	1.4	1.0	1.0
23	1.2	3.5	2.5	1.0	1.0	1.6	18.6	-	1.3	1.3	.8	.9
24	1.0	-	2.5	1.0	1.0	1.6	14.0	-	1.4	1.2	.5	.8
25	.9	-	2.5	1.0	1.0	1.4	-	-	1.2	1.2	1.6	.7
26	.8	-	2.0	1.4	.9	1.4	-	-	1.2	1.1	-	.5
27	1.0	3.0	2.7	1.0	.9	1.8	-	-	1.0	.8	-	.4
28	.9	3.1	2.8	1.0	1.0	2.0	-	-	2.5	1.0	-	.5
29	.8	3.0	11.4	1.6	-	2.4	3.4	3.8	3.0	4.8	1.8	.5
30	.6	2.9	20.6	1.4	-	1.8	2.6	3.9	3.0	4.6	1.8	.4
31	.5	-	21.4	1.2	-	1.9	-	-	-	4.0	1.2	-

Monthly gage height and contents, water year October 1940 to September 1941

Date	Gage height (feet)†	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)	Change in contents during month (equivalent mean second-feet)
Sept.30	1.9	4.55	-	-
Oct. 31	.5	1.1	-3.45	-1.29
Nov. 30	2.9	7.25	+6.15	+2.37
Dec. 31	20.2	93.4	+86.15	+32.2
Calendar year 1940	-	-	+88.05	+2.78
Jan. 31	1.2	2.75	-90.65	-33.8
Feb. 28	1.0	2.25	-.5	-.21
Mar. 31	2.4	5.9	+3.65	+1.36
Apr. 30	2.6	6.45	+.55	+.21
May 31	3.1	7.85	+1.4	+.52
June 30	2.8	7.0	-.85	-.33
July 31	3.2	8.15	+1.15	+.43
Aug. 31	1.0	2.25	-5.9	-2.20
Sept.30	.6	1.35	-.9	-.35
Water year 1940-41	-	-	-3.2	-.10

† Gage height at midnight determined from graph based on observer's readings and on graph for station on North Branch of Winooski River at Wrightsville.

North Branch of Winooski River at Wrightsville, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°18'00", long. 72°34'45", in Wrightsville, Washington County, three-quarters of a mile downstream from Wrightsville Detention Reservoir and 3½ miles upstream from mouth. Datum of gage is 550.53 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 69.2 square miles.
Records available.- October 1933 to September 1941.
Extremes.- Maximum discharge during year, 775 second-feet Apr. 17 (gage height, 3.64 feet); minimum daily, 0.2 second-foot Aug. 13.
1933-41: Maximum discharge, 2,170 second-feet Apr. 12, 1934 (gage height, 6.53 feet), from rating curve extended above 920 second-feet; minimum daily, that of Aug. 13, 1941.
Remarks.- Records good except those for periods of ice effect and of no gage-height record, which are fair. Run-off affected since November 1935 by storage in Wrightsville Detention Reservoir (see p. 169). Diurnal fluctuation at low stages caused by small mill above station.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0	0.2	0.5	17	1.0	61	2.4	332
.1	2.7	.6	22	1.2	89	2.8	446
.2	5.9	.7	28	1.4	120	3.2	580
.3	9.5	.8	37	1.6	153	3.6	750
.4	13	.9	48	2.0	234		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	22	68	580	31	24	65	69	48	37	32	12
2	19	55	65	528	30	25	80	65	38	14	22	11
3	17	314	61	462	30	23	*101	57	31	3.0	18	9.9
4	16	311	60	387	29	23	148	48	24	2.1	17	8.4
5	15	221	62	276	29	23	227	48	22	1.9	14	8.4
6	15	160	64	157	28	23	306	46	21	3.6	11	12
7	15	189	67	100	28	22	402	41	20	26	4.5	15
8	23	150	56	76	70	*22	431	37	17	51	3.1	16
9	48	115	58	65	*85	21	477	48	13	56	9.5	14
10	44	90	53	58	68	22	528	49	10	38	8.7	23
11	34	78	49	54	60	21	580	40	9.5	34	5.8	60
12	29	154	46	*56	56	22	620	36	9.9	59	.3	40
13	24	322	52	54	54	22	640	35	11	81	.2	31
14	21	276	60	52	53	23	682	34	12	54	5.0	23
15	21	296	*56	50	52	23	728	30	14	28	7.1	18
16	33	354	55	49	57	26	750	27	21	5.6	27	16
17	37	314	*54	49	52	30	750	30	28	10	28	14
18	34	227	53	62	48	29	728	64	41	30	23	4.5
19	32	148	51	64	42	29	705	61	76	25	17	2
20	27	118	47	60	37	28	660	34	48	24	17	2
21	23	112	49	51	34	27	640	34	31	7.7	15	4.2
22	23	107	54	46	31	26	580	28	22	.8	12	9.9
23	24	109	56	48	29	27	528	24	16	.5	10	9.5
24	27	104	55	41	29	31	446	26	18	6.7	9.5	7.5
25	32	106	54	38	29	31	359	37	8.6	22	11	7.4
26	30	88	52	36	28	33	252	41	5.7	15	67	5.6
27	27	78	45	35	28	38	143	40	3.2	10	53	4.9
28	26	74	84	34	26	47	106	46	1.6	35	32	4.5
29	23	62	350	33	-	57	89	112	26	151	23	6.3
30	21	65	560	32	-	55	71	107	62	101	17	5.9
31	21	-	600	31	-	54	-	78	-	53	14	-

Month	Observed				Change in contents (mean second-feet)†	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	803	48	15	25.9	-1.29	24.6	0.355	0.41
November	4,819	354	22	161	+2.37	163	2.36	2.63
December	3,096	600	45	99.9	+32.2	132	1.91	2.20
Calendar year 1940	45,843.0	875	1.9	125	+2.78	128	1.85	25.18
January	3,664	580	31	118	-33.8	84.4	1.22	1.41
February	1,173	85	26	41.9	-.21	41.7	.603	.63
March	907	57	21	29.3	+1.36	30.6	.442	.51
April	12,822	750	65	427	+.21	428	6.18	6.89
May	1,466	112	24	47.3	+.52	47.8	.691	.80
June	710.5	76	1.6	23.7	-.33	23.4	.338	.38
July	985.9	151	.5	31.8	+.43	32.2	.465	.54
August	533.7	67	.2	17.2	-2.20	15.0	.217	.25
September	405.9	60	2	13.5	-.35	13.2	.191	.21
Water year 1940-41	31,386.0	750	.2	86.0	-.10	85.9	1.24	16.86

* Winter discharge measurement made on this day.
† Change in contents in Wrightsville Detention Reservoir.
Note.- Stage-discharge relation affected by ice Nov. 29, Dec. 2, 3, 5, 6, 9-18, 22-25, 29, 30, Jan. 7-18, Jan. 24 to Feb. 12, Feb. 17-19, 21, 22, Mar. 2, 5-22, Mar. 26 to Apr. 2. No gage-height record Sept. 7-13, 19, 20; discharge computed on basis of weather records, records for Wrightsville Detention Reservoir, and records for stations on nearby streams.

Dog River at Northfield Falls, Vt.

Location.- Water-stage recorder, lat. 44°10'55", long. 72°38'30", 1 mile downstream from Northfield Falls, Washington County, and 1¼ miles downstream from Cox Branch. Datum of gage is 603.00 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 76.1 square miles.

Records available.- November 1934 to September 1941.

Extremes.- Maximum discharge during year, 1,210 second-feet Dec. 29; maximum gage height, 4.08 feet Dec. 29, ice jam; minimum discharge, 4.6 second-feet (regulated) Sept. 29. 1934-41: Maximum discharge, 9,750 second-feet Sept. 21, 1938 (gage height, 11.53 feet), by slope-area method; minimum, that of Sept. 29, 1941.

Remarks.- Records good except those for periods of ice effect, which are fair. Some regulation at low stages caused by power plant above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30							
0.7	12	1.1	39	0.5	4.9	0.9	25	1.3	65	2.2	301
.8	18	1.2	49	.6	8.2	1.0	33	1.4	81	2.6	456
.9	24	1.3	62	.7	13	1.1	42	1.5	101	3.2	740
1.0	32	1.4	78	.8	18	1.2	52	1.8	176	4.0	1,210

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	20	57	245	44	42	97	83	35	23	31	20
2	21	71	55	171	42	43	110	76	36	18	20	24
3	21	162	52	157	43	45	*148	76	32	20	20	16
4	13	78	47	149	41	40	234	71	31	11	25	16
5	17	58	55	132	39	38	274	70	25	12	18	14
6	17	53	51	106	40	37	367	64	24	13	17	11
7	24	48	51	99	41	*38	407	60	18	18	17	11
8	21	42	64	100	*205	37	440	78	21	47	16	18
9	31	38	59	105	140	38	518	107	27	51	15	13
10	24	36	52	92	105	38	612	75	17	32	14	13
11	19	37	*55	82	93	36	640	64	21	24	18	17
12	20	87	*50	75	81	38	606	60	17	34	16	17
13	19	95	55	70	73	38	596	60	21	51	12	11
14	23	70	58	66	70	42	960	54	15	37	14	10
15	18	209	54	66	78	42	818	45	31	25	18	16
16	28	185	56	*63	71	48	558	42	41	20	31	12
17	26	117	60	63	67	59	399	55	56	22	40	12
18	19	93	57	59	60	45	319	67	32	23	29	12
19	21	78	53	57	57	43	251	51	32	17	21	9.2
20	21	75	50	54	55	40	217	44	23	24	19	8.6
21	25	71	57	56	50	40	199	41	14	26	17	6.6
22	20	71	58	52	51	38	160	38	16	19	17	12
23	20	67	54	51	51	42	139	36	24	17	11	10
24	20	70	57	53	52	45	142	39	20	16	13	10
25	15	71	53	50	53	44	129	46	19	16	20	9.9
26	19	58	51	49	45	54	115	42	16	13	36	9.1
27	19	60	54	49	44	62	108	43	16	12	27	6.9
28	24	57	145	49	42	73	95	44	11	108	20	5.2
29	18	55	560	48	-	81	87	64	48	130	17	10
30	18	58	640	48	-	78	78	47	36	50	10	10
31	20	-	371	45	-	76	-	39	-	39	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	643	31	13	20.7	0.272	0.31
November	2,290	209	20	76.3	1.00	1.12
December	3,191	640	47	103	1.35	1.56
Calendar year 1940	43,008.0	2,040	7.3	118	1.55	21.02
January	2,561	245	45	82.6	1.09	1.25
February	1,833	205	39	65.5	.861	.90
March	1,459	81	36	47.1	.619	.71
April	9,823	960	78	327	4.30	4.80
May	1,781	107	36	57.5	.756	.87
June	775	56	11	25.8	.339	.38
July	968	130	11	31.2	.410	.47
August	612	40	10	19.7	.259	.30
September	370.5	24	5.2	12.4	.163	.18
Water year 1940-41	26,306.5	960	5.2	72.1	.947	12.85

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 4, 5, 13-29, Jan. 8-25, 27, Feb. 8, 9, 17, 24-28.

Mad River near Moretown, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°16'40", long. 72°44'35", at highway bridge 2.4 miles downstream from Moretown, Washington County, and 3.8 miles upstream from mouth.

Drainage area.- 139 square miles.

Records available.- November 1928 to September 1941.

Average discharge.- 13 years, 245 second-feet.

Extremes.- Maximum discharge during year, 3,780 second-feet Apr. 15; maximum gage height, 8.22 feet Dec. 29, ice jam; minimum discharge, 7.2 second-feet (regulated) July 6, 24, 25.

1928-41: Maximum discharge, 18,400 second-feet Sept. 22, 1938 (gage height, 16.34 feet, from floodmarks), from rating curve extended above 2,700 second-feet on basis of computations of flow over dam at gage heights 9.98 feet, 16.34 feet and 19.4 feet; minimum, 1.4 second-feet (regulated), Oct. 1, 1930.

Maximum discharge known, 23,000 second-feet Nov. 3, 1927 (gage height, 19.4 feet, from floodmarks), by computation of flow over dam.

Remarks.- Records excellent except those below 50 second-feet, which are good, and those for periods of ice effect, which are fair. Regulation at low flow by mill in Moretown.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15						Apr. 16 to Sept. 30					
3.2	26	3.7	130	5.0	1,000	3.0	7.2	3.5	80	4.2	385
3.3	39	3.8	165	5.5	1,460	3.1	15	3.6	107	4.5	590
3.4	55	4.0	255	6.0	1,970	3.2	26	3.7	139	5.0	1,000
3.5	75	4.2	375	7.0	3,130	3.3	40	3.8	177	5.5	1,460
3.6	100	4.5	590			3.4	58	4.0	270	6.1	2,080

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	60	100	510	76	63	138	203	94	42	59	44
2	42	337	94	350	74	64	160	173	83	37	45	40
3	39	539	92	300	72	60	180	166	77	29	40	30
4	38	244	80	250	70	55	*350	147	65	18	41	26
5	35	169	100	210	68	56	450	147	60	25	38	22
6	35	242	95	185	70	58	620	133	54	13	27	25
7	39	252	98	170	75	60	769	120	48	32	23	24
8	98	192	130	155	300	*62	780	160	45	208	23	37
9	106	152	110	145	240	65	865	234	44	147	21	29
10	69	134	100	135	*210	60	1,030	173	38	70	19	35
11	56	152	103	125	200	52	1,140	143	36	53	42	135
12	51	562	100	110	175	56	1,170	123	33	208	30	66
13	50	417	130	115	150	58	1,350	110	35	184	27	41
14	49	256	117	104	130	65	2,780	104	34	99	24	34
15	60	530	117	100	140	72	2,770	95	98	60	24	44
16	103	442	*120	*95	145	82	1,980	83	66	48	110	29
17	74	288	130	97	130	95	1,310	143	61	49	137	27
18	68	221	120	102	115	85	1,070	206	166	44	62	26
19	54	178	113	110	107	80	862	143	141	32	49	25
20	57	169	107	100	104	75	830	107	68	44	38	13
21	55	172	115	98	100	72	862	94	47	51	36	13
22	51	182	110	98	95	70	506	79	36	36	31	26
23	53	197	100	100	90	78	379	70	44	31	23	28
24	66	178	90	90	84	85	367	76	43	27	18	25
25	65	180	97	92	80	82	314	88	42	22	39	22
26	58	133	104	86	74	100	276	94	38	37	176	19
27	59	137	110	88	70	121	250	115	26	33	62	14
28	51	125	560	92	67	134	221	143	24	395	45	12
29	49	90	1,750	88	-	148	195	434	60	382	36	28
30	45	110	1,500	82	-	154	181	173	64	128	34	20
31	52	-	845	78	-	127	-	120	-	77	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,782	106	35	57.5	0.414	0.48
November	7,040	562	60	235	1.69	1.88
December	7,537	1,750	80	243	1.75	2.02
Calendar year 1940	96,913	4,970	19	265	1.91	25.93
January	4,460	510	78	144	1.04	1.19
February	3,311	300	67	118	.849	.89
March	2,494	154	52	80.5	.579	.67
April	24,155	2,780	138	805	5.79	6.46
May	4,399	434	70	142	1.02	1.18
June	1,770	166	24	59.0	.424	.47
July	2,661	395	13	85.8	.617	.71
August	1,415	176	18	45.6	.328	.38
September	959	135	12	32.0	.230	.26
Water year 1940-41	61,983	2,780	12	170	1.22	16.59

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 28 to Dec. 30, Jan. 2 to Mar. 14, Mar. 20-26, Apr. 2-6.

Waterbury Reservoir near Waterbury, Vt.

Location.- Water-stage recorder, lat. 44°22'55", long. 72°46'15", at dam on Waterbury River, 2 2/3 miles upstream from mouth and 3½ miles north of Waterbury, Washington County. Datum of gage is at mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 109 square miles.

Records available.- September 1938 to September 1941.

Extremes.- Maximum elevation during year, 593.10 feet Apr. 29; minimum, 504.6 feet (from graph based on gage readings) Apr. 5.
1938-41: Maximum elevation, 613.45 feet May 4, 1940; minimum observed, 501.3 feet Oct. 16, 1938.

Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, during summer of 1937 for conservation and flood control. Total usable capacity for flood control, 2,812,300,000 cubic feet between elevations 500.0 feet (bottom of lowest outlet) and 617.5 feet (crest of spillway) above mean sea level. Usable capacity for conservation, 1,582,700,000 cubic feet between elevations 500.0 feet and 592.0 feet (sill of taintor gate) above mean sea level.

Elevation at midnight, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	557.97	551.40	579.93	590.60	571.65	544.38	514.7	591.44	591.57	589.40	569.86	580.27
2	557.46	552.4	579.80	589.99	570.63	543.72	513.4	591.43	591.34	589.48	569.92	579.06
3	556.93	554.60	579.26	589.25	569.55	543.06	512.9	591.39	590.94	589.52	589.71	578.07
4	556.40	555.77	578.56	588.53	568.31	542.38	507.5	591.33	590.63	589.58	589.18	577.17
5	555.83	556.47	578.53	587.63	566.93	541.65	504.6	591.29	590.74	589.62	588.64	576.56
6	555.05	557.99	578.28	587.0	565.78	540.94	506.2	591.23	590.84	589.45	588.12	576.36
7	554.01	559.12	578.39	587.1	565.25	540.18	514.6	591.23	590.93	589.27	587.58	575.86
8	554.33	560.01	578.82	586.8	566.66	539.33	524.49	591.39	590.94	589.41	587.35	574.94
9	554.86	560.64	579.15	586.42	567.42	538.56	530.80	591.48	590.39	589.50	587.40	574.01
10	555.20	561.14	579.21	586.06	567.88	537.79	536.87	591.47	589.84	589.58	587.00	573.11
11	555.48	561.81	578.84	585.90	568.30	537.00	542.85	591.43	589.65	589.76	586.18	573.21
12	555.46	566.14	578.66	585.40	567.74	536.22	547.95	591.38	589.56	590.31	585.52	573.38
13	554.70	567.96	579.13	584.95	566.56	535.34	553.07	591.31	589.33	590.48	584.81	573.50
14	553.96	568.90	579.48	584.43	565.77	534.46	563.75	591.30	589.23	590.58	584.10	573.33
15	553.60	570.94	579.77	583.84	566.13	533.59	572.62	591.45	589.25	590.48	583.75	572.58
16	554.11	572.12	579.67	583.26	565.03	532.80	577.57	591.60	589.23	590.16	583.93	571.84
17	554.51	572.94	579.90	582.73	562.91	532.16	580.66	592.02	589.33	589.84	584.09	570.98
18	554.87	573.55	580.30	582.28	560.32	531.29	582.90	592.18	589.76	589.62	584.18	569.76
19	555.15	574.07	580.60	582.61	557.71	530.42	584.77	591.72	589.99	589.69	583.90	568.90
20	554.94	574.60	580.90	582.42	554.98	529.39	586.80	591.57	590.14	589.51	583.05	568.52
21	554.49	575.14	581.25	581.78	553.33	528.47	588.90	591.52	590.23	589.22	582.25	567.84
22	553.99	575.88	581.60	580.97	552.58	527.47	589.74	591.43	590.18	588.91	582.14	566.64
23	553.52	576.56	581.55	580.10	551.58	526.47	590.39	591.37	590.0	588.62	582.20	565.45
24	553.32	577.21	581.30	579.18	549.73	525.50	591.07	591.27	589.79	588.32	581.61	564.17
25	553.50	577.76	580.99	578.31	547.67	524.48	591.66	591.01	589.59	588.27	581.07	563.18
26	553.87	578.14	580.68	577.42	546.06	523.60	592.14	590.74	589.41	588.31	581.38	562.64
27	553.82	578.58	580.42	576.48	545.11	522.85	592.58	590.95	589.23	588.24	581.27	562.30
28	553.35	578.92	582.4	575.53	545.07	521.68	592.97	591.07	589.18	589.26	580.91	561.67
29	552.86	579.20	586.60	574.59	-	520.26	592.53	591.46	589.28	589.80	580.83	560.86
30	552.37	579.54	590.10	573.62	-	518.7	591.68	591.72	589.31	589.98	580.89	559.97
31	551.91	-	591.24	572.63	-	516.5	-	591.79	-	589.95	580.98	-

Elevation and contents, water year October 1940 to September 1941

Date	Elevation† (feet)	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)	Change in contents during month (equivalent mean second-feet)
Sept.30.....	‡558.48	627.4	-	-
Oct. 31.....	551.91	497.6	-129.8	-48.5
Nov. 30.....	579.54	1,155.2	+657.6	+254
Dec. 31.....	591.24	1,553.1	+397.9	+149
Calendar year 1940.	-	-	+918.1	+29.0
Jan. 31.....	572.63	961.1	-592.0	-221
Feb. 28.....	545.07	378.3	-582.8	-241
Mar. 31.....	516.5	69.9	-308.4	-115
Apr. 30.....	591.68	1,570.2	+1,500.3	+579
May 31.....	591.79	1,574.5	+4.3	+1.61
June 30.....	589.31	1,480.4	-94.1	-36.3
July 31.....	589.95	1,503.2	+22.8	+8.51
Aug. 31.....	580.98	1,199.7	-303.5	-113
Sept.30.....	559.97	658.2	-541.5	-209
Water year 1940-41.	-	-	+30.8	+.980

† Elevation at midnight.
‡ Shown as 0.10 foot lower than in Water-Supply Paper 894 because of datum correction.
Note.- Elevations for periods Nov. 2, Dec. 28, Jan. 6-8, Mar. 30 to Apr. 7, June 23, determined from graph based on twice-daily readings, time of valve operation and records for station on Waterbury River downstream from Reservoir.

Waterbury River near Waterbury, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°22'10", long. 72°46'10", 1 2/3 miles upstream from mouth and 2½ miles north of Waterbury, Washington County. Datum of gage is 428.00 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 111 square miles.

Records available.- December 1935 to September 1941.

Extremes.- Maximum discharge during year, 880 second-feet (regulated) Apr. 4 (gage height, 8.38 feet); minimum daily, 0.6 second-foot (regulated) July 3-5.
1935-41: Maximum discharge, 6,520 second-feet Mar. 18, 1936 (gage height, 19.38 feet); minimum daily, 0.6 second-foot (regulated) several times during summers of 1938, 1939 and 1941.

Remarks.- Records excellent except those below 25 second-feet, which are good. Flow completely regulated by Waterbury Reservoir (see p. 173).

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

4.72	0.6	5.2	9.S	6.0	71	7.5	450
4.S	1.2	5.3	14	6.2	9S	S.0	665
4.9	2.4	5.4	19	6.5	150	S.5	935
5.0	4.2	5.6	32	6.S	216		
5.1	6.6	5.S	49	7.1	301		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	164	15S	2.2	557	36S	177	232	273	166	0.9	73	267
2	162	71	124	552	365	177	232	132	166	.7	1.0	426
3	162	2.7	279	552	365	177	232	132	232	.6	81	372
4	162	2.1	g206	54S	410	177	519	132	196	.6	245	311
5	162	1.7	g206	548	446	177	571	132	2.1	.6	245	230
6	200	2.4	g171	363	374	177	57S	110	1.6	7S	245	94
7	286	2.5	g53	86	226	177	385	101	1.4	162	245	175
S	115	2.5	g2.2	270	6.0	174	16	102	30	56	124	311
9	1.4	2.0	g2.0	270	3.0	174	16	102	255	1.1	1.1	311
10	1.6	1.8	g67	270	2.7	174	19	102	264	.9	110	311
11	.9	2.0	g202	173	2.5	174	18	101	100	.S	403	131
12	50	7.7	g140	267	225	174	16	101	100	2.3	286	1.0
13	234	3.S	g2.7	276	402	174	15	101	100	1.0	286	.7
14	234	2.9	g2.0	292	326	172	26	75	100	.9	282	S4
15	169	S.7	g1.S	292	46	172	19	2.1	101	70	187	256
16	1.5	4.9	g147	292	378	170	13	1.6	100	160	1.5	256
17	1.0	3.6	67	292	642	170	9.5	2.9	36	160	.9	292
18	.9	2.9	2.4	284	690	170	7.6	156	1.5	107	.7	368
19	.9	2.5	2.1	S.S	690	170	6.4	339	1.2	1.3	129	276
20	94	2.7	2.1	152	665	168	6.0	135	1.1	97	332	122
21	160	2.5	2.1	292	438	168	7.7	101	1.0	144	302	209
22	160	2.5	2.1	365	232	168	5.2	101	50	144	69	365
23	160	2.2	57	368	273	166	4.7	101	98	144	1.0	365
24	160	2.4	194	368	413	166	4.9	120	98	144	208	361
25	56	2.4	194	372	470	164	4.7	219	98	51	281	273
26	1.0	2.2	197	372	365	164	4.0	219	98	.9	2.0	147
27	72	2.2	197	372	256	164	3.6	7S	9S	49	74	102
28	150	2.2	92	372	51	197	3.0	122	100	104	154	174
29	160	2.1	23	372	-	237	346	S2	100	3.1	48	224
30	160	2.1	15	368	-	237	557	2.4	41	1.4	.9	224
31	158	-	170	368	-	234	-	43	-	42	.7	-

Month	Observed				Change in contents (equivalent mean second-feet)†	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	3,609.2	2S6	0.9	116	-48.5	68.0	0.613	0.71
November	311.2	158	1.7	10.4	+254	264	2.38	2.65
December	2,S27.7	279	1.S	91.2	+149	240	2.16	2.49
Calendar year 1940	72,960.3	1,450	.9	199	+29.0	228	2.05	28.01
January	10,328.S	557	3.S	333	-221	112	1.01	1.16
February	9,135.2	690	2.5	326	-241	S5.4	.769	.S0
March	5,540	237	164	179	-115	63.6	.573	.66
April	3,S77.3	57S	3.0	129	+579	708	6.3S	7.12
May	3,571.0	339	1.6	115	+1.61	117	1.05	1.21
June	2,736.9	264	1.0	91.2	-36.3	54.9	.495	.55
July	1,729.1	162	.6	55.S	+S.51	64.3	.579	.67
August	4,41S.S	403	.7	143	-113	29.2	.263	.30
September	7,038.7	426	.7	235	-209	25.7	.232	.26
Water year 1940-41	55,123.9	690	.6	151	+.9S	152	1.37	18.58

† Change in contents in Waterbury Reservoir.
g Computed from graph based on observer's twice-daily readings and records of gate operations at Waterbury Reservoir.

Lamoille River at Johnson, Vt.

Location.- Water-stage recorder, lat. 44°37'20", long. 72°40'50", at falls 0.9 mile upstream from bridge in Johnson, Lamoille County, and 1 1/8 miles upstream from Gihon River.

Drainage area.- 310 square miles.

Records available.- July 1910 to Decembsr 1913, September 1928 to September 1941.

Average discharge.- 13 years (1928-41), 507 second-feet.

Extremes.- Maximum discharge during year, 5,540 second-feet Apr. 14; maximum gage height, 11.25 feet Dec. 30, ice jam; minimum discharge, 20 second-feet (regulated) Aug. 24, 25, Sept. 7, 8; minimum daily, 26 second-feet Sept. 7.
1910-13, 1928-41: Maximum discharge, 13,000 second-feet Mar. 18, 1936 (gage height, 16.48 feet), by computation of flow over dam; minimum, 11 second-feet (regulated) Sept. 2, 1935; minimum daily, 20 second-feet Aug. 18, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by power plant above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 29, May 1-17, 19-28, June 1-29)

Oct. 1 to Apr. 14

1.7	73	3.5	780	8.0	3,280
2.0	178	4.0	1,020	9.0	4,050
2.5	354	6.0	2,020	10.0	4,940
3.0	555	7.0	2,600		

Apr. 15 to Sept. 30

1.4	20	2.0	169
1.5	37	2.2	235
1.6	59	2.5	349
1.8	111	3.0	555

Note.- Same as preceding table above 3.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	141	155	1,320	200	200	320	271	198	244	128	93
2	125	231	280	834	165	115	350	170	257	178	100	118
3	174	1,180	260	594	230	180	450	128	221	163	35	112
4	153	874	260	513	200	195	700	48	169	126	133	121
5	159	505	230	466	190	195	1,150	243	157	104	140	111
6	93	435	215	440	175	180	1,200	265	175	56	126	89
7	98	551	230	360	190	170	1,500	243	169	128	96	26
8	188	470	180	320	280	165	1,400	235	108	179	97	87
9	298	297	290	290	420	125	1,900	298	145	174	72	118
10	361	285	300	270	420	*220	2,500	243	133	152	31	197
11	212	291	280	260	*375	185	3,000	226	100	131	81	534
12	141	958	300	275	340	185	3,000	249	92	277	89	289
13	119	1,520	270	285	320	175	2,930	232	111	272	90	165
14	171	745	275	290	310	160	4,480	225	87	299	89	69
15	167	1,270	285	310	300	150	4,840	202	49	187	110	116
16	168	1,320	340	290	280	130	4,380	214	188	137	100	121
17	199	764	305	270	300	210	*2,540	226	198	119	72	117
18	189	598	335	235	250	220	2,080	351	198	165	142	105
19	129	447	*320	255	235	215	1,520	286	185	145	118	107
20	129	400	285	290	220	220	1,320	256	191	85	126	100
21	157	388	225	270	200	230	1,470	213	191	138	132	34
22	143	390	230	250	215	210	945	195	95	137	120	101
23	140	301	300	240	150	155	676	172	157	128	113	97
24	150	343	270	250	235	225	601	193	119	120	31	102
25	159	474	190	215	210	230	704	116	114	125	125	104
26	154	352	280	225	180	240	596	221	106	121	118	116
27	82	252	230	260	185	250	389	271	108	36	145	107
28	163	174	400	215	190	270	365	286	125	215	119	46
29	155	270	1,500	225	-	290	300	691	257	262	114	72
30	137	245	3,500	230	-	280	514	578	325	176	117	96
31	85	-	2,330	220	-	340	-	375	-	138	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,986	361	82	161	0.519	0.60
November	16,471	1,520	141	549	1.77	1.98
December	14,850	3,500	155	479	1.55	1.78
Calendar year 1940	187,721	9,930	20	513	1.65	22.51
January	10,767	1,320	215	347	1.12	1.29
February	6,965	420	150	249	.803	.84
March	6,315	340	115	204	.658	.76
April	48,120	4,840	300	1,604	5.17	5.77
May	7,922	691	48	256	.826	.95
June	4,728	325	49	158	.510	.57
July	4,917	299	36	159	.513	.59
August	3,150	145	31	102	.329	.38
September	3,690	534	26	123	.397	.44
Water year 1940-41	132,881	4,840	26	364	1.17	15.95

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 29 to Dec. 30, Jan. 6 to Apr 10. Shifting-control method used Apr. 29, May 1-17, 19-28, June 1-29; discharge computed on basis of three discharge measurements and gage heights.

Lamoille River at East Georgia, Vt.

Location.- Water-stage recorder, lat. 44°40'45", long. 73°04'20", at East Georgia, Franklin County, 0.5 mile upstream from railroad bridge and 1 mile downstream from Beaver Meadow Brook.

Drainage area.- 686 square miles.

Records available.- October 1937 to September 1941. August 1929 to November 1937, at site near Milton, 3⅛ miles downstream.

Average discharge.- 12 years, 1,196 second-feet, adjusted to present drainage area.

Extremes.- Maximum discharge during year, 10,600 second-feet Apr. 15; maximum gage height, 13.38 feet Dec. 29, ice jam; minimum discharge, 58 second-feet (regulated) Sept. 30; minimum daily, 130 second-feet Sept. 29.
1929-41: Maximum discharge, 23,200 second-feet Mar. 19, 1936 (gage height, 12.52 feet, site and datum then in use), by computation of flow over dam; minimum, 49 second-feet (regulated) July 30, 1933; minimum daily, 91 second-feet (regulated) July 30, 1933.

Remarks.- Records good except those for period of ice effect, which are poor. Flow regulated at low stages by power plants above station.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 7

2.6	229	4.2	1,130	7.0	5,050
2.9	331	4.6	1,520	8.0	7,150
3.2	457	5.0	1,970	9.0	9,700
3.5	610	5.5	2,620	10.0	12,900
3.8	800	6.0	3,350		

Apr. 8 to Sept. 30

2.1	118	3.0	400	4.5	1,470
2.3	164	3.3	545	5.0	2,000
2.5	219	3.6	725	5.5	2,620
2.7	283	4.0	1,020		

Note.- Same as preceding table above 5.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	385	278	480	3,280	420	400	820	948	752	546	271	191
2	348	382	540	1,850	410	410	980	680	642	355	210	166
3	288	1,790	630	1,580	420	380	1,030	566	487	279	162	170
4	304	2,090	720	1,370	450	350	1,500	480	531	256	168	180
5	268	1,270	680	1,270	440	410	2,400	422	436	224	186	174
6	252	1,270	700	1,350	380	430	2,800	541	396	202	233	228
7	254	2,030	620	1,200	400	420	3,600	614	408	197	188	193
8	713	1,970	820	1,000	850	350	3,500	609	268	226	194	186
9	1,100	1,370	880	830	1,270	290	4,300	786	359	450	144	156
10	772	964	840	860	1,080	290	5,150	687	326	408	146	230
11	634	1,090	760	720	920	420	6,050	540	288	386	152	2,120
12	380	3,140	720	650	800	370	6,270	536	241	366	172	1,050
13	337	4,510	760	710	700	380	6,050	562	232	619	177	594
14	448	2,350	780	750	690	350	7,630	480	252	550	185	396
15	482	2,350	720	720	880	300	10,300	478	260	436	190	284
16	810	3,350	740	600	950	290	10,000	426	366	317	234	194
17	676	2,090	970	610	780	420	6,710	518	595	244	368	246
18	572	1,520	930	620	680	560	5,050	1,080	418	250	328	231
19	466	1,160	860	660	620	600	3,910	888	405	220	274	204
20	366	1,060	760	690	570	460	3,260	693	342	214	199	170
21	487	1,080	720	670	530	400	3,430	578	423	222	242	172
22	356	1,020	700	600	500	500	2,490	454	246	204	230	200
23	382	1,090	700	600	480	440	1,720	468	260	274	189	160
24	369	915	660	590	480	420	1,420	386	266	250	196	176
25	478	1,060	550	550	450	500	1,520	534	235	256	184	160
26	423	907	560	520	480	620	1,420	474	218	233	185	172
27	420	758	620	540	440	700	1,190	627	202	186	283	178
28	332	604	1,000	550	460	800	948	895	232	453	277	143
29	349	660	4,300	510	-	860	819	2,050	513	962	228	130
30	355	750	7,400	500	-	900	762	1,780	590	613	188	138
31	333	-	5,500	490	-	820	-	1,070	-	312	147	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,144	1,100	252	456	0.665	0.77
November	44,898	4,510	278	1,497	2.18	2.43
December	37,620	7,400	480	1,214	1.77	2.04
Calendar year 1940	446,754	17,700	156	1,221	1.78	24.22
January	27,440	3,280	490	885	1.29	1.49
February	17,530	1,270	380	626	.913	.95
March	14,840	900	290	479	.698	.80
April	107,049	10,300	762	3,568	5.20	5.80
May	21,850	2,050	386	705	1.03	1.18
June	11,189	752	202	373	.544	.61
July	10,710	962	186	345	.503	.58
August	6,530	368	144	211	.308	.35
September	8,592	2,120	130	300	.437	.49
Water year 1940-41	322,792	10,300	130	884	1.29	17.49

Note.- Stage-discharge relation affected by ice Nov. 29 to Dec. 31, and Jan. 5 to Apr. 10.

Missisquoi River near North Troy, Vt.

Location.- Water-stage recorder, lat. 44°58'20", long. 72°23'15", just upstream from Big Falls, 1⅛ miles downstream from Jay Branch, and 2¼ miles upstream from North Troy, Troy County.

Drainage area.- 131 square miles.

Records available.- August 1931 to September 1941.

Average discharge.- 10 years, 259 second-feet.

Extremes.- Maximum discharge during year, 4,400 second-feet Apr. 14 (gage height, 9.50 feet); minimum, 12 second-feet Sept. 24 (gage height, 0.85 foot).
1931-40: Maximum discharge, 7,980 second-feet (revised) May 3, 1940 (gage height, 12.87 feet), from rating curve extended above 3,400 second-feet by logarithmic plotting; minimum, 10 second-feet Aug. 22, 1934 (gage height, 0.81 foot).

Remarks.- Records good except those for periods of ice effect, which are fair. Some regulation from small power plant above station.

Revisions.- Revised figures of discharge, in second-feet, for the high-water period in the water year 1940, superseding those published in Water-Supply Paper 894, are given herein:

May 1	2,860
2	3,270
3	6,510
4	2,490

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
May	30,711	6,510	150	991	7.56	8.72
Water year 1939-40	91,011	6,510	20	249	1.90	25.81

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	52	104	502	61	45	85	122	154	80	28	20
2	41	111	103	264	61	47	93	118	118	52	27	22
3	39	747	98	255	60	52	110	109	100	42	23	22
4	35	362	94	226	60	48	180	101	82	37	24	22
5	37	194	103	179	59	49	370	144	74	29	21	21
6	38	332	104	148	58	50	550	117	65	36	16	25
7	34	334	97	120	64	46	730	99	59	28	20	38
8	179	252	128	110	72	45	680	105	54	37	16	33
9	192	178	136	105	130	45	900	111	62	110	16	27
10	103	133	106	97	140	49	1,350	97	47	77	27	61
11	76	152	*102	93	90	49	1,600	82	40	41	19	338
12	64	1,120	92	90	84	47	1,640	87	40	123	24	109
13	56	860	89	100	86	50	1,700	72	39	120	30	69
14	79	334	94	*90	87	49	3,530	68	56	79	24	38
15	78	562	90	100	170	51	*3,610	65	90	39	26	38
16	108	571	97	110	210	55	*2,960	64	103	30	52	32
17	89	291	248	115	160	62	1,470	141	152	37	90	28
18	78	211	221	130	120	57	1,250	290	140	43	58	25
19	65	163	171	165	92	54	916	159	107	37	37	25
20	55	185	134	150	*82	*50	805	109	77	40	33	24
21	67	241	172	125	76	54	916	87	56	29	25	21
22	56	224	180	105	70	53	456	76	43	29	30	23
23	52	234	148	97	66	55	306	57	37	29	25	19
24	87	192	109	89	61	60	261	65	36	27	21	12
25	81	191	127	82	57	62	263	84	35	28	28	14
26	71	120	108	77	59	67	217	111	31	31	30	18
27	63	116	103	72	50	70	188	278	28	38	45	20
28	62	110	320	69	50	78	164	220	195	39	30	17
29	59	101	1,500	67	-	88	142	1,400	447	51	26	28
30	50	112	2,000	65	-	94	129	466	133	44	24	30
31	50	-	1,260	63	-	86	-	226	-	33	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,187	192	34	70.5	0.538	0.62
November	8,785	1,120	52	293	2.24	2.49
December	8,438	2,000	89	272	2.08	2.40
Calendar year 1940	92,100	4,720	20	252	1.92	26.13
January	4,060	502	63	131	1.00	1.15
February	2,435	210	50	87.0	.664	.69
March	1,767	94	45	57.0	.435	.50
April	27,571	3,610	85	919	7.02	7.83
May	5,330	1,400	57	172	1.31	1.51
June	2,700	447	28	90.0	.687	.77
July	1,495	123	27	48.2	.368	.42
August	916	90	16	29.5	.225	.26
September	1,219	338	12	40.6	.310	.35
Water year 1940-41	66,903	3,610	12	183	1.40	18.99

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 28-30, Jan. 7 to Feb. 13, Feb. 15-17, Feb. 24 to Apr. 11.

Missisquoi River near Richford, Vt.

Location.- Water-stage recorder, lat. 44°57'30", long. 72°41'55", 1 2/3 miles upstream from Trout River, 3 miles south of Richford, Franklin County, and 3⅝ miles downstream from North Branch.
Drainage area.- 479 square miles.
Records available.- May 1909 to November 1910, July 1911 to September 1923, October 1928 to September 1941.
Average discharge.- 21 years (1911-19, 1928-41), 920 second-feet.
Extremes.- Maximum discharge during year, 11,300 second-feet Apr. 15 (gage height, 12.38 feet); maximum gage height, 13.58 feet Dec. 29 (ice jam); minimum discharge, 37 second-feet Sept. 4 (gage height, 2.23 feet).
1909-10, 1911-23, 1928-41: Maximum discharge, 17,200 second-feet May 4, 1940 (gage height, 15.15 feet), from rating curve extended above 7,300 second-feet on basis of computation of flow over dam at gage height 14.70 feet, slope-area determination at gage height 12.90 feet, and study of discharge per foot of width at measuring section; maximum gage height, 17.64 feet Apr. 1, 1918, ice jam; minimum discharge, 8 second-feet July 14, 1911.
Maximum discharge known, 45,000 second-feet during flood of November 1927 (gage height, 23.1 feet, from floodmarks), from rating curve extended as above.
Remarks.- Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low stages.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15

2.5	78	3.8	510	8.0	4,420
2.7	116	4.2	752	10.0	7,150
2.9	163	5.0	1,360	12.0	10,500
3.2	252	6.0	2,240		
3.5	366	7.0	3,260		

Apr. 16 to Sept. 30

2.2	33	2.7	119	4.8	1,210
2.3	46	2.9	175	5.4	1,700
2.4	61	3.2	288	6.0	2,240
2.5	78	3.7	520		
2.6	97	4.2	790		

Note.- Same as previous table above 6.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	160	440	3,700	260	200	350	456	590	390	93	66
2	125	355	435	2,100	250	190	380	427	460	322	91	60
3	118	1,610	425	1,400	240	195	440	404	385	255	84	49
4	114	1,360	420	1,120	235	200	800	367	322	199	80	38
5	110	773	420	873	230	195	1,500	460	259	172	75	43
6	94	1,010	410	720	225	195	2,100	436	220	154	71	75
7	104	1,440	400	620	220	190	3,000	362	206	129	60	73
8	475	1,520	520	540	490	185	4,180	385	192	151	45	64
9	489	1,040	540	490	490	185	3,700	399	166	169	52	76
10	350	732	480	450	440	185	4,540	354	157	209	49	125
11	236	793	420	420	395	*195	5,700	305	145	189	49	525
12	199	2,890	380	400	*360	205	5,840	263	135	263	55	451
13	199	2,940	370	420	340	210	5,700	251	124	314	61	228
14	190	1,660	350	390	340	215	8,110	220	137	263	63	157
15	334	1,560	360	370	780	225	10,300	206	209	213	68	119
16	538	2,060	350	340	660	225	9,600	189	520	157	76	108
17	420	1,320	1,050	360	540	255	6,700	505	432	137	110	82
18	317	955	880	420	450	240	4,540	955	381	132	119	82
19	284	752	820	520	370	230	3,480	660	610	140	97	80
20	249	745	*720	500	310	230	2,640	446	367	122	89	80
21	217	925	720	440	285	235	2,640	340	255	117	78	75
22	214	888	730	400	270	235	1,880	280	192	119	84	68
23	211	888	700	370	260	235	1,210	239	142	95	76	63
24	230	766	560	360	250	240	990	236	137	93	71	66
25	246	759	550	350	235	255	955	236	129	88	70	75
26	236	560	520	325	215	275	826	314	112	122	70	64
27	217	470	500	315	210	295	706	969	97	106	71	60
28	196	460	1,100	315	200	350	625	990	241	117	71	56
29	187	440	5,400	295	-	400	545	1,700	1,050	119	71	54
30	174	450	7,150	280	-	400	495	1,970	694	112	70	58
31	163	-	5,840	275	-	360	-	878	-	115	68	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,379	538	94	238	0.497	0.57
November	32,281	2,940	160	1,076	2.25	2.51
December	33,960	7,150	350	1,095	2.29	2.64
Calendar year 1940	352,546	15,200	68	963	2.01	27.38
January	19,878	3,700	275	641	1.34	1.54
February	9,550	780	200	341	.712	.74
March	7,430	400	185	240	.501	.58
April	94,472	10,300	350	3,149	6.57	7.33
May	16,202	1,970	189	523	1.09	1.26
June	9,066	1,050	97	302	.630	.70
July	5,283	390	88	170	.355	.41
August	2,287	119	45	73.8	.154	.18
September	3,220	525	38	107	.223	.25
Water year 1940-41	241,008	10,300	38	660	1.38	18.71

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 26 to Dec. 29, Jan. 6 to Apr. 7.

Lake Memphremagog at Newport, Vt.

Location.- Chain gage, lat. 44°56'10", long. 72°12'15", on concrete highway bridge in Newport, Orleans County. Datum of gage is 673.00 feet above mean sea level, datum of 1929.

Records available.- May 1931 to September 1941.

Extremes.- Maximum gage height observed during year, 10.76 feet Apr. 17; minimum observed, 7.36 feet Sept. 30.
1931-41: Maximum gage height observed, 12.92 feet Apr. 20, 1933; minimum observed, 6.69 feet Nov. 4, 1934.

Remarks.- Gage read twice daily on most days.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.01	7.94	-	10.11	9.85	9.56	8.35	9.79	9.52	8.94	8.26	7.72
2	8.01	7.94	9.30	10.25	9.88	9.52	8.26	9.85	9.51	9.00	8.29	7.75
3	7.98	-	9.29	10.33	9.82	9.50	8.23	9.68	9.49	8.86	8.26	7.79
4	7.97	8.26	9.30	10.37	9.82	9.53	8.18	9.66	9.47	8.82	8.26	7.70
5	7.93	8.30	9.30	-	9.83	9.62	8.26	9.68	9.46	8.82	8.24	7.62
6	-	8.37	9.30	10.50	9.84	9.52	8.40	9.61	9.38	-	8.22	7.73
7	7.91	8.38	9.26	10.48	9.84	9.42	8.57	9.73	9.36	8.73	8.16	7.75
8	8.05	8.47	-	10.50	10.10	9.42	8.67	9.74	9.36	8.69	8.09	7.66
9	8.08	8.52	9.28	-	10.02	9.35	8.84	9.63	9.38	8.72	8.11	7.58
10	8.08	-	9.28	-	10.02	9.37	9.06	9.74	9.46	8.72	8.22	7.60
11	8.06	8.52	9.23	-	9.82	9.36	9.44	9.72	9.27	8.68	8.03	7.77
12	8.06	8.56	9.17	-	9.84	9.36	9.82	9.58	9.17	8.64	8.01	7.77
13	-	8.72	9.20	-	9.85	9.37	10.03	9.54	9.12	8.71	8.04	7.71
14	8.07	8.78	9.15	10.32	9.83	9.32	10.29	9.50	9.08	8.65	7.91	7.68
15	8.12	8.92	-	10.25	9.80	8.78	10.52	9.49	9.14	8.64	7.88	7.67
16	8.16	9.07	9.10	10.16	9.85	8.78	10.67	9.41	9.14	8.58	7.93	7.67
17	8.10	-	9.19	10.16	9.84	8.78	10.74	9.46	9.11	8.54	8.02	7.69
18	8.14	9.20	9.18	10.19	9.84	8.78	10.74	9.61	9.03	8.54	7.91	7.70
19	8.12	9.23	9.19	10.32	9.86	8.78	10.73	9.55	9.08	8.49	7.87	7.61
20	-	9.21	9.17	10.32	9.48	8.77	10.64	9.47	9.01	8.55	7.95	7.57
21	-	9.26	9.18	10.36	9.45	8.77	10.61	9.38	8.99	8.51	7.81	7.57
22	8.09	9.30	-	10.35	9.47	8.77	10.56	9.36	9.00	8.54	7.85	7.57
23	7.96	9.33	9.20	10.35	9.45	8.82	10.36	9.37	9.03	8.42	7.86	7.61
24	8.06	-	9.14	10.33	9.48	8.79	10.21	9.38	8.90	8.40	7.81	7.50
25	8.03	9.34	9.16	10.28	9.54	8.76	10.10	9.37	8.94	8.37	7.77	7.50
26	8.07	9.35	-	10.35	9.58	8.73	9.92	9.32	8.84	8.45	7.83	7.48
27	-	9.36	9.17	10.34	9.58	8.42	10.06	9.32	8.80	8.38	7.85	7.50
28	8.06	9.31	9.25	10.35	9.62	8.38	10.01	9.29	8.78	8.37	7.79	7.42
29	8.03	9.28	-	10.36	-	8.40	9.84	9.69	8.98	8.37	7.72	7.53
30	7.97	9.31	9.64	10.34	-	8.38	9.86	9.38	8.94	8.30	7.68	7.36
31	7.98	-	9.91	10.35	-	8.38	-	9.35	-	8.30	7.71	-

Clyde River at Newport, Vt.

Location.- Water-stage recorder, lat. 44°56'20", long. 72°11'25", in Newport, Orleans County, just downstream from unnamed tributary entering from north and 1 mile upstream from mouth. Datum of gage is 682.36 feet above mean sea level, datum of 1929.

Drainage area.- 142 square miles.

Records available.- September 1938 to September 1941. May 1909 to September 1924 and November 1928 to May 1936 at site 0.65 mile upstream.

Average discharge.- 19 years (1909-19, 1929-35, 1938-41), 242 second-feet.

Extremes.- Maximum discharge during year, 1,420 second-feet Apr. 18 (gage height, 6.41 feet); minimum daily, 33 second-feet Sept. 7.

1909-24, 1928-36, 1938-41: Maximum discharge, 3,900 second-feet Mar. 20, 1936 (gage height, 5.76 feet, site and datum then in use), by computation of flow over dam; minimum daily, 3.0 second-feet Oct. 27, 1930; practically no flow at times because of regulation.

Revisions.- The minimum daily discharge for the water year 1940 has been revised to 17 second-feet Sept. 22, 1940, superseding figure published in Water-Supply Paper 894.

Remarks.- Records excellent except those for periods of ice effect, and those below 80 second-feet, which are good. Flow regulated by power plant and reservoirs above station.

Revisions.- Revised figures of discharge for low-water periods in the water year 1940, superseding those published in Water-Supply Paper 894, are given herein.

Rating tables, water years 1939-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1, 1939, to Sept. 30, 1940						Oct. 1, 1940, to Sept. 30, 1941			
2.2	14	3.0	72	4.5	460	2.5	31	4.0	302
2.3	18	3.2	101	5.0	666	2.7	46	4.5	478
2.4	23	3.4	139	6.0	1,180	2.9	65	5.0	683
2.6	35	3.7	208	7.0	1,780	3.1	89	5.5	913
2.8	52	4.0	291	8.5	2,680	3.3	124	6.3	1,360
						3.6	191		

Discharge, in second-feet, 1939-41

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	337	119	137	99	91	132	g1,240	289	186	105	36
2	122	371	107	144	82	89	136	g1,600	321	187	102	45
3	127	384	82	148	b72	42	129	g2,380	294	186	139	56
4	208	398	150	130	b66	110	182	2,680	316	190	84	44
5	219	396	182	b130	114	151	312	2,500	244	195	92	46
6	210	420	168	128	101	158	349	2,080	248	184	119	109
7	200	383	167	b120	99	139	330	1,660	304	156	135	138
8	167	385	185	b140	92	138	326	1,360	308	162	115	131
9	146	361	176	b62	96	103	364	1,180	76	151	134	171
10	145	346	154	b62	101	57	398	1,020	241	140	150	193
11	138	345	157	b80	62	115	420	910	208	121	146	162
12	161	248	136	b115	96	102	558	835	173	104	135	142
13	150	260	142	131	107	97	600	760	166	120	74	113
14	159	256	144	90	b105	101	579	712	211	50	67	67
15	151	233	126	122	*98	95	558	666	229	126	65	89
16	148	253	126	b117	96	80	556	622	219	110	58	141
17	144	245	108	b120	97	41	579	689	225	129	61	189
18	136	253	152	b127	50	66	689	760	223	128	20	141
19	142	222	134	b123	92	67	760	885	213	138	132	142
20	129	205	149	b125	90	67	810	935	203	136	90	145
21	135	170	141	96	80	60	810	935	176	138	95	95
22	127	152	145	139	b85	76	785	885	170	140	129	17
23	149	130	144	b115	114	76	712	860	156	134	131	57
24	132	132	113	b135	89	123	666	785	161	144	119	110
25	134	129	126	b147	50	119	663	689	166	143	86	120
26	159	125	148	144	144	74	689	600	165	133	143	107
27	172	136	145	133	108	89	636	558	168	132	137	105
28	166	125	149	108	91	94	785	526	167	70	84	105
29	173	126	155	b147	95	82	885	400	167	107	69	69
30	191	91	159	b135	-	57	g988	189	161	108	57	124
31	237	-	115	99	-	114	-	343	-	135	58	-

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
g Discharge computed from graph based on daily outside gage reading and floodmarks.

Discharge, in second-feet, of Clyde River at Newport, Vt., 1939-41--Continued

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	137	68	177	450	146	124	127	169	333	147	172	59
2	144	95	171	449	123	111	122	174	329	130	144	97
3	160	125	165	428	147	139	124	232	300	129	112	111
4	140	136	157	390	150	113	131	217	265	150	150	99
5	85	139	130	350	145	100	155	206	230	140	162	103
6	114	146	150	289	140	98	157	199	201	87	137	72
7	158	279	156	240	147	94	156	201	183	191	120	33
8	122	334	131	200	138	105	155	196	172	147	120	126
9	116	318	164	180	90	80	365	193	166	135	97	94
10	88	290	164	170	178	115	500	181	164	128	55	112
11	109	273	158	155	130	127	592	168	157	148	99	73
12	112	299	*156	90	65	116	662	174	146	108	82	53
13	84	328	157	155	105	130	705	161	155	50	79	43
14	130	345	157	150	110	145	818	159	153	85	78	43
15	137	451	144	130	135	143	938	157	118	89	84	102
16	102	504	172	150	150	118	1,170	161	115	110	89	163
17	100	505	171	150	160	143	1,330	173	94	125	37	163
18	122	483	166	153	141	143	1,330	157	86	125	80	142
19	135	456	125	113	152	143	1,240	164	92	134	87	126
20	129	422	94	150	*139	*137	1,120	159	129	116	89	100
21	137	386	122	170	143	138	1,020	160	148	159	96	53
22	118	345	93	136	139	147	889	159	138	162	114	103
23	135	313	162	132	110	118	772	155	193	176	86	78
24	139	279	161	105	145	146	662	154	189	162	36	78
25	143	253	116	120	141	138	614	143	145	189	120	74
26	143	247	152	115	140	133	541	170	150	142	114	85
27	109	238	149	145	135	142	483	172	200	85	99	82
28	113	214	156	140	132	143	433	164	176	102	91	36
29	64	194	106	140	-	134	414	170	50	84	93	118
30	77	187	155	160	-	98	483	187	113	107	78	58
31	86	-	409	150	-	129	-	309	-	153	60	-

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 5, 6, Jan. 7-17, 20, 21, 24-31, Feb. 5, 6, 12-17, 27, Mar. 5-10, 13.

Monthly discharge, in second-feet, 1939-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1939	4,908	237	122	158	1.11	1.29
November	7,617	420	91	254	1.79	1.99
December	4,404	185	82	142	1.00	1.15
Calendar year 1939	97,109	2,060	67	266	1.87	25.44
January 1940	3,749	148	62	121	.852	.98
February	2,671	144	50	92.1	.649	.70
March	2,373	158	41	92.7	.653	.75
April	16,391	988	129	546	3.85	4.29
May	32,244	2,680	189	1,040	7.32	8.44
June	6,368	321	76	212	1.49	1.67
July	4,283	195	50	138	.972	1.12
August	3,131	150	20	101	.711	.82
September	3,209	193	17	107	.754	.84
Water year 1939-40	91,848	2,680	17	251	1.77	24.04
October 1940	3,688	160	64	119	.838	.97
November	8,652	505	68	288	2.03	2.27
December	4,846	409	93	156	1.10	1.27
Calendar year 1940	92,105	2,680	17	252	1.77	24.12
January 1941	6,055	450	90	195	1.37	1.59
February	3,776	178	65	135	.951	.99
March	3,890	147	80	125	.880	1.02
April	18,208	1,330	122	607	4.27	4.77
May	5,544	309	143	179	1.26	1.45
June	5,090	333	50	170	1.20	1.33
July	3,995	191	50	129	.908	1.05
August	3,060	172	36	98.7	.695	.80
September	2,679	163	33	89.3	.629	.70
Water year 1940-41	69,483	1,330	33	190	1.34	18.21

Note.- Discharge in second-feet per square mile and run-off in inches may not represent natural flow because of regulation.

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made at the points in the St. Lawrence River Basin indicated in the following table. These include measurements made in the St. Lawrence River Basin at points other than regular gaging stations during the water years 1932, 1933, 1937, 1939, and 1940 but not previously published. Results of other miscellaneous measurements made during these years have been published in previous water-supply papers.

Miscellaneous discharge measurements in St. Lawrence River Basin during the water years 1932, 1933, 1937, 1939, 1940, and 1941

Streams tributary to Lake Michigan

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
1940				
Aug. 26	Grays Creek spillway.	Grays Creek.....	Germfask, Mich.....	2.20
Sept.18	....do.....	....do.....	....do.....	a19.6
18	....do.....	....do.....	....do.....	b41.6
18	....do.....	....do.....	....do.....	c79.4
Oct. 25	....do.....	....do.....	....do.....	4.61
23	Grays Creek.....	Manistique River.	....do.....	10.2
Nov. 20	....do.....	....do.....	....do.....	20.4
Dec. 18	....do.....	....do.....	....do.....	5.31
1941				
Jan. 9	....do.....	....do.....	....do.....	18.3
Feb. 14	....do.....	....do.....	....do.....	21.9
Mar. 10	....do.....	....do.....	....do.....	13.0
Apr. 12	....do.....	....do.....	....do.....	151
15	....do.....	....do.....	....do.....	23.5
May 5	....do.....	....do.....	....do.....	24.0
June 19	....do.....	....do.....	....do.....	2.76
Aug. 11	....do.....	....do.....	....do.....	3.28
25	....do.....	....do.....	....do.....	2.74
1940				
Oct. 23	Pine Creek.....	....do.....	....do.....	30.9
Nov. 29	....do.....	....do.....	....do.....	31.8
Dec. 18	....do.....	....do.....	....do.....	12.0
1941				
Jan. 16	....do.....	....do.....	....do.....	23.9
Feb. 18	....do.....	....do.....	....do.....	16.3
Mar. 6	....do.....	....do.....	....do.....	12.7
Apr. 12	....do.....	....do.....	....do.....	80.9
15	....do.....	....do.....	....do.....	69.7
May 5	....do.....	....do.....	....do.....	19.7
June 20	....do.....	....do.....	....do.....	9.23
Aug. 9	....do.....	....do.....	....do.....	5.13
25	....do.....	....do.....	....do.....	5.98
1940				
Oct. 23	Sand Creek.....	Pine Creek.....	....do.....	10.2
Nov. 26	....do.....	....do.....	....do.....	13.1
Dec. 18	....do.....	....do.....	....do.....	5.53
1941				
Jan. 16	....do.....	....do.....	....do.....	23.4
Feb. 18	....do.....	....do.....	....do.....	6.15
Mar. 10	....do.....	....do.....	....do.....	5.11
Apr. 12	....do.....	....do.....	....do.....	3.39
May 5	....do.....	....do.....	....do.....	24.0
June 20	....do.....	....do.....	....do.....	1.78
Aug. 9	....do.....	....do.....	....do.....	1.21
25	....do.....	....do.....	....do.....	5.13
July 7	Driggs diversion ditch.	Manistique River.	Seney, Mich.....	16.9
15	....do.....	....do.....	....do.....	48.4
1939				
May 11	Big Swan Creek..	St. Joseph River	Bronson, Mich.....	41.5
June 26	....do.....	....do.....	....do.....	21.8
1941				
July 23	Fawn River.....	....do.....	White Pigeon, Mich.....	86.8
1939				
June 28	....do.....	....do.....	Constantine, Mich.....	142
1941				
July 23	....do.....	....do.....	....do.....	99.0
23	Klinger Lake Outlet.	Fawn River.....	White Pigeon, Mich.....	10.5
1939				
June 27	Fawn River mill-race.	....do.....	Constantine, Mich.....	77.2
1940				
Aug. 13	White Pigeon River.	....do.....	White Pigeon, Mich.....	71.0
1941				
Sept.26	....do.....	....do.....	....do.....	35.4
May 2	Hickory Creek...	....do.....	Baroda, Mich.....	10.6
1940				
Aug. 9	Battle Creek....	Kalamazoo River.	Charlotte, Mich.....	4.31
July 31	Maple River.....	Grand River.....	Ovid, Mich.....	12.2
1941				
May 19	....do.....	....do.....	....do.....	26.4

a One gate open 0.3 foot.
b Both gates open 0.3 foot.
c Both gates open 0.51 foot.

Miscellaneous discharge measurements in St. Lawrence River Basin during the water years 1932, 1933, 1937, 1939, 1940, and 1941--Continued

Streams tributary to Lake Michigan--Continued

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
1940				
July 31	Alder Creek.....	Maple River.....	Ovid, Mich.....	1.45
1941				
May 19	....do.....	...do.....	....do.....	3.65
1939				
Aug. 28	Thornapple River.	Grand River.....	Hastings, Mich.....	80.4
1941				
July 2	Cedar Creek.....	Rogue River.....	Cedar Springs, Mich.....	1.19
1940				
Nov. 14	Indian Creek....	Grand River.....	Grand Rapids, Mich.....	1.92
14	Marne Creek.....	Sand Creek.....	Marne, Mich.....	11.3
14	Deer Creek.....	Grand River.....	Coopersville, Mich.....	8.33
14	Crockery Creek..	....do.....	Nunica, Mich.....	108
14	Black Creek.....	Crockery Creek...	....do.....	5.14
1941				
July 18	Darling Creek...	Brooks Creek.....	Above sewage plant, near Fremont, Mich...	2.64
18	....do.....	....do.....	Below sewage plant, near Fremont, Mich...	2.92
1933				
Jan. 20	Betsie River....	Lake Michigan....	Frankfort, Mich.....	229

Streams tributary to Lake Huron

1941				
Sept.18	Rifle River.....	Lake Huron.....	Greenwood Bridge, Mich.....	141
1932				
Feb. 4	Tobacco River...	Tittabawassee River.	Clare, Mich.....	98.5
1933				
June 24	Salt River.....	....do.....	Sanford, Mich.....	10.4
24	Chippewa River..	....do.....	Floyd, Mich.....	165
24	Pine River.....	Chippewa River...	Midland, Mich.....	78.3
1937				
Apr. 6	....do.....	....do.....	St. Louis, Mich.....	495
7	....do.....	....do.....	....do.....	498
May 18	....do.....	....do.....	....do.....	154
19	....do.....	....do.....	....do.....	216
1941				
July 7	Flint River.....	Saginaw River....	Lapeer, Mich.....	8.44

Streams tributary to Lake St. Claire

1941				
Mar. 14	Clinton River...	Lake St. Clair...	Pontiac, Mich.....	71.6
1940				
June 4	....do.....	....do.....	Rochester, Mich.....	79.9
4	Paint Creek.....	Clinton River....	....do.....	15.6
4	Stoney Creek....	....do.....	....do.....	22.1
4	Unnamed canal...	....do.....	Below sewage plant, Rochester, Mich.....	39.6

Streams tributary to Lake Erie

1941				
June 26	Raisin River....	Lake Erie.....	Adrian, Mich.....	42.0
1940				
Aug. 2	Saline River....	Raisin River.....	Saline, Mich.....	3.59
Nov. 19	Miami & Erie Canal.	Maumee River.....	Florida, Ohio.....	†18
1941				
May 21	....do.....	....do.....	....do.....	†16
June 25	....do.....	....do.....	....do.....	†20
Aug. 22	....do.....	....do.....	....do.....	†14
Sept.24	....do.....	....do.....	....do.....	†15

† Discharge obtained from rating curve.

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