UNITED STATES DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary

GEOLOGICAL SURVEY
W. C. MENDENHALL, Director

Water-Supply Paper 894

SURFACE WATER SUPPLY of the UNITED STATES 1940

PART 4
ST. LAWRENCE RIVER BASIN

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ILLSTRATION

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, 1940. 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 8,800 gaging stations in the United States and also at many gaging stations in Alaska and Hawaii. In July 1940, 4,760 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 one square mile.

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

"Control" is a term used to designate a feature below the gage that defines 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, measurements 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 mean daily gage height to these rating tables gives the mean daily discharge, from which the monthly and yearly mean discharge are computed.

For most of the gaging stations 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 except for those stations whose 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 recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. The peak discharge for the year with the time of its occurrence is given below the table of monthly discharge for some stations. Selected lower peaks are also given if the peak discharge exceeded the mean discharge for that day by more than 10 percent. This supplementary information is generally not given for stations having drainage areas of less than 10 square miles or more than 10,000 square miles.

The table of daily discharge gives, for stations equipped with nonrecording gages, the discharge in second-feet corresponding to once-daily readings of the gage or the mean of twice-daily readings. For flashy floods the mean daily 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 mean daily gage height. For stations subject to such fluctuation the mean daily gage height may not indicate the true mean daily discharge, which must be obtained by averaging the discharge for intervals of the day or by using the discharge integrator, an instrument for obtaining the mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

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 or fall in a reach of the stream as 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. The auxiliary gage, if one is used, is described under "Location." 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 occasional winter discharge measurements and gage heights, 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.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures for that month given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge and not the instantaneous 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.

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 observation of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that, in general, the daily records are accurate within 5 percent; "good," within 10 percent; "fair," within 15 percent; and "poor," within 20 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 gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected

to throw new light on data previously published, and that greater degrees of refinement in computations and records may be warranted with the increase in data and the use of improved equipment.

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 basins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.
9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. 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 in regard to 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.
Boston, Mass., 945 Post Office 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., 316 Federal 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.
South Charleston, W. Va., Armor Park School Building.
Trenton, N. J., 228 Federal Building.
Urbana, Ill., 14 Post Office Annex, Elm Street.

West of the Mississippi River:
Austin, Tex., 300 State Highway Building.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 230 Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Los Angeles, Calif., G-31 United States Post Office and Courthouse.
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., 465 Federal Office 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 1940. The data for any particular station will, in general, be found in the reports covering the years during 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.

Numbers of water-supply papers containing results of stream measurements, 1899-1940

(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

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.

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 previouely published in its water-supply papers. The following table contains a list of these reports.

State reports containing compilation of records of discharge

State	Year ending	Report	Issued by
Alabama.....	1915	Bull. 17, 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.....	1907	Bull. 16, Water powers of Georgia....	Geological Survey of Georgia.
Do.....	1920[b]	Bull. 38, Water powers of Georgia....	Do.

a Includes records of monthly discharge in second-feet per square mile for years 1912-33.
b Includes records for years 1907-18.

State reporcs containing compilation of records of discharge--Continued

State	Year ending	Report	Issued by
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.
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.
Ohio.....	1921[l]	Bull. 73, Ohio stream flow.....	Engineering Experiment Station, Ohio State University.
Do.....	1939[m]	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[n]	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	1930[o]	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	1936[p]	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[q]	Stream-flow records of Pennsylvania..	Department of Forests and Waters.
Tennessee...	1924	Bull. 34, Water resources of Tennessee.	Department of Education.
Do.....	1930[r]	Bull. 40, Surface waters of Tennessee.	Do.
Utah.....	1905	5th biennial report, State Engineer..	Office of the State Engineer.
Virginia....	1927	Bull. 31, Water resources of Virginia.	Conservation and Development 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[s]	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

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 all available records prior to 1921.
m Includes records for years 1902-39.
n Includes records for years 1914-24.
o Includes records for years 1924-30.
p Includes records for years 1930-36.
q Includes records for years 1928-32.
r Includes average weekly discharge for years 1920-30.
s 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, Utah, 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 Statee 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, California, January 1, 1934.
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 December 1937 in northern California.
847	Maximum discharges at stream-measurement stations through September 1938.
867	Hurricane 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 1939 to September 1940 by agencies other than the 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....	1926-40	State Department of Public Works, Albany, N. Y.
Clyde River.....	Clyde, N. Y.....	1924-40	Do.
Indian River.....	Theresa, N. Y.....	1934-40	Central New York Power Corporation, Syracuse, N. Y.
New York Barge Canal*.	Brewerton, N. Y.....	1925-40	State Department of Public Works, Albany, N. Y.
Oneida River.....	Caughdenoy, N. Y.....	1929-40	Oswego River Watershed Corporation, Fulton, N. Y.
Oswegatchie River, East Branch of.	Browns Falls, N. Y.....	1934-40	Central New York Power Corporation, Syracuse, N. Y.
Oswego River.....	Lower Dam, Fulton, N. Y....	1928-40	Oswego River Watershed Corporation, Fulton, N. Y.
Raquette River.....	Colton, N. Y.....	1934-40	Central New York Power Corporation, Syracuse, N. Y.
St. Regis River, West Branch of.	Parishville, N. Y.....	1934-40	Do.
Salmon River.....	Bennetts Bridge, near Altmar, N. Y.	1934-40	Do.
Saranac River.....	Kents Falls, N. Y.....	1934-40	System Properties, Inc., New York, N. Y.
Seneca River.....	Baldwinsville, N. Y.....	1928-40	Oswego River Watershed Corporation, Fulton, N. Y.
Do.....	Jacks Reef, near Baldwinsville, N. Y.	1933-40	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.

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

Illinois: Department of Public Works and Buildings; F. Lynden Smith and Chas. P. Casey, directors, through Division of Waterways, Carter Jenkins, chief engineer.

Indiana: Department of Public Works, V. M. Simmons, administrative officer.

Michigan: Michigan Stream Control Commission, P. J. Hoffmaster, chairman.

Minnesota: State Department of Conservation, Division of Drainage and Waters, W. S. Olson, director.

New York: State Department of Conservation, Lithgow Osborne, commissioner; State Department of Public Works, Arthur W. Brandt, superintendent; State Water Power and Control Commission, Lithgow Osborne, chairman; Board of Black River Regulating District, Edwin 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, Arthur J. Adams, chief engineer; and Department of Public Works, village of Lancaster, Harold J. Huber, superintendent.

Vermont: State of Vermont, George D. Aiken, Governor.

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

Financial assistance was furnished by the Corps of Engineers, U. S. Army, in the operation of 25 gaging stations, of which 4 were in Michigan, 9 in New York, 9 in Ohio, 1 in Vermont, and 2 in Wisconsin.

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

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: Corps of Engineers, U. S. Army; city of Syracuse, F. J. McArdell, city engineer; 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: Corps of Engineers, U. S. Army; 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; in Minnesota, P. R. Speer; in New York, A. W. Harrington; in Ohio, C. V. Youngquist; in Vermont, H. B. Kinnison; in upper peninsula of Michigan and Wisconsin, F. C. Christopherson.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, engineer 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 mean tide level at New York City. All water surface elevations are heights of water surface above mean tide at New York City.

Drainage area.- 263,500 square miles.

Records available.- January 1905 to September 1940 (prior to October 1935 monthly discharge only).

Average discharge - 35 years, 190,500 second-feet (not including diversions from Lakes Michigan and Erie).

Extremes.- Maximum daily discharge during year, 216,000 second-feet Nov. 8, 1939; minimum daily, 141,000 second-feet Jan. 24, corresponding to an elevation of 569.04 feet on the Buffalo gage.

1905-40: 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 of daily discharge furnished by Corps of Engineers, U. S. Army. They do not include flow diverted from Lake Michigan by Chicago Sanitary Canal and from Lake Erie by Welland Canal, in Ontario, and Black Rock and New York State Barge (old Erie) Canals, at Buffalo.

Discharge, in thousands of second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	179	189	173	189	159	151	168	186	192	203	191	194
2	177	178	178	181	159	158	164	189	192	199	190	195
3	180	177	184	184	157	159	158	188	194	198	196	196
4	184	176	182	162	157	167	176	189	194	199	196	194
5	185	178	178	177	157	168	172	187	196	198	196	195
6	192	184	181	168	159	169	174	190	191	197	196	191
7	182	188	171	148	161	166	169	184	193	198	199	190
8	186	216	184	144	159	166	174	181	194	199	192	194
9	181	178	194	160	153	167	176	187	193	198	191	194
10	193	197	179	164	158	168	174	186	193	198	191	205
11	189	189	173	164	165	163	174	189	194	188	190	197
12	204	181	176	169	165	155	182	187	195	191	193	196
13	197	178	185	163	156	154	180	190	200	194	192	190
14	191	174	178	174	155	170	183	187	194	197	186	188
15	184	181	179	174	157	175	178	190	203	201	187	190
16	188	192	183	177	158	167	178	191	194	196	189	187
17	180	178	184	157	159	162	174	193	195	195	190	188
18	180	182	171	145	149	166	192	189	200	196	194	188
19	193	168	176	161	150	169	180	188	201	198	194	188
20	175	152	190	161	157	170	163	186	200	200	192	191
21	190	169	213	166	160	168	174	186	197	200	190	192
22	194	174	190	158	163	174	186	189	194	199	198	189
23	182	174	172	151	167	164	186	191	191	199	189	188
24	173	164	183	141	166	164	185	186	208	200	188	191
25	179	165	186	169	162	164	186	189	213	201	187	187
26	178	174	172	158	161	166	187	190	201	201	183	190
27	185	179	147	158	160	165	186	190	201	199	182	192
28	197	181	174	159	162	162	184	192	202	196	186	189
29	179	179	181	156	163	167	186	189	209	198	191	186
30	181	179	198	155	-	166	186	190	207	202	192	183
31	178	-	208	158	-	170	-	190	-	196	193	-

Month	Thousands of second-foot-days	Thousands of second-feet			Per square mile†	Run-off in inches
		Maximum	Minimum	Mean		
October	5,736	204	173	185	0.702	0.81
November	5,374	216	152	179	.679	.76
December	5,623	213	147	181	.687	.79
Calendar year 1939	67,688	216	147	185	.702	9.55
January	5,051	189	141	163	.619	.71
February	4,614	167	149	159	.603	.65
March	5,120	175	151	165	.626	.72
April	5,335	192	158	178	.676	.75
May	5,839	193	181	188	.713	.82
June	5,931	213	191	198	.751	.84
July	6,134	203	188	198	.751	.87
August	5,924	199	182	191	.725	.84
September	5,738	205	183	191	.725	.81
Water year 1939-40	66,419	216	141	181	.687	9.37

† 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 mean tide level at New York City; reference point of the Oswego gage is 251.90 feet above mean tide level at New York City. All water surface elevations are heights of water surface above mean tide at New York City.

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

Records available.- January 1919 to September 1940 (prior to October 1935, monthly discharge only).

Average discharge.- 21 years, 218,000 second-feet (does not include diversion from Lake Michigan).

Extremes.- Maximum daily discharge during year, 239,000 second-feet June 29, corresponding to an elevation of 245.12 feet on the Ogdensburg gage; minimum daily, 172,700 second-feet Mar. 3, corresponding to an elevation of 242.08 feet on the Ogdensburg gage.
1919-40: 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 of daily discharge furnished by Corps of Engineers, U. S. Army. They 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.

Discharge, in thousands of second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	209	196	199	189	177	191	219	230	237	230	221
2	209	205	197	196	186	173	190	220	232	236	230	222
3	209	205	198	195	190	173	189	223	233	234	232	223
4	212	204	200	193	186	183	195	221	232	235	232	221
5	212	202	197	192	186	180	197	224	233	235	233	219
6	215	207	198	193	186	187	201	223	231	235	234	218
7	212	206	207	190	185	187	198	227	229	233	230	219
8	213	215	197	189	188	187	200	223	230	234	230	218
9	213	204	198	190	185	185	206	223	228	234	230	219
10	216	209	195	190	184	186	205	224	230	234	228	228
11	212	214	190	189	182	184	206	223	231	228	229	225
12	217	203	192	192	180	179	208	222	230	229	230	221
13	215	202	196	190	176	173	212	222	235	233	228	221
14	222	202	195	189	178	175	218	222	231	234	227	217
15	212	200	196	198	177	189	212	219	236	235	225	218
16	217	207	199	187	180	184	211	223	232	233	227	217
17	208	200	198	180	186	183	208	227	232	233	227	220
18	208	201	196	180	185	183	219	229	235	232	227	219
19	217	197	185	180	183	185	218	222	238	232	229	218
20	208	191	197	180	184	185	207	224	237	234	225	218
21	211	192	208	181	185	186	206	224	233	234	224	220
22	210	195	200	193	185	184	212	224	233	234	226	218
23	208	197	197	188	188	180	217	225	234	233	224	218
24	207	189	200	187	185	175	218	224	229	234	222	220
25	206	188	196	190	185	180	219	225	237	234	224	216
26	204	196	194	188	182	188	219	227	235	236	220	219
27	209	198	191	191	184	182	219	229	238	234	218	223
28	211	199	193	190	184	184	220	230	235	233	217	219
29	206	199	194	186	186	184	219	227	239	233	221	215
30	210	199	197	186	-	186	221	228	238	236	221	214
31	205	-	202	189	-	189	-	226	-	233	221	-

Month	Thousands of second-foot-days	Thousands of second-feet			Per square mile†	Run-off in inches
		Maximum	Minimum	Mean		
October	6,545	222	204	211	0.708	0.82
November	6,035	215	188	201	.674	.75
December	6,099	208	185	197	.661	.76
Calendar year 1939	78,433	247	169	215	.721	9.79
January	5,861	199	180	189	.634	.73
February	5,340	190	176	184	.617	.67
March	5,656	189	173	182	.611	.70
April	6,261	221	189	209	.701	.78
May	6,949	230	219	224	.751	.87
June	6,996	239	228	233	.782	.87
July	7,244	237	228	234	.785	.90
August	7,021	234	217	226	.758	.87
September	6,584	228	214	219	.735	.82
Water year 1939-40	76,591	239	173	209	.701	9.54

† Expressed in second-feet.

Pigeon River at International Bridge, Minn.

(International gaging station)

Location.- Wire-weight gage, lat. 48°01', long. 89°43', in sec. 20, T. 64 N., R. 6 E., fourth principal meridian, on International Bridge, 9.3 miles upstream from mouth. Datum of gage is 889.82 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 590 square miles.

Records available.- April 1924 to September 1940 in reports of Geological Survey. 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.- 17 years (1923-40), 469 second-feet.

Extremes.- Maximum discharge observed during year, 3,630 second-feet May 20; minimum daily discharge, 50 second-feet Jan. 15-21, 26; minimum gage height observed, 0.37 foot Sept. 30.

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

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

Cooperation.- Gage-height record furnished by Corps of Engineers, U. S. Army. This is one of the international gaging stations operated by the United States under agreement with Canada.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	133	90	60	60	70	85	1,500	c920	589	263	89
2	112	130	85	65	60	70	100	1,170	c870	556	242	89
3	144	130	85	65	60	70	130	1,020	2,040	539	230	89
4	157	130	90	*65	60	70	130	780	2,210	523	219	81
5	157	122	90	65	60	70	120	735	2,390	491	211	79
6	236	120	95	65	60	70	200	650	2,120	459	203	76
7	232	117	95	65	60	70	260	611	2,210	443	192	77
8	216	112	95	60	60	65	240	1,340	2,000	427	185	79
9	209	110	98	60	55	65	240	1,070	1,650	411	170	87
10	213	108	98	60	60	65	220	690	1,510	398	166	89
11	216	105	100	60	60	65	240	1,120	1,370	382	157	87
12	224	90	98	60	55	70	260	433	1,250	363	157	87
13	228	100	95	60	55	70	280	690	1,100	347	154	89
14	209	*120	95	55	55	65	320	825	1,020	335	150	89
15	205	110	95	50	60	65	360	970	945	326	152	85
16	183	100	90	50	60	65	400	1,630	995	308	154	80
17	173	95	90	50	*70	75	460	2,050	1,130	293	161	76
18	163	95	90	50	70	70	500	2,000	1,070	278	161	73
19	160	90	90	50	70	70	500	2,000	1,020	281	163	73
20	157	90	85	50	65	70	*550	3,130	945	314	160	71
21	153	85	85	*50	65	*65	600	3,330	870	353	147	71
22	150	87	85	55	65	65	650	2,570	820	335	136	69
23	147	89	85	55	60	60	600	2,120	795	308	133	69
24	144	91	80	55	65	60	550	1,720	795	290	128	71
25	136	91	80	55	65	60	500	1,580	770	257	125	69
26	136	90	75	50	65	60	460	1,800	720	227	117	68
27	133	85	75	55	70	60	433	1,960	661	211	110	62
28	133	85	70	55	70	60	532	1,760	642	214	100	59
29	133	85	65	55	70	65	1,070	c1,310	642	248	94	56
30	130	85	60	55	-	70	2,050	c895	642	308	94	55
31	130	-	60	55	-	75	-	c995	-	299	91	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,261	236	112	170	0.288	0.33
November	3,080	133	85	103	.175	.19
December	2,669	100	60	86.1	.146	.17
Calendar year 1939	173,309	4,600	65	475	.805	10.91
January	1,760	65	50	56.8	.096	.11
February	1,810	70	55	62.4	.106	.11
March	2,070	75	60	66.8	.113	.13
April	13,040	2,050	85	435	.737	.82
May	44,454	3,330	433	1,434	2.43	2.80
June	36,122	2,390	642	1,204	2.04	2.28
July	11,113	589	211	358	.607	.70
August	4,925	263	91	159	.269	.31
September	2,294	89	55	76.5	.130	.14
Water year 1939-40	128,598	3,330	50	351	.595	8.09

* Winter discharge measurement made on this day.

c Stage-discharge relation affected by logs; discharge computed on basis of one discharge measurement, gage heights, and observer's notes.

Note.- Stage-discharge relation affected by ice Nov. 12-21, Nov. 26 to Dec. 8, Dec. 11, Dec. 13 to Apr. 24, May 1. Discharge for May 18 to Aug. 18, Sept. 4-8, obtained at site at Middle Falls, 5¾ miles downstream.

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 new 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 1940.
Extremes.- Maximum discharge during year, 481 second-feet Apr. 30; maximum gage height, 4.52 feet Jan. 2 (affected by ice); minimum discharge, 2.3 second-feet Dec. 3 (gage height, 1.75 feet).
1912-17, 1928-40: 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, that of Dec. 3, 1939.
Revision.- Minimum discharge for water year 1939 has been revised to 16 second-feet Oct. 15, 30, superseding figure published in Water-Supply Paper 874.
Remarks.- Records good except those for periods of ice effect, which are fair.
Revisions.- Revised figures of discharge for the water years 1938 and 1939, superseding those published in Water-Supply Papers 854 and 874, are given herein.

Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)
1937-38		1937-38		1938-39		1938-39	
Sept.14	44	Sept.27	20	Oct. 8	22	Oct. 21	19
15	38	28	20	9	22	22	20
16	35	29	19	10	20	23	20
17	36	30	19	11	20	24	20
18	35			12	19	25	20
19	32	1938-39		13	18	26	20
20	29	Oct. 1	19	14	18	27	18
21	27	2	20	15	16	28	18
22	26	3	19	16	18	29	17
23	26	4	20	17	23	30	16
24	23	5	18	18	22	31	18
25	22	6	18	19	21		
26	22	7	19	20	20		

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.0	6.2	2.6	30	3.2	121	3.8	359
2.2	10.1	2.8	48	3.4	199	4.0	440
2.4	18	3.0	77	3.6	279	4.1	481

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	44	34	7.5	11	12	15	311	211	136	64	75
2	36	28	20	8.5	12	12	16	231	203	129	64	60
3	35	34	22	8.5	12	12	15	199	307	125	61	51
4	37	36	26	9	12	12	16	183	391	116	54	43
5	125	38	28	*9.5	12	13	17	171	444	108	49	38
6	136	38	28	9.5	12	13	19	171	399	98	45	35
7	94	40	30	9.5	12	13	20	167	436	96	41	35
8	77	36	30	9.5	11	13	22	159	371	96	40	35
9	69	36	30	10	10	13	28	151	311	92	71	33
10	83	30	30	10	10	13	32	148	271	88	66	30
11	83	32	30	10	9.5	12	*30	140	247	92	56	27
12	74	34	29	11	9.5	12	28	140	239	88	49	25
13	67	38	13	11	9.5	12	26	144	227	79	46	23
14	60	40	22	11	9	12	24	179	215	74	46	22
15	56	34	26	11	9	12	32	247	191	72	51	22
16	50	34	26	11	*9	12	38	251	183	67	69	22
17	47	34	28	10	9.5	12	46	247	307	64	72	30
18	46	34	28	9.5	10	13	56	243	351	67	58	44
19	46	34	28	9.5	10	13	70	319	271	71	48	44
20	44	34	26	*9.5	11	13	*81	391	231	88	42	45
21	45	34	18	9.3	11	13	90	331	215	86	41	38
22	44	34	20	9.3	12	*12	110	291	207	76	39	32
23	43	34	20	9.7	12	12	90	259	191	67	36	31
24	42	34	19	10	12	12	95	247	199	61	33	37
25	41	36	19	11	11	12	110	247	183	60	39	36
26	41	37	19	11	11	12	100	295	171	56	64	32
27	42	34	17	11	11	11	95	291	159	52	58	29
28	40	34	13	11	11	11	100	271	163	65	48	27
29	42	34	10	11	12	12	223	255	175	132	52	26
30	42	34	8.5	11	-	13	448	243	155	98	57	25
31	42	-	7.5	11	-	14	-	227	-	77	83	-

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Oct. 15, 16, Oct. 31 to Nov. 18, Nov. 20-24, Nov. 27 to Dec. 9, Dec. 13 to Jan. 18, Feb. 7-18, Mar. 30 to Apr. 19, Apr. 21-28.

Monthly discharge, in second-feet, of Poplar River at Lutsen, Minn., 1937-40

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1937	1,775	177	28	57.3	0.415	0.48
November	1,636	150	33	54.5	.395	.44
December	909	34	23	29.3	.212	.24
Calendar year 1937	41,897	1,250	10	115	.833	11.28
January 1938	965	35	26	31.1	.225	.26
February	868	34	26	31.0	.225	.23
March	2,943	600	23	94.9	.688	.79
April	11,005	885	224	367	2.66	2.97
May	10,524	615	194	339	2.46	2.84
June	4,858	254	73	162	1.17	1.30
July	1,809	105	32	58.4	.423	.49
August	2,381	479	24	76.8	.557	.64
September	1,121	60	19	37.4	.271	.30
Water year 1937-38	40,794	885	19	112	.812	10.98
October 1938	598	23	16	19.3	.140	.16
November	1,638	140	22	54.6	.396	.44
December	1,242	42	37	40.1	.291	.34
Calendar year 1938	39,974	885	16	110	.797	10.77
January 1939	1,344	48	38	43.4	.314	.36
February	1,149	46	38	41.0	.297	.31
March	1,469	70	38	47.4	.343	.40
April	6,977	985	65	233	1.69	1.89
May	18,559	1,040	304	599	4.34	5.00
June	8,453	458	180	282	2.04	2.28
July	6,388	465	67	206	1.49	1.72
August	3,527	425	48	107	.775	.89
September	1,784	153	32	59.5	.431	.48
Water year 1938-39	52,928	1,040	16	145	1.05	14.27
October 1939	1,763	136	35	56.9	.412	.48
November	1,053	44	28	35.1	.254	.28
December	705.0	34	7.5	22.7	.164	.19
Calendar year 1939	52,971	1,040	7.5	145	1.05	14.27
January 1940	310.3	11	7.5	10.0	.072	.08
February	313.0	12	9	10.8	.078	.08
March	383	14	11	12.4	.090	.10
April	2,091	448	15	69.7	.505	.56
May	7,149	391	140	231	1.67	1.93
June	7,624	444	155	254	1.84	2.05
July	2,875	136	52	86.3	.625	.72
August	1,642	83	33	53.0	.384	.44
September	1,052	75	22	35.1	.254	.28
Water year 1939-40	26,760.3	448	7.5	73.1	.530	7.19

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., 250 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 1940.

Extremes.- Maximum discharge during year, 1,570 second-feet May 19 (gage height, 4.54 feet); minimum daily, 0.3 second-foot Jan. 5, 6; minimum gage height, 1.54 feet Jan. 6.

1928-29, 1930-40: Maximum discharge, 9,350 second-feet Aug. 9, 1939 (gage height, 8.11 feet); minimum daily, that of Jan. 5, 6, 1940.

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

Revisions.- Revised figures of discharge for water year 1939, superseding those published in Water Supply Paper 874 are given herein.

Discharge, in second-feet, 1938-40

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	17	24	a20	22	22	220	2,200	246	610	16	183
2	11	20	26	a20	23	21	220	1,640	208	398	17	140
3	11	38	26	a20	25	21	200	1,380	198	372	17	110
4	11	82	26	a22	25	21	220	1,330	176	1,080	13	98
5	11	140	27	a22	25	21	220	1,230	153	750	12	83
6	11	127	25	*a22	25	21	220	1,080	127	486	12	75
7	12	99	27	22	*25	21	200	945	149	317	11	72
8	12	79	27	22	25	21	180	795	133	252	32	90
9	12	64	26	23	24	22	180	708	108	198	6,550	80
10	12	54	26	24	24	22	200	564	92	168	3,490	70
11	12	47	25	26	24	22	206	421	81	133	2,020	60
12	13	54	24	26	24	22	193	317	72	108	1,270	59
13	12	84	24	26	24	22	206	246	62	99	797	57
14	12	46	22	26	24	20	245	208	61	77	452	51
15	12	42	21	24	a24	20	355	198	151	62	290	45
16	16	42	22	24	a24	*a20	427	180	176	52	198	38
17	33	44	23	26	23	a20	370	163	235	46	158	33
18	28	44	23	24	23	a20	308	153	218	41	120	31
19	24	42	22	24	24	a20	298	143	185	41	93	29
20	22	36	22	24	24	a22	370	278	146	36	105	25
21	20	30	23	24	23	a24	472	587	115	33	97	23
22	21	30	23	24	22	a32	700	587	328	30	79	22
23	20	28	24	24	23	a40	876	440	371	27	79	22
24	19	26	24	24	23	a75	999	324	257	24	98	21
25	19	26	24	24	22	*a75	1,490	332	336	22	92	21
26	18	26	23	24	22	a85	1,980	356	416	25	72	21
27	18	24	22	24	22	240	1,890	610	506	22	60	22
28	17	24	22	23	22	170	1,870	666	356	20	52	33
29	17	*24	20	22	-	160	2,200	518	376	18	46	51
30	17	24	a20	22	-	180	2,810	395	722	17	99	44
31	17	-	a20	22	-	220	-	317	-	17	234	-

Peak discharge.- Apr. 25 (11:30 p.m.) 2,350 sec.-ft.; May 1 (12:30 a.m.) 2,810 sec.-ft.; Aug. 9 (2 p.m.) 9,350 sec.-ft.

e Winter discharge measurement made on this day.

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

Note.- Stage-discharge relation affected by ice Nov. 14-18, Nov. 21 to Dec. 4, Jan. 10-25, Feb. 9-14, Mar. 12 to Apr. 10.

Discharge, in second-feet, of Baptism River near Beaver Bay, Minn., 1938-40--Continued

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	51	34	3.8	3.0	4.4	10	1,120	300	76	131	64
2	34	42	32	2.0	3.2	4.4	11	732	285	65	98	55
3	33	42	30	1.1	3.4	4.6	11	502	552	66	80	48
4	33	42	28	.6	3.6	4.8	11	385	954	62	61	39
5	130	42	30	.4	3.6	5.0	13	331	1,210	51	44	31
6	186	40	32	.4	3.4	5.5	15	310	1,040	41	34	25
7	176	42	34	.6	3.2	5.5	18	280	890	36	26	23
8	146	36	28	1.3	3.0	5.5	46	257	732	35	22	21
9	128	38	32	1.7	3.2	5.0	85	244	544	57	19	20
10	146	28	28	1.9	3.4	5.0	*75	244	422	52	16	19
11	140	36	28	2.6	3.6	5.0	65	230	349	56	15	17
12	131	38	28	2.2	3.6	5.0	55	222	280	52	14	16
13	120	*36	26	2.0	3.6	5.0	50	230	230	41	14	15
14	110	32	24	1.9	3.6	5.5	44	388	198	36	13	14
15	93	32	24	1.7	4.0	5.5	70	826	169	35	12	13
16	82	33	24	1.5	*4.2	5.5	85	826	146	30	14	12
17	73	33	26	1.7	4.4	6.0	120	874	272	28	13	24
18	68	30	28	2.2	4.6	6.0	240	1,060	379	44	12	54
19	64	30	28	2.6	4.8	6.5	*320	1,340	320	45	12	61
20	60	35	26	*2.7	5.0	*6.5	300	1,390	244	90	11	62
21	59	33	22	2.6	5.0	6.5	320	1,180	194	183	11	55
22	60	30	20	2.6	4.8	6.5	340	922	194	183	13	44
23	56	36	20	2.6	4.6	6.5	300	657	180	140	12	68
24	54	37	19	2.4	4.6	6.0	300	502	176	100	11	155
25	51	39	17	2.2	4.4	6.0	280	438	155	82	14	143
26	54	40	16	2.0	4.0	5.5	280	554	131	62	21	112
27	59	36	15	2.0	4.2	5.5	300	554	105	46	21	92
28	52	36	14	2.4	4.2	5.5	360	576	97	78	22	75
29	52	32	13	2.6	4.2	6.5	600	512	96	290	31	65
30	50	34	11	2.8	-	8.0	1,430	408	85	257	39	57
31	50	-	6.5	3.0	-	9.0	-	355	-	186	70	-

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 2-15, 18, 19, 22, Nov. 27 to Jan. 19, Jan. 22 to Apr. 29.

Monthly discharge, in second-feet, 1938-40

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1938	501	33	11	16.2	0.119	0.14
November	1,463	140	17	48.8	.359	.40
December	733	27	20	23.6	.174	.20
Calendar year 1938	61,870.4	2,500	9.4	170	.125	16.93
January 1939	724	26	20	23.4	.172	.20
February	660	25	22	23.6	.174	.18
March	1,722	240	20	55.5	.408	.47
April	20,325	2,810	180	678	4.99	5.57
May	19,311	2,200	143	623	4.68	5.28
June	6,760	722	61	225	1.65	1.84
July	5,578	1,080	17	180	1.32	1.52
August	16,681	6,550	11	538	3.96	4.56
September	1,709	183	21	57.0	.419	.47
Water year 1938-39	76,167	6,550	11	209	1.54	20.83
October 1939	2,588	186	33	83.5	.614	.71
November	1,091	51	28	36.4	.268	.30
December	743.5	34	6.5	24.0	.176	.20
Calendar year 1939	77,892.5	6,550	6.5	213	1.57	21.30
January 1940	62.1	3.8	.4	2.00	.015	.02
February	114.4	5.0	3.0	3.94	.029	.03
March	177.7	9.0	4.4	5.73	.042	.05
April	6,154	1,430	10	205	1.51	1.68
May	18,449	1,390	222	595	4.37	5.04
June	10,928	1,210	85	364	2.68	2.99
July	2,505	290	28	84.0	.618	.71
August	926	131	11	29.9	.220	.25
September	1,499	155	12	50.0	.368	.41
Water year 1939-40	45,337.7	1,430	.4	124	.912	12.39

Egge Lake near Finland, Minn.

Location.- Reference point, lat. 47°27', long. 91°13', in sec. 4, T. 57 N., R. 7 W., top of abutment of concrete dam at outlet, 3 miles northeast of Finland.
Records available.- March 1938 to September 1940 (fragmentary).
Extremes.- 1938-40: Maximum gage-height observed, -0.8 foot June 30, 1939; minimum observed, -2.4 feet Oct. 14, 20, 28, Nov. 4, 1938.
Remarks.- Stage of lake regulated by type C concrete dam (identification number 18-1) with one 5-foot bay, permitting a 2-foot control by stop logs. Measurements made from reference point which is 4.00 feet above concrete sill of dam.
Cooperation.- Readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct. 7	-1.9	July 12	-1.6	Aug. 29	-2.2
June 7	-1.1	18	-2.0	Sept. 6	-2.2
14	-1.2	26	-2.0	14	-2.3
21	-1.1	Aug. 2	-2.0	20	-2.3
28	-1.1	16	-2.2	27	-2.0
July 4	-1.5	23	-2.3		

Leppannen Lake at Finland, Minn.

Location.- Reference point, lat. 47°25', long. 91°14', in sec. 21, T. 57 N., R. 7 W., top of abutment of concrete dam at outlet, 1 mile southeast of Finland.
Records available.- March 1938 to September 1940 (fragmentary).
Extremes.- 1938-40: Maximum gage height observed, -1.0 foot May 27, 1939; minimum observed, -2.3 feet Aug. 24, Sept. 14, 1940.
Remarks.- Stage of lake regulated by type C dam (identification number 18-2) with one 5-foot bay, permitting a 2-foot control by stop logs. Measurements made from reference point which is 4.00 feet above concrete sill of dam.
Cooperation.- Readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct. 7	-1.7	June 21	-1.7	Aug. 16	-2.2
14	-1.9	28	-1.9	24	-2.3
21	-1.9	July 4	-1.9	30	-2.2
28	-1.9	12	-1.9	Sept. 6	-2.2
Nov. 4	-1.9	18	-2.0	14	-2.3
June 7	-1.3	26	-2.0	20	-2.2
14	-1.8	Aug. 2	-1.9	27	-2.1

Esquagama Lake near Biwabik, Minn.

Location.- Staff gage, lat. 47°27', long. 92°23', in sec. 4, T. 57 N., R. 16 W., on abutment of concrete dam at outlet of lake, 5 miles southwest of Biwabik.
Records available.- April 1937 to September 1940 (fragmentary).
Extremes.- 1937-40: Maximum gage height observed, slightly over 9.0 feet May 9, 1938; minimum observed, 3.20 feet June 22, 1937.
Remarks.- Stage of lake regulated by modified type C concrete dam (identification number 16-1) with twenty 5-foot bays, permitting a 4.5-foot control by stop logs. Zero of gage is at top of concrete sill of dam.
Cooperation.- Gage readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct. 7	4.90	Jan. 16	4.68	May 24	5.30	Aug. 3	5.26
13	5.08	20	4.68	June 1	4.64	10	4.80
19	5.06	Feb. 23	4.50	7	4.74	16	4.60
27	4.98	Mar. 29	4.48	14	4.50	23	†4.37
Nov. 4	4.90	Apr. 13	4.70	21	5.00	29	4.80
11	4.90	20	4.94	28	5.00	Sept. 7	4.88
16	4.88	23	4.90	July 6	4.50	13	4.68
24	4.88	28	4.76	12	4.50	21	4.66
Dec. 2	4.88	30	5.10	13	4.42	28	4.70
16	4.86	May 10	5.84	19	4.66		
27	4.84	17	4.96	27	4.66		

† Average of two readings.

Ely Lake near Eveleth, Minn.

Location.- Staff gage, lat. 47°27', long. 92°27', in SW¼ sec. 2, T. 57 N., R. 17 W., on abutment of dam at outlet 4 miles east of Eveleth. Datum of gage is 1,373.23 feet above mean sea level (general adjustment of 1912).
Records available.- November 1939 to September 1940 (fragmentary).
Extremes.- Maximum gage height observed, 3.40 feet May 4, 8; minimum observed 2.70 feet Dec. 8.
Remarks.- Stage of lake regulated by type C dam (identification number 16-5) with three 5-foot bays and one culvert, permitting a 3-foot control by stop logs. Zero of gage is 0.02 foot below top of concrete sill of dam.
Cooperation.- Gage readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Nov.	4	2.80	May	17	3.04	June	28	3.10	Aug.	10	3.04
	16	2.80		20	3.00	July	6	3.08		16	3.10
Dec.	8	2.70		24	3.00		12	3.10		24	2.98
Apr.	19	3.16		30	3.16		20	3.14		31	3.00
	23	3.16	June	8	3.30		27	3.08	Sept.	5	2.98
May	4	3.40		15	3.30	Aug.	2	3.13		13	2.98
	8	3.40		21	3.14		3	3.13		24	3.00

Perch Lake near Sawyer, Minn.

Location.- Reference point, lat. 46°41', long. 92°42', in sec. 36, T. 49 N., R. 19 W., sill of concrete dam 3 miles northwest of Sawyer.
Records available.- February 1938 to September 1940 (fragmentary).
Extremes.- 1938-40: Maximum gage height observed, 4.15 feet Apr. 25, 1938; minimum observed, 0.90 foot Feb. 26, 1938.
Remarks.- Stage of lake regulated by type C dam (identification number 8-4) with four 5-foot bays, permitting a 4-foot control by stop logs.
Cooperation.- Readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct.	6	3.42	Feb.	11	3.17	May	21	3.48	July	24	3.12
	15	3.12		28	3.17		31	3.50	Aug.	8	2.92
	24	3.08	Mar.	18	3.17	June	11	3.49		21	2.92
Dec.	10	3.17		29	3.17		20	3.56	Sept.	2	2.92
	21	3.29	Apr.	7	3.54		27	3.58			
Jan.	11	3.17		17	3.52	July	10	3.18			
	31	3.17	May	7	3.52		17	3.12			

Pequaywan Lake near Brimson, Minn.

Location.- Staff gage, lat. 47°10', long. 91°55', in sec. 18, T. 54 N., R. 12 W., on abutment of dam at outlet, 7½ miles southwest of Brimson.
Records available.- November 1938 to September 1940 (fragmentary).
Extremes.- 1938-40: Maximum gage height observed, 2.55 feet Aug. 15, 1939; minimum observed, 0.72 foot June 14, 1940.
Remarks.- Stage of lake is regulated by type C dam (identification number 17-2) with four 5-foot bays, permitting a 2-foot control by stop logs. Zero of gage is at top of concrete sill of dam.
Cooperation.- Gage readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct.	5	1.52	Dec.	28	1.45	Apr.	28	1.10	July	10	0.84
	12	1.42	Jan.	11	1.42	May	3	1.40		18	.84
	19	1.36		22	1.40		9	1.10		25	.87
	26	1.45	Feb.	2	1.21		16	1.20	Aug.	2	.86
Nov.	2	1.50		9	1.17		23	1.54		15	.80
	9	1.48		22	1.32		30	1.30		22	.79
	16	1.55		26	1.42	June	1	1.05	Sept.	2	.82
	23	1.53	Mar.	6	1.21		7	.83		12	.78
Dec.	2	1.55		17	1.12		14	.72		20	.92
	8	1.54	Apr.	10	1.20		30	.86			
	14	1.50		18	1.20	July	4	.86			

Smith Lake near Brimson, Minn.

Location.- Staff gage, lat. 47°09', long. 91°55', in SE¼ sec. 24, T. 54 N., R. 13 W., on abutment of concrete dam at outlet 9 miles southwest of Brimson.
Records available.- October 1939 to September 1940 (fragmentary).
Extremes.- Maximum gage height observed during year, 4.20 feet May 23; minimum observed, 3.20 feet May 9.
Remarks.- Stage of lake regulated by type C dam with three 5-foot bays and one double culvert (identification number 17-3), permitting a 6-foot control by stop logs. Zero of gage is at top of concrete sill of dam.
Cooperation.- Gage readings furnished by Minnesota Department of Conservation, Division of Drainage & Waters.

Gage height, in feet, 1939-40

Oct.	19	3.60	Jan.	22	3.60	May	3	3.85	July	18	3.60
	26	3.60	Feb.	2	3.60		9	3.20		25	3.68
Nov.	2	3.65		9	3.58		16	3.60	Aug.	2	3.70
	9	3.67		22	3.51		23	4.20		15	3.60
	16	3.68		26	3.53		30	3.74		22	3.56
	23	3.68	Mar.	6	3.68	June	1	3.82	Sept.	2	3.60
Dec.	2	3.68		17	3.64		7	3.60		12	3.56
	8	3.68	Apr.	10	3.68		14	3.50		20	3.68
	14	3.68		16	3.54		30	3.64		26	3.70
	28	3.68		23	3.80	July	4	3.62			
Jan.	11	3.64		28	3.58		10	3.80			

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 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 1,197.50 feet May 26; minimum observed, 1,196.36 feet Oct. 7, 9.
1937-40: Maximum elevation observed, 1,197.87 feet May 8, 1938; minimum observed, 1,196.04 feet Aug. 24, Oct. 3, 1936.

Remarks.- Lake has natural outlet.

Elevations, in feet, 1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-				-	7.10	-	6.84	-	-
2	6.42	6.42	-				-	-	7.40	-	-	6.52
3	-	-	-				-	-	-	-	-	-
4	6.40	6.42	6.42				-	-	-	-	-	-
5	-	-	-				-	-	-	-	6.60	-
6	-	6.42	-				-	7.08	-	-	-	-
7	6.36	-	-				-	-	-	-	-	-
8	-	-	-				-	-	-	6.68	-	-
9	6.36	6.42	-				-	-	7.20	-	-	6.56
10	-	-	-				-	-	-	-	-	-
11	6.56	6.42	-				-	-	-	-	-	-
12	-	-	-				-	-	-	-	6.54	-
13	-	-	6.46				-	-	-	-	-	-
14	6.54	-	-				-	-	-	-	-	-
15	-	6.40	-				-	-	-	6.60	-	-
16	-	-	-				-	-	6.94	-	-	6.54
17	-	-	-				-	-	-	-	-	-
18	6.48	6.40	-				-	-	-	-	-	-
19	-	-	-				-	7.42	-	-	6.60	-
20	-	-	-				-	-	-	-	-	-
21	6.48	-	-				6.98	-	-	-	-	-
22	-	6.42	-				-	-	-	6.62	-	-
23	-	-	6.48				-	-	6.92	-	-	6.54
24	6.44	-	-				-	-	-	-	-	-
25	-	6.42	-				-	-	-	-	-	-
26	-	-	-				-	7.50	-	-	6.56	-
27	-	-	-				-	-	-	-	-	-
28	6.44	-	-				-	-	-	-	-	-
29	-	-	-				7.08	-	-	6.62	-	-
30	-	6.42	-				-	-	6.84	-	-	6.53
31	6.44	-	-				-	-	-	-	-	-

Note.- Add 1,190 feet to obtain elevations 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 N., R. 49 W., 2 miles upstream from mouth and 3½ miles north of Saxon.
Drainage area.- 281 square miles.
Records available.- September 1938 to September 1940.
Extremes.- Maximum discharge during year, 5,800 second-feet May 20 (gage height, 6.24 feet), from rating curve extended above 2,500 second-feet by logarithmic plotting; minimum, 2 second-feet Oct. 8 (gage height, 1.02 feet).
1938-40 (regulated): Maximum discharge, that of May 20, 1940; (maximum discharge for water year 1938-39 has been revised to 4,940 second-feet Apr. 26); maximum gage height, 6.48 feet Mar. 26, 1939 (ice jam); minimum discharge, 2 second-feet Sept. 21, Oct. 8, 1939.
Remarks.- Records good except those above 2,500 second-feet, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Diurnal fluctuation caused by Saxon Falls power plant, 1½ miles upstream.
Revisions.- Revised figures of discharge for Sept. 12-19, 1938, and for the water year 1938-39, superseding those published in Water-Supply Paper 874, are given herein.

Rating table, Sept. 12, 1938, to Sept. 30, 1940, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

1.4	16	2.6	343	4.0	1,450
1.6	36	3.0	563	4.5	2,140
1.8	67	3.2	697	5.0	2,950
2.0	115	3.4	847	5.5	3,950
2.3	215	3.7	1,110	6.0	5,220

Discharge, in second-feet, 1938-40

Sept. 12-19, 1938

Sept.	12	80	Sept. 16	69
	13	76	17	64
	14	53	18	90
	15	42	19	387

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a41	338	165	60	114	58	2,370	1,330	726	520	35	44
2	a41	316	178	60	108	58	2,290	1,090	1,000	408	37	42
3	a41	330	178	60	104	57	2,060	920	1,140	320	49	43
4	a42	662	185	60	100	57	2,060	801	969	316	47	37
5	a42	2,220	171	62	100	56	2,860	712	770	348	50	37
6	a42	2,530	158	90	98	55	2,370	676	545	302	49	37
7	a43	2,290	168	100	96	55	1,770	770	608	268	64	40
8	a44	1,700	175	90	93	54	1,350	778	863	281	67	39
9	a45	1,280	171	100	90	54	1,110	697	770	251	110	39
10	a45	1,050	196	110	85	56	944	582	712	208	92	42
11	a46	928	178	130	82	58	879	474	2,140	200	105	49
12	a47	847	a155	180	78	66	719	382	2,610	168	89	43
13	50	770	a132	290	76	74	697	320	2,140	110	71	39
14	50	596	a109	290	73	70	832	285	1,770	107	60	37
15	62	532	*85	260	70	62	953	247	1,450	132	53	37
16	57	456	81	230	68	60	1,320	215	1,440	99	49	39
17	64	372	79	215	66	64	1,250	200	1,700	80	40	28
18	67	363	77	200	65	90	977	182	1,350	78	44	18
19	71	325	75	190	64	150	1,030	168	1,640	76	46	28
20	67	298	73	180	63	250	1,330	185	1,700	74	30	33
21	74	276	72	170	63	350	1,510	719	1,450	58	49	24
22	89	208	71	162	62	520	1,510	944	1,510	60	44	25
23	138	251	70	155	62	620	2,140	734	1,320	67	42	26
24	171	281	68	150	61	720	2,780	676	1,110	65	52	24
25	255	289	65	146	60	820	3,620	1,640	863	65	57	26
26	418	270	63	*144	60	940	4,300	1,840	676	58	64	26
27	532	250	62	140	60	1,050	3,620	2,220	596	50	53	26
28	545	220	61	137	59	1,160	2,700	2,700	502	39	47	27
29	508	185	61	130	-	1,190	1,990	2,060	508	52	46	27
30	445	189	60	124	-	1,410	1,570	1,450	589	29	43	27
31	382	-	60	118	-	1,920	-	994	-	29	47	-

Peak discharge.- Nov. 5 (7 p.m.) 2,780 sec.-ft.; Apr. 5 (9 p.m.) 3,130 sec.-ft.; Apr. 26 (6 a.m.) 4,940 sec.-ft.; May 27 (11 p.m.) 2,950 sec.-ft.; June 11 (11 p.m.) 3,220 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge Oct. 1-12 computed on basis of weather records and records for Pine River near Florence; Dec. 12-14 interpolated.
Note.- Stage-discharge relation affected by ice Nov. 26-28, Dec. 15 to Mar. 26.

Discharge, in second-feet, of Montreal River near Saxon, Wis., 1938-40--Continued

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	74	57	64	41	49	105	994	520	175	204	298
2	25	85	76	65	45	49	125	928	451	112	338	259
3	27	78	99	70	46	51	150	824	403	124	338	211
4	25	76	112	65	46	53	190	847	603	97	259	147
5	27	80	127	62	46	55	260	755	1,120	82	227	141
6	35	78	102	60	46	58	400	649	824	71	178	102
7	53	74	94	63	46	53	500	563	839	65	132	107
8	36	85	141	54	47	55	748	491	888	55	107	94
9	42	78	127	59	47	53	741	454	778	57	144	94
10	58	74	115	57	47	52	847	382	557	50	80	118
11	53	85	121	58	40	51	734	353	445	58	71	135
12	45	132	85	59	43	49	662	338	348	57	76	154
13	55	97	85	60	40	47	669	298	289	50	94	144
14	74	89	85	50	32	45	712	312	239	a48	84	127
15	69	64	86	56	45	47	1,010	614	178	a47	94	107
16	62	62	91	47	47	47	1,640	1,150	175	a47	124	99
17	64	67	99	45	48	47	2,140	1,340	147	a42	223	87
18	80	74	97	47	53	60	2,140	1,170	135	a44	316	78
19	57	71	80	45	47	*56	2,450	1,330	200	a43	348	97
20	52	67	40	44	51	57	2,700	4,050	182	a110	325	▶115
21	52	85	65	44	58	56	2,860	4,180	138	a220	307	102
22	50	67	88	44	56	56	2,780	3,040	118	a230	353	78
23	50	57	105	44	*53	52	2,450	1,840	175	a210	334	78
24	64	53	96	44	49	53	2,060	1,180	219	a190	302	115
25	55	43	83	43	49	54	1,700	953	397	a1,200	302	127
26	46	63	93	*43	50	48	1,370	1,570	387	871	312	121
27	53	66	96	43	51	51	1,110	1,390	289	656	307	107
28	62	89	90	45	49	55	953	1,280	231	520	307	85
29	62	64	83	48	51	65	879	1,070	204	392	334	80
30	58	88	76	45	-	80	953	863	200	285	320	78
31	74	-	68	38	-	117	-	656	-	211	281	-

Peak discharge.- May 20 (7:30 p.m.) 5,800 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of Saxon Falls power plant output and weather records.
Note.- Stage-discharge relation affected by ice Dec. 14 to Apr. 7

Monthly discharge, in second-feet, 1938-40

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1938	4,564	545	41	147	0.523	0.60
November	20,622	2,530	185	687	2.44	2.72
December	3,522	196	60	114	.406	.47
Calendar year	-	-	-	-	-	-
January 1939	4,533	290	60	146	.520	.60
February	2,180	114	59	77.9	.277	.29
March	12,204	1,920	54	394	1.40	1.61
April	54,911	4,300	697	1,830	6.51	7.26
May	26,991	2,700	168	871	3.10	3.57
June	35,167	2,610	502	1,172	4.17	4.65
July	4,918	520	29	159	.566	.65
August	1,731	110	30	55.8	.199	.23
September	1,009	49	18	33.6	.120	.13
Water year 1938-39	172,352	4,300	18	472	1.68	22.78
October 1939	1,567	74	22	50.5	.180	.21
November	2,245	132	43	74.8	.266	.30
December	2,862	141	40	92.3	.328	.38
Calendar year 1939	150,318	4,300	18	412	1.47	19.88
January 1940	1,611	70	38	52.0	.185	.21
February	1,369	58	32	47.2	.168	.18
March	1,718	117	43	55.4	.197	.23
April	36,036	2,860	103	1,201	4.27	4.76
May	35,854	4,180	298	1,156	4.11	4.74
June	11,679	1,120	118	389	1.38	1.54
July	6,419	1,200	42	207	.737	.85
August	7,201	353	64	232	.826	.95
September	3,685	298	78	123	.438	.49
Water year 1939-40	112,226	4,180	22	307	1.09	14.84

Tenderfoot Lake near Land O'Lakes, Wis.

Location.- Staff gage, lat 46°13', long. 89°31', in lot 1, SE¼SE¼ sec. 8, T. 43 N., R. 8 E., 20 miles west of village of Land O'Lakes.

Drainage area.- 19 square miles.

Records available.- June 1938 to September 1940 (fragmentary).

Extremes.- Maximum gage height observed during year, 2.68 feet May 27, 28; minimum, 1.54 feet July 19, Aug. 10.
1938-40: Maximum gage height observed, 2.72 feet Apr. 29, 1939; minimum, 1.54 feet July 19, Aug. 10, 1940.

Gage height, in feet, water year October 1939 to September 1940

Day	Apr.	May	June	July	Aug.	Day	Apr.	May	June	July	Aug.
1	-	2.64	2.48	-	-	16	1.84	2.40	1.93	-	-
2	-	2.66	2.42	-	-	17	1.90	2.38	2.04	-	1.60
3	-	2.63	2.51	-	1.70	18	1.94	2.36	2.04	-	-
4	-	2.60	2.58	-	-	19	2.00	2.48	2.00	1.54	-
5	-	2.60	2.6_	-	-	20	2.06	2.56	1.94	-	-
6	-	2.58	2.60	1.72	-	21	2.14	2.56	1.88	-	-
7	-	2.53	2.56	-	-	22	2.24	2.54	1.86	-	-
8	-	2.50	2.52	-	-	23	2.30	2.52	-	-	-
9	-	2.46	2.48	-	-	24	2.36	2.52	-	-	1.58
10	-	2.42	2.42	-	1.54	25	2.42	2.60	-	-	-
11	-	2.37	2.34	-	-	26	2.46	2.64	-	-	-
12	-	2.33	2.28	-	-	27	2.48	2.68	-	-	-
13	-	2.32	2.20	-	-	28	2.48	2.68	-	-	-
14	-	2.38	2.13	-	-	29	2.54	2.66	1.90	-	-
15	1.78	2.40	2.07	-	-	30	2.60	2.60	-	-	-
						31	-	2.54	-	-	1.68

Palmer Lake near Land O'Lakes, Wis.

Location.- Staff gage, lat. 46°12', long. 89°29', in lot 6, SE¼SW¼ sec. 15, T. 43 N., R. 8 E., 17 miles west of village of Land O'Lakes.

Drainage area.- 15 square miles.

Records available.- June 1938 to September 1940 (fragmentary).

Extremes.- Maximum gage height observed during year, 2.80 feet Oct. 13; minimum, 1.56 feet July 13.
1938-40: Maximum gage height observed, 3:00 feet Sept. 30, 1939; minimum observed, 1.56 feet July 13, 1940.

Gage height, in feet, 1939-40

Oct. 6	2.38	June 1	2.54	July 13	1.56	Aug. 31	1.62
13	2.80	8	2.42	20	1.68	Sept. 7	1.60
Apr. 30	2.64	15	2.10	27	1.64	14	1.60
May 4	2.70	22	2.20	Aug. 3	1.66	21	1.82
11	2.40	29	1.96	10	1.64	28	1.90
18	2.60	July 2	1.68	17	1.60		
25	2.65	6	1.82	24	1.64		

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 1940 (fragmentary).

Extremes.- Maximum gage height observed during year, 6.24 feet May 21; minimum, 4.40 feet Apr. 13.
1938-40: Maximum gage height observed, that of May 21, 1940; minimum observed, that of Apr. 13, 1940.

Gage height, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.72		4.60				-	-	6.00	5.96	5.78	5.84
2	5.70						-	-	6.00	5.92	5.84	5.84
3	5.74						-	-	6.00	5.90	5.84	5.84
4	5.72						-	-	6.06	5.90	5.84	5.84
5	5.72	5.00					-	-	6.08	5.88	5.84	5.88
6	5.72						4.80	5.60	6.10	5.86	5.84	5.88
7	5.72						-	5.68	6.10	5.82	5.82	5.88
8	-						-	5.70	6.10	5.80	5.82	5.86
9	-						-	5.74	6.04	5.80	5.82	-
10	-						-	5.78	6.02	5.80	5.80	-
11	-						-	5.80	6.00	5.86	5.82	-
12	-						-	5.78	5.98	5.86	5.82	-
13	-						4.40	5.82	5.96	5.84	5.88	-
14	-						-	5.90	5.92	5.82	5.86	5.84
15	-						-	5.94	5.92	5.82	5.88	-
16	-						-	6.02	5.88	5.82	5.88	-
17	-						-	6.04	5.88	5.84	5.88	-
18	-						-	6.06	5.90	5.86	5.86	-
19	-						-	6.10	5.94	5.84	5.84	-
20	-						-	6.22	5.90	5.96	5.86	-
21	-						-	6.24	5.66	5.98	5.86	5.80
22	-						4.70	6.22	5.86	5.94	5.86	-
23	-						-	6.20	5.86	5.92	5.88	-
24	-						-	6.16	5.96	5.90	5.88	-
25	-						4.80	6.10	5.98	5.92	5.90	-
26	-						-	6.14	5.98	5.90	5.90	-
27	-						-	6.16	5.92	5.88	5.88	-
28	-						-	6.16	5.96	5.84	5.86	5.84
29	-						-	6.14	5.96	5.82	5.84	5.82
30	-						5.23	6.10	5.96	5.80	5.84	-
31	-						-	6.04	-	5.80	5.84	-

Mamie Lake near Land O'Lakes, Wis.

Location.- Staff gage, lat. 46°11', long. 89°24', in lot 4, NE¼SW¼ sec. 20, T. 43 N., R. 9 E., 12 miles west of village of Land O'Lakes.

Drainage area.- 18 square miles.

Records available.- June 1938 to September 1940 (fragmentary).

Gage height, in feet, 1940

Apr.	25	4.77	May	5	5.57	May	16	6.02
	26	4.77		9	5.73		25	6.13
	30	5.22		14	5.87		30	6.05

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 1½ miles upstream from Grays Creek.

Drainage area.- 341 square miles.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge during year, 1,200 second-feet Apr. 25 (gage height, 5.33 feet); minimum, 250 second-feet Feb. 1, 2.
1938-40: 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 except those for periods of ice effect, which are fair.

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.8	281	3.0	573	5.0	1,110
2.0	326	3.5	705	5.5	1,260
2.3	396	4.0	840		
2.6	471	4.5	980		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	396	446	338	320	250	348	362	980	638	651	324	274
2	396	458	372	320	250	345	362	1,000	612	599	314	274
3	372	446	421	320	255	340	372	1,030	586	547	317	274
4	362	446	421	320	260	340	384	1,000	586	508	338	270
5	349	434	396	320	270	340	384	1,000	586	484	338	263
6	338	421	396	320	270	340	408	952	586	471	349	259
7	338	408	384	320	275	340	446	896	612	446	338	259
8	349	408	a380	320	275	335	471	840	705	434	321	266
9	396	421	a385	320	275	330	496	786	786	434	310	268
10	434	446	a385	320	275	330	521	759	786	408	301	270
11	458	458	a375	320	270	325	521	732	786	396	296	279
12	458	458	a365	315	270	325	521	692	786	384	292	281
13	446	446	362	310	275	325	521	678	759	384	292	281
14	446	434	349	295	285	325	521	651	705	372	290	281
15	434	421	300	280	305	365	521	664	678	372	283	279
16	408	421	320	275	320	365	560	705	625	384	277	272
17	396	408	372	270	*325	360	612	732	586	372	272	263
18	396	396	362	260	340	350	638	732	560	362	279	263
19	384	396	362	*258	360	338	732	786	547	362	294	281
20	372	372	362	255	380	349	868	868	508	396	299	321
21	372	362	349	255	370	338	924	868	496	421	290	326
22	396	362	360	255	365	326	980	868	484	408	283	319
23	408	362	375	255	365	325	1,060	868	484	384	283	303
24	396	362	370	255	360	325	1,140	840	508	384	281	299
25	384	362	365	255	355	325	1,200	786	705	372	279	317
26	384	349	360	255	350	325	1,170	759	759	372	281	321
27	372	349	355	255	350	*326	1,090	759	759	362	283	314
28	384	338	350	255	350	326	1,030	759	759	349	277	299
29	396	338	340	255	350	319	980	732	732	349	274	294
30	434	338	330	255	-	338	980	705	705	349	274	292
31	446	-	320	255	-	362	-	664	-	338	274	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	12,300	458	338	397	1.16	1.34
November	12,066	458	338	402	1.18	1.32
December	11,281	421	300	364	1.07	1.23
Calendar year 1939	177,730	1,910	277	487	1.43	19.40
January	8,843	320	255	285	.836	.96
February	9,000	380	250	310	.909	.98
March	10,450	365	319	337	.988	1.14
April	20,775	1,200	362	692	2.03	2.26
May	25,091	1,030	651	809	2.37	2.73
June	19,414	786	484	647	1.90	2.12
July	12,854	651	338	415	1.22	1.41
August	9,203	349	272	297	.871	1.00
September	8,562	326	259	285	.836	.93
Water year 1939-40	159,839	1,200	250	437	1.28	17.42

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and records for station near Blaney.
Note.- Stage-discharge relation affected by ice Dec. 15, 16, Dec. 22 to Mar. 18, Mar. 23-27.

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 1940.

Extremes.- Maximum discharge during year, 4,160 second-feet Apr. 24 (gage height, 17.55 feet); minimum, 376 second-feet Sept. 7 (gage height, 6.48 feet).
1938-40: Maximum discharge observed, 9,300 second-feet Apr. 1, 1938 (gage height, 19.42 feet); minimum observed, 345 second-feet Aug. 28-30, 1938 (gage height, 6.11 feet).

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

Cooperation.- Nine discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-15)

6.5	376	10	1,140	15	2,860
7.0	460	11	1,450	16	3,260
7.5	562	12	1,800	17	3,710
8	672	13	2,140	18	4,600
9	897	14	2,490		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	584	650	499	510	380	500	620	2,860	1,290	1,230	489	407
2	584	650	551	500	380	500	640	2,820	1,170	1,090	470	407
3	551	650	628	500	365	500	670	2,900	1,090	970	470	407
4	519	650	650	500	390	500	720	2,860	1,040	874	509	391
5	499	628	628	500	400	500	770	2,780	1,040	805	606	384
6	479	628	628	500	400	490	840	2,600	995	760	628	376
7	470	606	606	490	400	490	930	2,420	1,020	716	584	376
8	470	606	606	490	400	490	1,050	2,210	1,140	694	530	384
9	509	606	628	490	400	485	1,200	2,010	1,350	672	499	384
10	584	650	628	480	400	480	1,250	1,830	1,420	650	470	399
11	628	694	606	480	390	480	1,300	1,630	1,450	628	451	399
12	650	694	584	*470	390	475	1,300	1,520	1,450	628	442	407
13	628	694	584	470	390	470	1,250	1,420	1,350	606	433	407
14	628	672	540	460	405	470	1,200	1,320	1,260	584	424	407
15	606	650	450	450	440	475	*1,130	1,290	1,200	584	424	407
16	584	650	480	440	460	525	1,320	1,420	1,140	584	407	399
17	562	628	550	430	460	515	1,660	1,520	1,070	562	399	384
18	540	628	580	415	500	505	1,970	1,520	995	530	407	384
19	540	606	584	405	510	505	2,420	1,560	921	530	442	391
20	519	584	584	395	520	500	2,980	1,900	828	628	442	407
21	519	562	580	390	*520	*490	3,440	2,140	782	716	442	433
22	540	551	580	390	520	490	3,770	2,210	782	672	424	424
23	584	540	570	390	520	480	3,990	2,250	760	628	416	407
24	584	530	570	385	515	450	4,070	2,140	760	584	416	407
25	562	530	560	380	515	460	3,990	2,010	1,140	584	407	416
26	540	519	550	380	510	460	3,840	1,870	1,630	562	407	424
27	540	509	540	380	505	480	3,660	1,770	1,660	551	407	424
28	540	499	540	380	500	500	3,480	1,730	1,560	530	407	416
29	562	499	530	380	500	540	3,180	1,630	1,520	530	399	399
30	606	469	520	380	-	570	2,940	1,490	1,390	540	391	399
31	650	-	510	380	-	590	-	1,390	-	519	399	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17,361	650	470	560	0.795	0.92
November	18,052	694	489	602	.865	.95
December	17,644	650	450	569	.808	.93
Calendar year 1939	328,342	6,850	395	890	1.26	17.35
January	13,590	510	380	438	.622	.72
February	13,025	520	380	449	.638	.69
March	15,365	590	450	496	.705	.81
April	61,580	4,070	620	2,053	2.92	3.26
May	61,020	2,900	1,290	1,966	2.80	3.23
June	35,203	1,660	760	1,173	1.67	1.86
July	20,741	1,230	519	669	.950	1.10
August	14,041	628	391	453	.643	.74
September	12,056	433	376	402	.571	.64
Water year 1939-40	299,678	4,070	376	819	1.16	15.86

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 14-18, Dec. 21 to Apr. 15.

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 mouth of West Branch of Manistique River and 6 miles northeast of Manistique.

Drainage area.- 1,100 square miles.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge during year, 6,610 second-feet Apr. 26 (gage height, 10.72 feet); minimum, 547 second-feet Sept. 8 (gage height, 1.79 feet).
1938-40: Maximum discharge observed, 9,720 second-feet Apr. 1, 1938 (gage height, 12.70 feet, site and datum then in use); minimum observed, 411 second-feet Aug. 30, 1938 (gage height, 1.32 feet, site and datum then in use).

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

Cooperation.- Eight discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	800	1,000	780	780	580	720	960	5,590	2,200	2,200	800	622
2	820	1,020	840	770	560	720	1,010	5,590	2,040	1,930	760	642
3	780	1,020	940	770	580	720	1,050	5,590	1,830	1,680	740	622
4	740	1,020	1,000	770	590	720	1,110	5,700	1,730	1,480	740	603
5	720	1,000	1,020	770	600	720	1,200	5,590	1,680	1,350	860	584
6	680	1,000	1,000	770	610	720	1,300	5,390	1,630	1,270	920	566
7	661	980	980	760	610	710	1,450	5,000	1,630	1,180	880	547
8	642	980	960	760	610	710	1,600	4,550	1,680	1,140	820	547
9	661	980	980	750	610	700	1,800	4,050	1,880	1,060	760	566
10	780	1,020	980	750	610	700	2,000	3,730	2,040	1,060	720	603
11	880	1,100	980	750	610	690	2,170	3,250	2,090	1,000	680	622
12	940	1,100	960	740	605	680	2,250	2,890	2,090	980	661	642
13	960	1,140	940	730	600	660	2,250	2,630	2,040	940	642	642
14	940	1,100	840	720	590	650	2,220	2,440	1,880	900	622	661
15	920	1,060	*710	710	*590	640	2,160	2,320	1,830	880	622	642
16	940	1,060	740	690	600	700	*2,120	2,440	1,730	900	603	622
17	900	1,020	840	680	630	700	2,440	2,630	1,630	880	584	603
18	860	1,020	880	660	680	700	2,830	2,700	1,530	840	584	584
19	840	1,000	900	640	720	700	3,490	2,760	1,440	820	642	566
20	820	960	920	640	740	700	4,210	3,030	1,310	940	661	584
21	820	940	900	630	750	*700	4,910	3,490	1,220	1,140	661	622
22	820	900	880	630	750	690	5,390	3,730	1,140	1,140	642	622
23	860	880	860	620	740	690	5,700	3,890	1,140	1,100	622	603
24	880	860	850	610	740	640	6,610	3,810	1,140	1,020	603	603
25	880	840	840	*605	740	630	6,610	3,570	1,480	980	603	603
26	840	820	830	600	730	660	6,610	3,250	2,150	940	603	603
27	840	820	820	600	720	690	6,610	3,030	2,440	900	603	622
28	840	800	810	600	720	720	6,330	2,830	2,500	860	584	603
29	860	780	800	590	720	760	6,060	2,760	2,500	860	566	584
30	920	780	790	580	-	790	5,810	2,570	2,380	860	566	584
31	980	-	780	580	-	880	-	2,380	-	840	566	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	25,824	980	642	833	0.757	0.87
November	29,000	1,140	780	967	.879	.98
December	27,350	1,020	710	882	.802	.92
Calendar year 1939	537,081	9,680	530	1,471	1.34	18.15
January	21,255	780	580	686	.624	.72
February	18,955	750	580	654	.595	.64
March	21,810	880	630	704	.640	.74
April	100,260	6,610	960	3,342	3.04	3.39
May	113,180	5,700	2,320	3,651	3.32	3.83
June	54,000	2,500	1,140	1,800	1.64	1.83
July	34,070	2,200	820	1,099	1.00	1.15
August	20,920	920	566	675	.614	.71
September	18,119	661	547	604	.549	.61
Water year 1939-40	484,743	6,610	547	1,324	1.20	16.39

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 15-18, Dec. 22 to Apr. 16.

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., 4½ miles west of Seney.

Drainage area.- 13 square miles.

Records available.- May 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 280 second-feet Apr. 23 (gage height, 2.80 feet); minimum observed, 1.8 second-feet Oct. 4.
1938-40: 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. Gage read once daily except during Nov. 3 to Mar. 28, when it was read about thrice weekly.

Cooperation.- Eight discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	8.7	4.0	4.6	2.8	3.1	6.4	63	21	15	3.8	3.8
2	2.2	9.3	a8.0	4.6	2.8	a3.1	7.6	122	18	11	4.6	3.8
3	2.7	a9.3	all	4.6	2.8	a3.1	8.7	105	21	10	4.2	3.3
4	1.8	9.3	9.3	4.6	2.9	3.1	8.7	88	18	9.2	3.3	2.9
5	2.2	a8.8	a8.5	4.6	3.0	a3.3	8.7	70	18	8.1	3.8	2.9
6	2.2	8.2	7.6	4.6	3.1	3.5	8.7	62	16	8.1	4.2	3.3
7	2.2	a8.8	a7.3	4.5	3.1	3.5	11	50	32	7.5	3.3	2.9
8	3.1	9.3	7.0	4.5	3.1	3.4	11	41	85	7.5	3.3	2.9
9	4.0	all	a7.4	4.4	3.1	3.3	12	35	69	7.0	3.3	3.3
10	4.4	12	a7.8	4.4	3.1	3.3	12	29	74	5.5	2.9	3.3
11	4.4	all	8.2	4.4	3.1	3.3	12	24	52	6.4	2.9	2.9
12	4.9	all	a7.9	4.4	3.1	3.3	13	22	33	6.0	3.3	2.4
13	4.9	9.9	7.6	4.2	3.1	3.3	15	21	25	6.4	3.3	2.4
14	5.3	a9.6	a7.0	4.0	3.1	3.4	14	20	18	7.0	2.9	2.9
15	a5.3	9.3	6.4	3.8	3.1	3.5	15	33	15	5.5	2.9	2.9
16	5.3	a8.0	5.3	3.5	3.2	3.5	29	48	7.5	6.0	2.4	2.4
17	4.9	8.7	a5.8	3.2	3.2	3.5	33	42	12	5.1	2.9	2.4
18	4.4	a8.2	6.4	2.8	3.3	3.5	64	42	13	5.1	3.8	2.4
19	4.4	a7.6	a6.4	2.6	*3.5	a3.5	165	41	11	8.1	2.9	2.4
20	4.0	7.0	6.4	2.6	3.4	3.5	233	117	9.8	7.0	2.9	2.4
21	4.4	a6.2	6.4	2.6	3.3	3.4	204	100	10	7.0	2.9	2.4
22	5.3	5.3	6.4	2.7	3.2	3.3	264	90	9.2	7.0	2.9	2.4
23	5.3	a5.1	6.3	2.8	3.1	3.3	280	64	9.8	6.0	2.4	2.9
24	4.9	4.9	6.0	2.8	3.1	3.3	233	49	15	6.0	2.9	2.4
25	4.9	a4.8	5.7	2.8	3.1	3.3	178	42	74	6.0	2.9	2.4
26	4.4	a4.6	5.3	*2.8	3.1	3.4	134	43	69	6.0	3.3	2.4
27	4.9	4.4	5.1	2.9	3.1	3.5	99	50	50	6.0	2.9	2.9
28	5.9	a4.0	4.9	2.9	3.1	a3.8	76	49	42	6.0	2.4	2.9
29	a7.0	3.5	4.7	2.9	3.1	4.4	51	38	32	5.5	2.9	2.4
30	8.2	a3.8	4.6	2.9	-	6.4	70	31	20	5.1	2.9	2.4
31	8.7	-	4.6	2.9	-	8.2	-	25	-	4.6	2.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	139.2	8.7	1.8	4.49		
November	231.6	12	3.5	7.72		
December	205.3	11	4.0	6.62		
Calendar year 1939	7,553.0	572	.8	20.7		
January	111.9	4.6	2.6	3.61		
February	90.1	3.5	2.8	3.11		
March	113.3	8.2	3.1	3.65		
April	2,276.8	280	6.4	75.9		
May	1,656	122	20	53.4		
June	899.3	74	7.5	30.0		
July	216.7	15	4.6	6.99		
August	98.2	4.6	2.4	3.17		
September	83.4	3.8	2.4	2.78		
Water year 1939-40	6,121.8	280	1.8	16.7		

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 21-25, Dec. 27 to Jan. 11, Jan. 13-21, Jan. 23 to Feb. 6, Feb. 8-22, Feb. 24-29, Mar. 7-17, 21-26.

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 1940.

Extremes.- Maximum discharge observed during year, 18.5 second-feet Oct. 11 (gage height, 0.88 foot); no flow Dec. 4-6, Jan. 13 to Sept. 30.
1939-40: 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 to Sept. 30, 1940.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Gage read about thrice weekly. Water diverted to Goose Pen Pond 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.- Results of two discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.3	e.5	2.9	1.3								
2	5.3	7.3	a2.0	a1.5								
3	7.3	a7.3	a1.0	1.7								
4	6.1	7.3	0	a1.5								
5	5.3	a7.3	a0	1.3								
6	4.5	7.3	0	a1.2								
7	4.1	7.3	a6.8	a1.0								
8	7.7	6.9	13.7	.9								
9	11.3	a6.9	a12.4	a.7								
10	12.9	6.9	a11.0	.5								
11	18.5	a6.5	9.7	a.3								
12	3.3	a6.1	a8.9	.1								
13	3.7	5.7	8.1	0								
14	3.7	a5.9	a7.9	0								
15	a3.5	6.1	7.7	0								
16	3.3	a5.9	2.1	0								
17	3.7	5.7	a2.1	0								
18	7.3	a5.8	2.1	0								
19	7.3	a6.0	a1.9	0								
20	7.3	6.1	1.7	0								
21	6.9	a6.1	a1.0	0								
22	6.9	6.1	2.1	0								
23	6.9	a6.1	a1.9	0								
24	1.7	6.1	1.7	0								
25	1.7	a5.2	a1.7	0								
26	1.7	a4.2	a1.7	0								
27	a1.7	3.3	1.7	0								
28	1.7	a3.3	a1.7	0								
29	a5.1	3.3	1.7	0								
30	8.5	3.1	a1.6	0								
31	8.9	-	a1.4	0								

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	189.1	18.5	1.7	6.1		
November	179.6	8.5	3.1	6.0		
December	121.1	13.7	0	3.9		
Calendar year	-	-	-	-		
January	12.0	1.7	0	.39		
February	0	-	-	0		
March	0	-	-	0		
April	0	-	-	0		
May	0	-	-	0		
June	0	-	-	0		
July	0	-	-	0		
August	0	-	-	0		
September	0	-	-	0		
Water year 1939-40	501.8	18.5	0	1.37		

a No gage-height record; discharge interpolated.
Note.- No diversion into Goose Pen Pond and no flow through outlet Jan. 12 to Sept. 30.

Grays Creek near Germfask, Mich.

Location.- Staff gage, lat. 46°13'45", long. 86°57'20", in NE¼ sec. 8, T. 44 N., R. 13 W., half a mile upstream from mouth, 1 mile downstream from "A" pool, and 1 mile southwest of Germfask.

Drainage area.- 36 square miles.

Records available.- April 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 229 second-feet Apr. 24, 26 (gage height, 6.04 feet); minimum observed, 1 second-foot Oct. 17-20.
1938-40: Maximum discharge observed, 706 second-feet Apr. 26, 1939 (gage height, 9.04 feet); minimum observed, 0.69 second-foot Sept. 21, 1939 (discharge measurement).

Remarks.- Records poor. Diversion to Goose Pen Pond from Grays Creek about 1 mile upstream from gage was discontinued Jan. 13, 1940. Gage read once daily except during Oct. 27 to Mar. 28, when it was read about thrice weekly. Flow modified by storage in and occasional gate changes at outlet of "A" pool.

Cooperation.- Nine discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	4	16	11	9	†75	15	23	20	12	6
2	2	2	6	16	11	9	54	54	23	19	11	6
3	2	2	8	16	10	9	58	65	24	19	12	5
4	2	2	8	15	10	9	85	62	20	19	10	5
5	2	2	7	15	10	9	118	90	26	18	9	4
6	2	†2	7	15	9	†9	47	85	31	18	8	4
7	2	2	10	14	9	10	54	90	39	18	8	5
8	6	3	20	†14	9	10	106	85	31	18	7	5
9	7	4	22	14	9	10	85	85	31	16	6	5
10	7	7	24	14	8	10	62	22	28	16	6	6
11	6	7	25	13	8	10	112	47	75	16	6	6
12	5	6	25	13	8	10	†45	60	43	16	5	6
13	4	6	24	13	8	10	80	58	47	16	5	6
14	3	6	24	13	8	10	95	18	65	16	5	5
15	2	6	†23	12	†8	11	70	17	100	17	5	5
16	2	6	†23	12	8	12	90	23	100	16	7	†5
17	1	5	23	11	8	13	112	22	100	3	7	5
18	1	5	24	11	8	12	137	24	90	2	6	4
19	†1	5	26	10	8	11	165	23	12	2	6	4
20	1	4	27	10	8	11	151	85	11	9	8	4
21	2	4	27	10	8	11	158	56	18	8	8	4
22	3	4	26	11	8	11	151	124	30	6	7	4
23	2	3	25	11	8	11	139	31	4	5	6	4
24	2	3	25	11	8	11	229	144	5	5	5	5
25	2	3	24	11	8	11	220	124	58	4	5	5
26	2	3	23	11	8	11	229	58	50	4	†5	6
27	2	3	22	11	9	11	181	60	26	10	4	6
28	2	3	21	11	9	13	151	18	30	9	4	6
29	2	3	20	11	9	18	20	12	26	14	4	5
30	2	3	18	11	-	25	15	18	22	15	5	5
31	2	-	16	11	-	50	-	22	-	14	5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	83	7	1	2.7		
November	116	7	2	3.9		
December	607	27	4	19.6		
Calendar year 1939	13,854.3	706	.7	38.0		
January	387	16	10	12.5		
February	251	11	8	8.7		
March	387	50	9	12.5		
April	3,344	229	15	111		
May	1,697	144	12	54.7		
June	1,188	100	4	39.6		
July	388	20	2	12.5		
August	207	12	4	6.7		
September	151	6	4	5.0		
Water year 1939-40	8,806	229	1	24.1		

† Discharge measurement made on this day.
Note.- Discharge for periods of backwater from beaver dams, Oct. 1 to Apr. 16, Aug. 3 to Sept. 30, computed on basis of ten discharge measurements, gage heights, weather records, observer's notes, and records for Walsh Creek near Seney.

Pine Creek near Germfask, Mich.

Location.- Cantilever chain gage, lat. 46°13'45", long. 86°58'25", in NE¼ sec. 7, T. 44 N., R. 13 W., about three-quarters of a mile upstream from mouth and 2½ miles southwest of Germfask.

Drainage area.- 11 square miles.

Records available.- April 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 409 second-feet Apr. 23 (gage height, 10.12 feet); minimum observed, 8 second-feet Oct. 1, Jan. 9-11.
1938-40: Maximum discharge observed, 665 second-feet Apr. 1, 1938 (gage height, 12.88 feet); minimum observed, 2 second-feet Aug. 18, 1938 (gage height, 2.52 feet).

Remarks.- Records good except those for periods of backwater from beaver dams, which are poor. Operation of refuge pools above station affects natural flow. Gage read once daily except during period Oct. 27 to Mar. 28, when it was read about thrice weekly.

Cooperation.- Nine discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8	19	18	12	9	15	15	97	53	47	21	14
2	10	19	18	11	9	15	16	118	49	40	19	14
3	11	19	20	10	10	15	17	113	47	35	23	13
4	11	19	22	10	11	15	18	113	45	32	22	13
5	10	19	22	9	12	15	20	113	45	29	21	12
6	10	†20	21	9	13	†15	21	102	40	26	23	13
7	10	20	22	9	13	15	22	83	51	23	22	13
8	12	21	23	9	13	15	24	74	57	22	23	14
9	14	22	24	8	12	15	†25	65	74	21	22	15
10	15	24	25	†8	13	14	26	57	74	20	19	17
11	15	24	25	8	13	14	26	51	78	18	18	17
12	15	23	24	9	14	13	26	49	78	16	17	18
13	16	23	22	9	15	13	26	45	74	14	17	18
14	17	23	†20	9	15	13	26	44	65	12	19	18
15	17	23	20	9	15	13	27	51	65	14	19	†18
16	16	22	20	9	†15	12	53	57	53	13	18	18
17	†16	22	21	9	15	12	87	53	53	12	19	18
18	15	22	22	9	15	11	107	53	45	12	19	19
19	15	21	23	9	15	11	157	53	40	12	24	20
20	15	20	24	9	15	11	242	87	34	22	23	21
21	15	20	25	9	15	11	283	83	32	24	23	21
22	17	19	25	9	15	11	365	97	30	22	23	22
23	16	19	24	9	15	11	409	97	34	19	22	22
24	14	18	21	9	15	11	391	87	32	20	22	23
25	14	18	19	9	15	11	365	74	92	22	20	23
26	14	18	18	9	15	11	299	57	78	24	19	23
27	14	18	16	9	15	12	242	65	74	24	18	23
28	15	18	15	9	15	12	151	65	65	23	17	22
29	17	18	14	9	15	13	113	61	61	26	16	22
30	18	18	13	9	-	15	113	57	53	26	14	22
31	18	-	12	9	-	14	-	57	-	24	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	440	18	8	14.2		
November	609	24	18	20.3		
December	638	25	12	20.6		
Calendar year 1939	11,120	537	2	30.5		
January	283	12	8	9.1		
February	397	15	9	13.7		
March	404	15	11	13.0		
April	3,712	409	15	124		
May	2,278	118	44	73.5		
June	1,671	92	30	55.7		
July	694	47	12	22.4		
August	615	24	13	19.8		
September	546	23	12	18.2		
Water year 1939-40	12,287	409	8	33.6		

† Discharge measurement made on this day.
Note.- Discharge for periods of backwater from beaver dams, Oct. 1 to Apr. 15, Aug. 25 to Sept. 30, computed on basis of eight discharge measurements, gage heights, weather records, observer's notes, and records for Walsh Creek near Seney.

Sand Creek near Germfask, Mich.

Location.- Cantilever chain gage, lat. 46°13'55", long. 86°50'40", in NE¼ sec. 7, T. 44 N., R. 13 W., half a mile upstream from mouth and 3 miles southwest of Germfask.

Drainage area.- 6 square miles.

Records available.- April 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 137 second-feet Apr. 17, 20 (gage height, 8.36 feet); no flow May 14.
1938-40: Maximum discharge observed, 319 second-feet Apr. 1, 1938 (gage height, 10.58 feet); no flow many times in August 1938, July 31, 1939, May 14, 1940.

Remarks.- Records good except those for periods of backwater from beaver dams, which are poor. Natural stream flow is modified by operation of refuge pools above. Gage read once daily except during period Oct. 27 to Mar. 28, when it was read about thrice weekly. No gage-height record Oct. 1, 3-9, 11, 15.

Cooperation.- Nine discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	13	7	4	2	2	4	36	13	20	4	4
2	4	13	12	4	2	2	4	44	11	12	4	4
3	5	12	13	4	2	3	4	40	11	4	4	4
4	5	12	11	4	2	3	5	32	11	2	5	3
5	5	12	10	4	2	3	6	32	10	7	5	3
6	5	12	10	3	2	3	8	23	9	11	5	3
7	6	12	9	3	2	3	11	19	17	13	5	4
8	11	12	9	3	2	3	16	16	32	13	5	3
9	9	12	9	3	2	3	29	14	34	11	3	3
10	12	15	9	3	2	3	32	13	32	10	2	4
11	11	15	8	3	2	3	27	12	32	9	2	4
12	11	13	8	3	2	3	36	1	29	8	4	3
13	10	13	8	3	2	3	50	11	23	7	5	3
14	9	12	8	3	2	3	71	0	20	7	5	3
15	9	12	8	3	2	3	57	16	19	6	5	3
16	8	11	7	3	2	3	93	25	16	6	5	3
17	8	11	7	3	2	3	124	24	15	6	5	3
18	7	10	7	3	2	3	93	22	16	6	7	3
19	7	10	8	3	2	3	124	23	14	6	6	3
20	7	10	9	3	2	3	137	40	12	12	6	3
21	8	9	9	3	2	3	87	36	16	11	6	3
22	10	9	8	3	2	3	62	32	16	10	5	3
23	9	8	8	3	2	3	53	27	18	9	5	2
24	9	8	8	3	2	3	46	23	19	9	5	2
25	8	8	8	3	2	3	57	21	66	8	5	3
26	8	8	8	3	2	3	62	23	57	7	4	3
27	8	7	7	3	2	3	62	24	55	7	4	3
28	10	7	7	3	2	3	50	25	34	6	4	2
29	11	7	6	3	2	3	40	20	32	6	5	2
30	12	7	5	3	-	3	42	19	25	5	5	2
31	13	-	4	3	-	4	-	16	-	5	4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	257	13	2	8.3		
November	320	15	7	10.7		
December	255	13	4	8.2		
Calendar year 1939	5,993	231	1	16.4		
January	98	4	3	3.2		
February	58	2	2	2.0		
March	92	4	2	3.0		
April	1,492	137	4	49.7		
May	709	44	0	22.9		
June	714	66	9	23.8		
July	259	20	2	8.4		
August	144	7	2	4.6		
September	91	4	2	3.0		
Water year 1939-40	4,489	137	0	12.3		

Note.- Discharge for periods of backwater from beaver dams, Oct. 1 to Apr. 7, July 2 to Sept. 30, computed on basis of nine discharge measurements, gage heights, weather records, observer's notes, and records for Driggs River near Germfask.

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 1940.

Extremes.- Maximum discharge observed during year, 239 second-feet May 2 (gage height, 9.08 feet); minimum observed, 30 second-feet Mar. 22-24 (gage height, 7.04 feet).
1938-40: Maximum discharge observed, 518 second-feet Apr. 27, 1939 (gage height, 11.08 feet); minimum observed, that of Mar. 22-24, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read once daily except Nov. 3 to Mar. 28, when it was read about thrice weekly.

Cooperation.- Eight discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	58	46	47	44	45	33	215	89	84	55	56
2	47	58	a54	47	44	44	42	239	84	84	55	53
3	46	a56	a52	47	45	43	50	227	89	80	55	51
4	45	55	49	47	46	41	44	193	89	76	53	48
5	45	a55	a49	47	47	a41	38	171	89	71	51	46
6	44	55	49	47	47	a41	62	166	84	66	51	44
7	45	a58	a48	48	47	a41	66	160	89	66	50	44
8	62	62	46	48	47	41	66	144	108	66	49	45
9	54	a60	a46	48	47	a41	62	128	108	62	49	45
10	60	59	a45	48	46	a42	62	123	108	62	48	51
11	59	a62	45	47	46	42	62	113	103	66	48	49
12	59	a60	a45	45	46	42	52	113	94	60	48	49
13	61	57	45	43	46	42	52	108	89	58	48	48
14	61	a66	38	41	45	43	40	103	84	58	46	48
15	a60	55	40	40	45	44	59	123	84	71	46	48
16	58	a54	50	40	45	a45	61	144	80	66	44	45
17	56	54	a47	40	45	a45	66	138	80	62	44	44
18	54	a53	44	40	45	39	66	128	80	62	48	44
19	53	a52	a46	40	44	a36	76	123	76	66	49	48
20	51	52	47	41	44	34	84	182	71	71	48	48
21	53	a50	a45	42	44	32	98	171	71	76	46	47
22	67	49	43	43	44	*30	113	166	66	71	47	46
23	62	a49	44	43	44	30	133	144	71	66	47	44
24	58	49	45	44	43	30	154	128	71	66	46	48
25	56	a48	46	44	43	31	171	118	138	66	44	48
26	53	a48	47	44	43	32	182	118	133	60	46	46
27	53	47	48	44	44	34	193	118	113	58	45	44
28	55	a46	48	44	44	a36	204	118	108	58	44	43
29	a57	45	47	44	45	38	204	108	103	58	46	45
30	57	a46	47	44	-	41	215	103	94	59	48	45
31	58	-	47	*44	-	42	-	94	-	57	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,698	67	44	54.8	0.783	0.90
November	1,608	62	45	53.6	.766	.85
December	1,438	54	38	46.4	.663	.76
Calendar year 1939	29,182	518	35	80.0	1.14	15.49
January	1,371	48	40	44.2	.631	.73
February	1,305	47	43	45.0	.643	.69
March	1,208	46	30	39.0	.557	.64
April	2,810	215	33	93.7	1.34	1.50
May	4,427	239	94	143	2.04	2.35
June	2,746	138	66	91.5	1.31	1.46
July	2,052	84	57	66.2	.946	1.09
August	1,492	55	44	48.1	.687	.79
September	1,409	55	43	47.0	.671	.75
Water year 1939-40	23,564	239	30	64.4	.920	12.51

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 14, 15, Dec. 23 to Feb. 18, Feb. 20 to Mar. 3, Mar. 12-14, 21-26.

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 1940.

Extremes.- Maximum discharge observed during year, 484 second-feet Apr. 21, 22 (gage height, 6.47 feet); minimum observed, 39 second-feet Sept. 6, 7 (gage height, 3.19 feet).

1938-40: Maximum discharge observed, 1,040 second-feet Apr. 27, 1939 (gage height, 9.88 feet); minimum observed, 34 second-feet Aug. 27-29, 1939 (gage height, 3.18 feet).

Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily except during period Oct. 27 to Mar. 28, when it was read about thrice weekly. Some diversion from river to refuge pool at a point about 10 miles upstream, July 21 to Sept. 30.

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating tables, water year 1939-40, except periods of ice-effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 10				Apr. 11 to Sept. 30					
3.2	35	3.0	28	3.8	90	5.0	256	7.0	562
3.4	50	3.2	40	4.2	139	5.5	332		
3.6	65	3.5	62	4.6	196	6.0	408		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	76	62	62	56	59	72	332	139	132	53	45
2	58	76	a78	62	56	60	76	347	126	120	50	45
3	58	a74	a75	62	58	62	80	363	132	114	52	44
4	58	72	72	62	60	62	87	363	126	114	52	41
5	58	a72	a70	61	62	62	92	302	126	102	54	40
6	58	72	67	61	62	61	105	256	120	102	53	39
7	58	a72	a67	60	62	61	112	241	132	96	48	39
8	a62	72	67	*60	62	60	117	226	159	96	47	43
9	67	a76	a72	60	61	58	116	204	226	96	46	41
10	72	80	a76	60	60	57	112	181	196	90	45	43
11	72	a78	80	58	60	56	108	174	218	90	45	44
12	72	a77	68	56	59	55	102	166	181	85	44	44
13	72	76	54	54	58	55	96	159	152	80	44	43
14	72	a74	*47	51	57	56	96	152	139	85	44	43
15	a72	72	56	50	57	57	102	159	132	85	41	43
16	72	a72	66	50	*58	58	120	204	126	80	*41	41
17	72	72	68	50	60	58	139	211	120	80	41	41
18	72	a70	68	50	60	*54	211	196	120	80	46	40
19	67	a68	66	50	60	52	317	218	108	76	46	44
20	67	67	65	50	61	50	438	287	96	102	43	45
21	72	a67	64	51	60	50	484	287	102	80	43	43
22	72	67	64	54	60	50	484	302	96	66	43	41
23	80	a67	64	56	60	50	454	271	102	62	43	40
24	76	67	64	56	60	52	408	226	102	62	41	44
25	72	a66	64	56	60	53	393	204	241	60	42	45
26	72	a64	64	56	59	55	363	204	256	60	44	43
27	a72	62	64	56	58	57	347	204	218	57	42	42
28	72	a62	64	56	58	60	332	204	188	53	41	42
29	a74	62	63	56	58	62	317	188	174	60	42	42
30	76	a62	63	56	-	65	332	166	152	55	43	43
31	76	-	63	56	-	68	-	152	-	54	41	-

Month	Observed				Diversion (second-feet)†	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean sec.-ft.	Per square mile	Run-off in inches
October	2,131	80	58	68.7	-	-	0.603	0.70
November	2,114	80	62	70.5	-	-	.618	.69
December	2,045	80	47	66.0	-	-	.579	.67
Calendar year 1939	42,218	1,040	34	116	-	-	1.02	13.78
January	1,738	62	50	56.1	-	-	.492	.57
February	1,722	62	56	59.4	-	-	.521	.56
March	1,775	68	50	57.3	-	-	.503	.58
April	6,612	484	72	220	-	-	1.93	2.15
May	7,149	363	152	231	-	-	2.03	2.34
June	4,505	256	96	150	-	-	1.32	1.47
July	2,574	132	53	83.0	6.0	91.0	.798	.92
August	1,400	54	41	45.2	17.3	62.5	.548	.63
September	1,273	45	39	42.4	16.2	58.6	.514	.57
Water year 1939-40	35,038	484	39	95.7	3.5	99.2	.870	11.85

* Winter discharge measurement made on this day.
† Diversion to refuge pool.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 12 to Apr. 10.

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 1940.

Extremes.- Maximum discharge observed during year, 290 second-feet Apr. 24, 25 (gage height, 5.93 feet); minimum observed, 2.2 second-feet Sept. 5, 6 (gage height, 0.51 foot).

1938-40: 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 good except those for periods of ice effect, which are fair. Gage read once daily except during Nov. 3 to Mar. 28 when it was read about thrice weekly.

Cooperation.- Eight discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 12		Nov. 13 to Sept. 30					
0.6	3.0	0.6	3.2	2.0	28	4.5	146
.8	5.7	.8	6.1	2.5	40	5.0	191
1.0	8.8	1.0	9.3	3.0	54	5.5	238
1.2	12	1.2	13	3.5	76		
1.4	16	1.5	19	4.0	105		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	10	5.8	6.0	a5.8	5.5	8.7	92	19	16	4.9	3.2
2	2.7	10	a10	a5.8	5.8	a5.5	10	128	16	14	5.2	2.9
3	2.6	a9.6	a12	5.6	a5.8	a5.5	11	112	17	12	5.4	2.8
4	2.4	9.2	10	a5.6	a5.8	5.5	12	81	16	11	5.0	2.4
5	2.3	a9.0	a9.5	5.6	5.8	a5.5	11	62	15	9.8	4.6	2.2
6	2.3	8.9	9.0	a5.6	a5.8	5.5	13	48	13	9.1	4.6	2.2
7	2.3	a9.2	a9.2	a5.5	5.8	a5.5	18	40	26	8.7	4.2	2.5
8	9.9	9.6	9.3	5.5	a5.8	5.5	20	35	43	8.8	3.9	4.2
9	7.4	a12	a9.1	a5.5	5.8	a5.5	20	29	43	7.9	3.8	3.8
10	11	14	a8.9	5.5	5.8	a5.5	21	26	38	7.4	3.5	4.6
11	10	a13	8.8	a5.5	5.8	5.5	21	23	34	7.2	3.5	4.6
12	9.4	a12	a8.6	5.6	5.8	a5.5	21	23	24	6.3	3.5	4.2
13	9.0	12	8.5	5.4	5.7	5.5	22	21	20	6.0	3.2	3.8
14	8.8	a11	a8.0	5.3	5.5	a5.6	23	20	17	5.6	4.3	3.8
15	a8.2	11	7.4	5.0	a5.5	5.8	22	43	16	6.7	3.8	3.8
16	7.7	a10	*7.1	4.8	5.5	a5.6	29	62	13	5.6	3.1	3.1
17	7.0	9.8	a7.2	4.5	a5.5	a5.4	33	54	12	5.4	3.1	3.1
18	6.6	a9.4	7.1	4.4	a5.6	5.2	36	48	11	5.2	4.2	3.1
19	6.4	a9.0	a7.6	4.4	*5.6	a5.3	48	43	10	7.5	4.6	3.5
20	6.0	8.7	8.0	4.7	a5.5	5.4	81	98	9.1	13	3.6	3.5
21	6.4	a8.2	a7.8	5.0	5.5	a5.4	137	81	8.5	11	3.5	3.3
22	8.9	7.7	7.7	5.2	a5.5	*5.5	155	71	8.2	9.1	3.9	3.0
23	8.3	a7.4	a7.4	5.5	5.5	a5.4	248	54	8.3	8.2	3.5	2.6
24	7.8	7.1	7.2	5.6	a5.4	a5.3	290	40	13	8.7	3.2	4.0
25	7.5	a7.0	a7.2	5.7	a5.3	5.2	290	35	71	8.0	3.1	3.6
26	7.2	a6.8	7.1	*5.8	5.2	a5.4	238	35	66	7.4	3.1	3.3
27	7.2	6.6	6.7	a5.8	a5.4	5.6	182	38	43	7.1	2.9	3.2
28	9.2	a6.4	a6.2	a5.8	5.5	a5.8	137	35	38	6.4	2.8	2.5
29	a10	6.3	5.8	5.8	a5.5	6.0	112	30	27	6.0	3.5	2.8
30	10	a6.0	a5.8	a5.8	-	7.9	120	25	20	6.1	3.2	2.4
31	10	-	a5.9	5.8	-	8.8	-	22	-	5.4	3.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	217.3	11	2.3	7.01	0.584	0.67
November	276.9	14	6.0	9.23	.769	.86
December	245.9	12	5.8	7.93	.661	.76
Calendar year 1939	7,795.2	598	.7	21.4	1.78	24.16
January	167.6	6.0	4.4	5.41	.451	.52
February	162.8	5.8	5.2	5.61	.468	.50
March	176.1	8.8	5.2	5.68	.473	.55
April	2,389.7	290	8.7	79.7	6.64	7.41
May	1,554	128	20	50.1	4.18	4.82
June	715.1	71	8.2	23.8	1.98	2.21
July	256.6	16	5.2	8.28	.690	.80
August	117.7	5.4	2.8	3.80	.317	.37
September	98.0	4.6	2.2	3.27	.272	.30
Water year 1939-40	6,377.7	290	2.2	17.4	1.45	19.77

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Jan. 13-25, Feb. 10-13.

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.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 132 second-feet Apr. 20, 21 (gage height, 3.84 feet); no flow at times; minimum gage height, 1.16 feet Sept. 5.
1938-40: Maximum discharge observed, 268 second-feet Mar. 31, 1938 (gage height, 4.20 feet); no flow at times in 1938, 1939, and 1940; minimum gage height, 0.53 foot Sept. 3, 1939.

Remarks.- Records good except those below one second-foot and those for periods of ice effect, which are poor. Gage read once daily except during Nov. 3 to Mar. 28, when it was read about thrice weekly.

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	3.3	2.1	1	2	2	3.9	99	e.2	4.8	2.0	0.4
2	0	3.3	a2.7	1	2	2	4.2	122	6.4	3.3	2.1	.3
3	0	a3.2	a3.7	1	2	2	4.4	99	6.4	2.6	1.7	.3
4	0	3.2	2.6	2	2	2	4.2	76	4.8	2.1	1.7	0
5	0	a3.3	a2.6	2	2	2	4.2	52	4.4	1.4	1.9	0
6	0	3.3	2.6	2	2	2	4.6	39	3.4	1.3	1.9	0
7	0	a3.3	a2.6	2	2	2	5.2	27	6.4	1.3	1.5	0
8	.4	3.4	2.7	2	2	2	6.2	25	21	1.4	1.4	.3
9	.4	a3.8	a2.6	2	2	2	6.4	21	17	1.1	1.4	.4
10	.5	4.2	a2.5	2	2	2	6.8	18	16	1.0	.9	.5
11	.4	a4.4	2.4	2	2	2	6.6	17	12	1.3	.7	.4
12	.5	a4.6	a2.6	1	2	2	7.0	16	7.8	.9	.6	.4
13	.6	4.8	2.7	1	2	2	7.4	16	6.4	.9	.5	.4
14	.6	a4.7	a2.5	1	2	2	7.4	16	4.4	.8	.3	.4
15	a.6	4.6	2.3	1	2	2	7.8	39	3.9	1.0	.3	.3
16	.6	a4.4	1.7	1	2	2	9.0	58	2.7	.8	.2	.2
17	.6	4.2	a2.0	1	2	2	12	42	2.7	.7	.1	.2
18	.6	a4.0	2.5	1	2	2	27	31	2.2	.7	.8	.2
19	.6	a3.7	2	1	*2	2	86	29	1.4	1.8	.6	.3
20	.5	3.4	2	1	2	2	132	92	1.4	1.7	.4	.2
21	.6	a3.0	2	1	2	2	132	62	1.4	1.3	.3	.1
22	1.0	2.5	2	2	2	*2	122	54	1.0	1.3	.4	.1
23	1.0	a2.5	2	2	2	2	114	36	1.2	1.3	.3	.1
24	1.0	2.5	2	2	2	2	122	25	3.0	1.6	.2	.3
25	1.1	a2.4	2	2	2	2	106	21	24	1.9	.2	.3
26	1.2	a2.4	2	*2	2	2	106	20	29	2.0	.3	.3
27	1.2	2.3	2	2	2	2	106	21	17	2.1	.1	.2
28	1.9	a2.2	2	2	2	3	114	22	14	2.4	.1	.1
29	a2.1	2.2	2	1	2	3	99	18	10	2.3	.3	.1
30	2.3	a2.1	2	1	-	3	122	14	6.4	2.4	.2	.1
31	2.4	-	2	1	-	3	-	10	-	2.1	.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	22.8	2.4	0	0.74		
November	101.2	4.8	2.1	3.37		
December	71.4	3.7	1.7	2.30		
Calendar year 1939	4,469.1	240	0	12.2		
January	46	2	1	1.5		
February	58	2	2	2.0		
March	66	3	2	2.1		
April	1,495.3	132	3.9	49.8		
May	1,237	122	10	39.9		
June	245.9	29	1.0	8.20		
July	51.6	4.8	.7	1.66		
August	23.5	2.1	.1	.76		
September	6.9	.5	0	.23		
Water year 1939-40	3,425.6	132	0	9.36		

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 19 to Mar. 31.

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.

Records available.- April 1938 to September 1940.

Extremes.- Maximum discharge during year, 203 second-feet Apr. 20 (gage height, 7.36 feet); minimum, 1.4 second-feet Sept. 7 (gage height, 1.04 feet).
1938-40: 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 fair except those for periods of ice effect, which are poor. Flow originating upstream from line between Rs. 14 W. and 15 W. is diverted from Marsh Creek Basin through drainage canal into Duck Creek and is not included in these records.

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	5.3	3.9	4	3	3	6	43	14	13	2.9	2.3
2	2.8	5.2	6.2	3	3	4	8	48	12	10	2.6	2.3
3	2.4	5.3	8.7	3	3	4	9.0	55	11	8.4	2.8	2.0
4	2.1	5.1	8.2	3	3	*4	10	48	10	7.8	5.2	1.9
5	1.9	4.6	7.6	3	3	4	13	42	9.6	7.1	5.4	1.6
6	1.9	4.6	6.4	3	3	4	13	35	8.8	6.5	6.7	1.6
7	1.7	4.7	6.4	3	3	4	15	28	13	5.8	4.8	1.6
8	1.7	4.7	6.4	3	3	4	16	24	16	4.9	3.8	1.8
9	2.0	4.8	6.2	*3	3	4	18	20	18	4.5	3.2	2.0
10	2.6	6.5	6.4	3	3	4	19	17	17	4.0	2.8	2.2
11	3.3	7.5	6	3	3	4	20	15	15	3.8	2.5	2.4
12	2.8	6.9	6	3	3	4	20	14	14	3.5	2.4	2.3
13	2.8	6.2	6	3	3	4	21	14	12	3.4	2.3	2.2
14	2.7	6.1	*5	3	3	4	22	13	10	3.0	2.1	2.2
15	2.7	6.0	6.0	3	3	4	27	16	11	3.2	1.8	2.1
16	2.8	5.7	6.0	3	3	4	43	23	9.6	2.9	1.7	2.0
17	2.6	5.6	6.1	3	3	4	72	23	8.6	2.6	1.5	1.9
18	2.4	5.4	6.2	3	3	4	102	21	8.0	2.4	1.9	1.9
19	2.4	5.2	6	3	3	3	166	24	7.2	3.3	2.4	1.9
20	2.4	4.8	6	3	3	3	192	42	6.2	7.8	2.4	2.1
21	2.8	4.5	7	3	3	3	181	45	5.6	8.7	2.2	2.2
22	4.6	4.5	6	3	*3	3	161	43	5.1	6.7	2.1	2.0
23	4.5	4.4	6	3	3	4	143	36	5.2	5.4	2.0	2.0
24	3.9	4.2	5	3	3	4	126	29	7.5	5.1	1.8	2.2
25	3.6	4.4	5	3	3	4	110	25	30	4.6	1.7	2.2
26	3.7	4.2	4	3	3	4	94	25	37	4.2	1.9	2.2
27	3.7	4.1	4	3	3	4	80	25	29	3.9	1.8	2.1
28	4.1	4.0	4	3	3	4	60	25	23	3.6	1.6	2.1
29	4.7	3.9	4	3	3	4	44	22	22	4.2	1.6	2.0
30	5.6	3.8	4	3	-	4	44	18	15	4.2	1.6	1.9
31	5.6	-	4	3	-	5	-	15	-	3.8	1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	96.0	5.6	1.7	3.10		
November	152.2	7.5	3.8	5.07		
December	178.7	8.7	3.9	5.76		
Calendar year 1939	7,162.5	319	.2	19.6		
January	94	4	3	3.0		
February	87	3	3	3.0		
March	120	5	3	3.9		
April	1,855.0	192	6	61.8		
May	873	55	13	28.2		
June	410.4	37	5.1	13.7		
July	162.3	13	2.4	5.24		
August	81.3	6.7	1.5	2.62		
September	61.2	2.4	1.6	2.04		
Water year 1939-40	4,171.1	192	1.5	11.4		

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-14, Dec. 19 to Apr. 2.

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 areas from which flow is diverted to Duck Creek from Walsh Creek and Marsh Creek.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge during year, 1,420 second-feet Apr. 23, 1940 (gage height, 10.78 feet); minimum, 11 second-feet Sept. 7 (gage height, 1.82 feet).
1938-40: Maximum discharge observed, 1,740 second-feet Apr. 26, 1939 (gage height, 11.70 feet, site and datum then in use); minimum observed, 9 second-feet Aug. 9, 1938.

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

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating tables, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15				Apr. 16 to Sept. 30							
2.0	17	1.9	14	2.7	50	5.0	264	8.0	580	10.0	981
2.5	38	2.1	22	3.0	70	6.0	365	9.0	717	10.8	1,420
3.0	67	2.4	36	4.0	164	7.0	470	9.5	823		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	49	36	27	26	29	52	524	179	a115	34	15
2	31	48	50	27	26	29	56	535	149	a94	32	16
3	28	48	60	27	26	30	65	535	135	a82	32	15
4	27	46	56	27	27	31	72	524	120	a74	36	13
5	25	46	55	27	26	*32	84	491	108	69	40	13
6	25	46	51	26	29	32	97	438	97	62	44	12
7	25	46	50	26	29	32	120	386	116	56	37	11
8	24	46	50	26	29	33	140	344	130	54	32	14
9	26	46	48	25	29	33	170	304	154	51	30	16
10	37	58	50	25	29	32	205	264	169	48	28	18
11	38	59	49	24	29	31	220	234	179	48	27	17
12	36	57	46	23	29	31	215	204	179	46	26	16
13	36	56	49	22	29	31	210	184	164	43	26	16
14	36	55	44	21	29	31	205	169	140	42	24	17
15	38	54	40	21	29	32	*210	179	140	42	22	17
16	36	54	38	21	29	32	264	204	120	40	21	16
17	34	51	36	*21	30	34	365	214	103	36	19	15
18	33	49	37	20	30	35	407	219	93	34	22	14
19	32	47	38	20	31	36	491	239	83	34	28	15
20	31	45	40	21	30	37	603	294	71	57	24	16
21	34	43	40	22	*30	38	879	324	64	68	20	16
22	44	42	39	24	29	38	1,120	365	60	56	18	14
23	42	40	37	25	29	37	1,360	375	58	49	17	13
24	40	40	36	25	29	36	1,240	344	69	50	16	17
25	40	40	35	26	29	33	1,020	314	179	48	16	17
26	40	38	35	26	29	32	879	294	219	46	18	15
27	42	37	33	26	29	33	754	274	239	42	16	14
28	44	36	31	26	29	35	669	264	a223	39	14	13
29	45	36	29	26	29	40	580	249	a180	42	15	13
30	49	35	28	26	-	47	557	229	a140	42	16	13
31	49	-	28	26	-	50	-	204	-	38	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,103	49	24	35.6		
November	1,393	59	35	46.4		
December	1,294	60	28	41.7		
Calendar year 1939	43,954	1,740	10	120		
January	755	27	20	24.4		
February	835	31	26	28.8		
March	1,062	50	29	34.3		
April	13,309	1,360	52	444		
May	9,721	535	169	314		
June	4,060	239	58	135		
July	1,647	115	34	53.1		
August	765	44	14	24.7		
September	447	18	11	14.9		
Water year 1939-40	36,391	1,360	11	99.4		

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed from records for West Branch of Manistique River near Manistique and Driggs River near Germfask.
Note.- Stage-discharge relation affected by ice Dec. 14 to Apr. 15.

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 1940.

Extremes.- Maximum discharge during year, 2,800 second-feet Apr. 27, May 3 (gage height, 10.00 feet); minimum, 142 second-feet Oct. 8.
1938-40: 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.- Eight discharge measurements and observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	265	233	190	154	182	300	2,520	754	690	222	176
2	170	271	244	188	152	190	330	2,660	690	596	219	173
3	161	277	256	188	152	200	360	2,800	643	506	217	168
4	155	281	269	188	158	204	400	2,700	596	450	224	160
5	149	281	277	188	162	204	450	2,480	566	422	233	155
6	146	277	281	188	166	200	521	2,190	536	383	224	148
7	143	277	273	188	168	*192	521	1,870	536	358	213	146
8	142	279	269	188	166	190	536	1,610	551	334	202	145
9	152	285	267	188	166	190	506	1,460	596	312	191	154
10	183	302	269	188	164	190	492	1,350	628	302	183	175
11	200	323	265	*188	163	188	492	1,250	643	291	176	182
12	211	334	265	185	162	182	506	1,140	628	279	171	194
13	220	334	258	180	160	180	492	1,040	596	267	170	200
14	224	334	200	176	160	180	492	970	536	260	164	200
15	229	323	*160	155	165	183	521	936	506	257	161	191
16	233	312	170	148	170	186	551	1,000	492	248	156	185
17	233	302	200	145	178	182	628	1,040	450	239	152	178
18	233	302	220	145	182	180	771	1,040	436	231	156	171
19	228	291	230	145	184	180	936	1,070	396	226	164	166
20	224	281	235	148	*184	180	1,140	1,210	370	263	171	163
21	220	281	240	152	186	184	1,350	1,320	346	291	170	160
22	220	271	240	160	184	186	1,680	1,390	334	312	163	155
23	220	262	235	160	182	184	2,030	1,390	334	312	158	154
24	226	258	230	160	180	180	2,350	1,320	346	302	155	155
25	228	254	225	158	180	180	2,570	1,210	521	285	155	155
26	222	a248	220	158	178	180	2,750	1,140	690	279	155	161
27	220	a243	210	156	176	180	2,800	1,070	804	267	154	164
28	222	a240	205	156	178	190	2,700	1,000	854	254	154	163
29	229	a238	200	156	180	210	2,570	936	854	250	152	160
30	244	235	195	154	-	240	2,520	903	804	241	154	156
31	250	-	190	154	-	270	-	837	-	229	164	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,307	250	142	203	0.630	0.73
November	8,461	334	235	282	.876	.98
December	7,231	281	160	233	.724	.83
Calendar year 1939	174,806	5,300	123	479	1.49	20.19
January	5,215	190	145	168	.522	.60
February	4,940	186	152	170	.528	.57
March	5,947	270	180	192	.596	.69
April	34,265	2,800	300	1,142	3.55	3.96
May	44,852	2,800	837	1,447	4.49	5.18
June	17,036	854	334	568	1.76	1.96
July	9,936	690	226	321	.997	1.15
August	5,503	233	152	178	.553	.64
September	5,013	200	145	167	.519	.58
Water year 1939-40	154,706	2,800	142	423	1.31	17.87

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Creighton River near Shingleton.
Note.- Stage-discharge relation affected by ice Dec. 14 to Apr. 5.

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 1940.

Extremes.- Maximum discharge observed during year, 452 second-feet May 2 (gage height, 5.95 feet); minimum observed, 10 second-feet Oct. 5, Aug. 17, 28, Sept. 6.
1938-40: 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 good except those for periods of ice effect, which are fair. Gage read once daily except Nov. 3 to Mar. 28, when it was read about thrice weekly.

Cooperation.- Seven discharge measurements and observer's services furnished by Fish and Wildlife Service.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 10-31)

2.5	10	3.5	35	4.5	92	5.5	293
2.7	14	4.0	58	4.8	127	5.9	433
3.0	21	4.2	70	5.1	181		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	37	20	18	14	17	29	433	70	61	21	14
2	11	39	a30	17	14	17	25	452	58	50	21	13
3	11	a38	a38	17	14	18	30	396	61	43	21	13
4	11	37	30	17	14	19	39	343	53	37	21	12
5	10	a36	a29	17	15	19	29	293	50	34	20	11
6	11	35	28	17	16	19	34	262	48	30	20	10
7	11	a37	a28	17	16	19	39	262	67	28	18	11
8	15	39	29	17	16	19	46	248	80	28	16	14
9	14	a42	a29	17	15	19	56	220	76	26	16	14
10	25	46	a28	17	15	18	48	206	73	25	14	18
11	25	a44	28	16	15	18	48	170	67	24	15	20
12	26	a42	a28	16	15	18	53	150	56	22	13	19
13	29	39	28	15	15	17	50	141	50	21	13	18
14	30	a38	26	15	15	17	58	134	46	22	12	17
15	a30	37	23	14	15	18	58	159	43	24	11	15
16	29	a35	22	14	16	18	58	181	37	22	11	14
17	28	34	a23	13	16	17	64	170	37	21	10	13
18	26	a33	24	13	17	17	67	159	34	20	12	13
19	25	a31	a24	14	*17	17	92	150	34	21	14	14
20	24	29	25	14	18	17	150	206	34	34	13	14
21	25	a28	25	15	18	17	170	194	32	35	12	14
22	30	26	24	15	18	18	181	194	28	32	13	14
23	29	a25	23	15	17	17	220	170	28	29	13	14
24	26	24	23	15	17	16	262	141	32	32	12	15
25	26	a23	22	14	17	16	262	127	92	35	11	16
26	25	a22	21	*14	17	17	293	120	102	32	12	15
27	25	21	21	14	17	*17	293	114	97	26	11	15
28	30	a21	20	14	16	18	278	114	88	24	10	13
29	a32	21	19	14	16	20	310	102	84	22	12	13
30	34	a21	18	14	-	24	396	88	76	25	14	13
31	35	-	18	14	-	26	-	80	-	24	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	721	35	10	23.3	0.666	0.77
November	980	46	21	32.7	.934	1.04
December	774	38	18	25.0	.714	.82
Calendar year 1939	20,992	552	5	57.5	1.64	22.29
January	473	18	13	15.3	.437	.50
February	461	18	14	15.9	.454	.49
March	564	26	16	18.2	.520	.60
April	3,738	396	25	125	3.57	3.98
May	6,179	452	80	199	5.69	6.56
June	1,733	102	28	57.8	1.65	1.84
July	909	61	20	29.3	.837	.96
August	444	21	10	14.3	.409	.47
September	429	20	10	14.3	.409	.46
Water year 1939-40	17,405	452	10	47.6	1.36	18.49

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 14, 15, 21-25, Dec. 27 to Mar. 28.

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 from Manistique.

Drainage area.- 302 square miles.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge observed during year, 721 second-feet May 6, 7, 25-28 (gage height, 5.37 feet); minimum observed, 292 second-feet Mar. 23-28, Apr. 1, Aug. 27, 28; minimum gage height, 3.30 feet Mar. 25.
1938-40: 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.

Remarks.- Records good except those for periods Oct. 1 to Nov. 19, June 22 to Sept. 30, which were affected by occasional changes in boards on control dam 1½ miles below gage and are fair. Stage of Indian Lake regulated during summer by board obstruction on spillway. Gage read once daily.

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

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 1 to Nov. 19, and June 22 to Sept. 30)

3.3	292	4.0	417	5.0	622
3.5	328	4.5	514	5.5	750

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	328	328	436	363	310	310	292	670	670	455	417	310
2	328	310	436	345	310	310	310	670	670	474	399	310
3	328	310	417	345	310	310	310	695	645	494	363	310
4	328	310	417	345	310	310	310	695	622	494	363	310
5	328	345	417	345	310	310	328	695	622	494	363	310
6	328	436	417	345	310	310	345	721	622	494	345	310
7	328	436	417	345	310	310	345	721	622	494	345	310
8	345	436	417	345	310	310	363	695	599	494	345	310
9	345	436	417	328	310	310	363	695	599	474	345	310
10	345	436	417	328	310	310	381	695	599	455	345	310
11	345	436	417	328	310	310	381	670	599	455	328	310
12	345	436	399	328	310	310	399	670	576	455	328	328
13	345	436	399	328	310	310	399	670	576	436	328	328
14	345	436	399	328	310	310	417	670	576	436	328	328
15	345	436	399	328	310	310	417	670	555	436	328	328
16	328	455	399	328	310	310	436	645	555	436	310	328
17	328	455	399	328	310	310	436	645	555	436	310	328
18	328	436	399	328	310	310	436	645	555	417	310	345
19	328	474	399	328	310	310	474	645	534	417	310	345
20	310	514	399	328	310	310	494	645	534	417	310	345
21	310	494	399	328	310	310	534	670	514	436	310	345
22	328	494	399	328	310	310	555	695	417	436	310	345
23	328	474	399	345	310	292	576	695	328	435	310	328
24	328	474	399	328	310	292	576	695	328	436	310	328
25	310	474	3e1	328	310	292	599	721	363	436	310	328
26	310	455	381	328	310	292	645	721	381	436	310	328
27	310	455	381	328	310	292	645	721	381	436	292	328
28	328	455	363	328	310	292	670	721	399	417	292	310
29	328	436	363	328	-	310	670	695	436	417	310	310
30	328	436	363	310	-	310	670	695	455	417	310	310
31	328	-	363	310	-	310	-	695	-	417	310	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,214	345	310	329	1.09	1.26
November	12,944	514	310	431	1.43	1.60
December	12,407	436	363	400	1.32	1.52
Calendar year 1939	150,032	1,000	106	411	1.36	18.49
January	10,303	363	310	332	1.10	1.27
February	8,990	310	310	310	1.03	1.11
March	9,502	310	292	307	1.02	1.18
April	13,776	670	292	459	1.52	1.70
May	21,251	721	645	686	2.27	2.62
June	15,887	670	328	530	1.75	1.95
July	13,883	494	417	448	1.48	1.71
August	10,194	417	292	329	1.09	1.26
September	9,673	345	310	322	1.07	1.19
Water year 1939-40	149,024	721	292	407	1.35	18.37

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 1940.

Average discharge.- 26 years, 1,765 second-feet.

Extremes.- Maximum daily discharge during year, 9,630 second-feet May 2; minimum daily, 743 second-feet Mar. 17.
1914-40: 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 is 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. 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	959	1,380	1,160	846	1,140	1,100	1,230	9,260	3,540	2,460	1,380	917
2	1,250	1,280	1,130	978	1,030	955	1,350	9,630	3,580	2,570	1,480	926
3	1,180	1,330	1,070	916	922	827	1,650	9,060	3,200	2,520	1,700	1,290
4	1,240	1,180	1,180	849	866	1,010	1,550	6,970	2,970	2,050	1,040	1,310
5	1,190	955	1,180	881	1,030	1,010	1,430	7,050	3,600	2,280	1,420	996
6	1,210	1,290	1,240	821	1,040	1,010	1,430	5,840	3,510	1,800	1,380	1,030
7	1,030	1,330	1,380	775	1,070	1,050	1,230	5,680	4,380	1,390	1,220	952
8	932	1,310	1,410	929	1,080	1,010	1,820	5,600	4,540	1,400	1,070	852
9	1,240	1,150	1,080	939	1,100	958	1,870	4,980	3,630	1,670	1,020	1,080
10	1,430	1,140	980	921	990	865	1,990	4,930	3,170	1,660	1,050	1,050
11	1,450	1,120	1,140	1,110	809	1,090	1,850	4,450	3,090	1,850	939	1,000
12	1,690	1,010	1,110	1,310	1,120	1,060	1,710	4,340	3,070	1,660	1,210	1,140
13	2,300	1,260	1,120	1,040	1,060	1,080	1,400	4,150	2,520	1,760	1,140	1,070
14	1,440	1,220	1,160	875	1,030	1,030	1,150	4,130	2,450	1,490	1,180	975
15	870	1,220	1,040	1,020	903	1,090	1,490	4,120	2,410	1,700	1,180	869
16	1,520	1,270	1,000	982	917	939	2,090	5,030	1,640	1,450	1,070	986
17	1,200	1,160	910	909	916	743	2,350	5,070	1,880	1,210	1,050	939
18	1,200	1,120	1,130	847	859	1,130	2,500	5,060	2,390	1,230	914	955
19	1,190	1,000	1,170	826	1,050	1,160	2,520	5,260	2,420	1,200	1,140	836
20	1,200	1,270	1,240	872	1,120	1,120	2,600	6,100	2,460	1,630	1,020	888
21	1,200	1,260	1,070	822	1,120	1,050	3,500	8,440	2,450	1,770	1,130	847
22	2,780	1,260	1,140	962	1,080	972	5,140	8,950	2,350	1,900	1,270	802
23	1,400	1,140	1,210	1,090	1,050	913	5,290	7,660	1,620	1,770	1,010	948
24	1,200	1,100	900	1,040	948	809	5,700	6,440	2,080	1,590	1,130	913
25	1,200	1,090	845	1,090	782	999	6,510	5,860	2,990	1,630	1,020	941
26	1,420	964	1,050	1,040	1,170	970	5,750	5,200	3,870	2,240	1,310	981
27	1,410	1,050	1,190	1,030	1,110	997	6,060	4,580	3,600	2,450	1,460	969
28	1,100	996	1,290	850	1,080	1,020	6,230	4,420	3,200	1,660	1,530	909
29	904	1,020	1,250	1,160	1,110	1,030	7,230	4,350	3,040	1,980	1,510	779
30	1,200	1,040	1,240	1,100	-	1,020	8,380	4,030	2,990	1,660	1,300	879
31	1,210	-	938	1,140	-	878	-	3,780	-	1,430	1,280	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	40,745	2,780	870	1,314	0.734	0.85
November	34,915	1,380	955	1,164	.650	.73
December	34,953	1,410	845	1,128	.630	.73
Calendar year 1939	844,732	10,600	845	2,314	1.29	17.56
January	29,970	1,310	775	967	.540	.62
February	29,502	1,170	782	1,017	.568	.61
March	30,895	1,160	743	997	.557	.64
April	95,050	8,380	1,150	3,168	1.77	1.98
May	180,420	9,630	3,780	5,820	3.25	3.75
June	88,640	4,540	1,620	2,955	1.65	1.84
July	55,070	2,570	1,200	1,776	.992	1.14
August	37,553	1,700	914	1,211	.677	.78
September	29,029	1,310	779	968	.541	.60
Water year 1939-40	686,742	9,630	743	1,876	1.05	14.27

Menominee River below Koss, Mich.

Location.- Lat. 45°22', long. 87°39', in sec. 9, T. 34 N., R. 27 W., at power plant of Wisconsin Public Service Corporation, half a mile upstream from Little Cedar River and 4 miles downstream from Koss.

Drainage area.- 3,790 square miles.

Records available.- July 1913 to September 1940.

Average discharge.- 27 years, 3,157 second-feet.

Extremes.- Maximum daily discharge during year, 13,700 second-feet May 24; minimum daily, 949 second-feet Dec. 26.
1913-40: Maximum daily discharge, 23,200 second-feet Apr. 23, 25, 1916; minimum daily, 162 second-feet Sept. 15, 1931.

Remarks.- Records fair. Flow regulated above station by 10 dams which are used for development of power. Records of daily discharge computed by Wisconsin Public Service Corporation on basis of average daily load and load-discharge rating of combined hydroelectric units, checked within 5 percent by one discharge measurement made October 1931 and within 15 percent by two discharge measurements made in September 1939 by Geological Survey.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,660	2,020	1,340	1,360	1,580	1,580	1,300	9,390	5,720	5,220	3,280	2,210
2	1,150	1,980	1,970	1,220	1,580	1,580	1,770	10,500	5,330	4,790	3,280	2,220
3	1,960	1,920	1,710	1,520	1,730	2,120	1,730	11,800	5,300	3,260	3,030	2,070
4	1,920	1,920	1,200	1,630	1,730	1,440	2,580	12,800	5,040	4,760	2,860	2,400
5	2,020	1,470	2,040	1,540	1,080	1,440	2,500	12,300	4,400	3,650	2,880	2,400
6	2,020	2,000	2,000	1,440	1,580	1,510	2,210	9,490	4,530	4,050	2,990	2,400
7	1,920	1,630	1,920	1,400	1,510	1,510	3,220	8,070	5,150	3,280	2,590	2,040
8	1,280	2,180	2,020	1,080	1,670	1,510	2,620	6,880	6,760	2,050	2,500	1,840
9	1,580	1,630	1,730	1,220	1,590	1,510	3,470	7,160	6,790	2,880	2,780	1,600
10	2,110	2,180	1,980	1,390	1,520	1,440	3,480	6,210	7,220	2,150	2,500	1,500
11	2,500	2,300	1,630	1,440	1,440	1,150	4,240	6,290	6,720	2,450	2,040	1,950
12	2,530	1,580	2,020	1,460	1,150	1,630	4,160	5,750	5,770	2,960	1,350	2,020
13	2,490	1,670	2,020	1,440	1,510	1,370	3,710	5,440	5,030	2,960	2,320	1,820
14	1,900	2,110	1,540	1,440	1,440	1,440	3,700	5,390	4,820	2,480	2,400	1,600
15	1,870	2,110	1,920	1,220	1,660	1,570	3,120	5,910	4,240	2,520	2,020	1,630
16	2,430	2,110	1,520	1,370	1,660	2,120	3,610	5,660	4,420	2,980	2,210	1,170
17	1,920	1,920	1,870	1,300	1,740	1,720	4,150	7,140	3,310	2,400	2,160	1,440
18	1,600	2,020	1,150	1,370	1,140	1,010	4,730	7,390	3,510	2,300	2,400	1,720
19	2,250	1,900	2,120	1,320	1,150	1,640	4,470	8,870	3,340	2,110	2,070	1,940
20	2,020	1,220	2,020	1,510	1,460	1,630	4,860	8,770	3,300	2,110	1,840	2,110
21	2,050	2,300	1,230	1,370	1,380	1,470	6,640	10,000	3,350	1,580	2,080	1,910
22	1,580	1,800	1,630	1,080	1,500	1,440	6,110	11,900	4,490	2,700	1,940	1,660
23	1,660	2,090	1,660	1,370	1,410	1,590	7,590	13,600	4,390	3,530	2,210	1,080
24	2,020	1,660	1,580	1,300	1,700	1,560	8,480	13,700	3,840	3,390	2,780	1,800
25	1,780	1,940	1,080	1,440	1,580	1,080	8,370	12,100	5,110	3,820	2,400	1,510
26	2,020	1,580	949	1,500	1,110	1,440	8,640	10,800	4,820	3,680	1,320	1,730
27	2,210	1,440	1,640	1,580	1,530	1,620	8,880	9,390	7,240	3,250	2,340	1,660
28	2,020	1,960	2,160	1,660	1,530	1,660	7,970	8,100	6,370	3,270	2,590	1,440
29	1,530	2,000	1,670	1,150	1,660	1,530	8,290	7,560	6,130	4,210	2,880	1,370
30	1,820	1,740	1,870	1,530	-	1,660	8,810	7,860	5,220	3,720	3,170	1,660
31	2,110	-	1,880	1,530	-	1,580	-	5,770	-	3,240	3,260	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	60,530	2,830	1,150	1,953	0.515	0.59
November	56,880	2,300	1,220	1,896	.500	.56
December	53,369	2,160	949	1,722	.454	.52
Calendar year 1939	1,452,839	16,900	949	3,980	1.05	14.24
January	43,180	1,660	1,080	1,393	.368	.42
February	43,320	1,740	1,080	1,494	.394	.42
March	47,520	2,120	1,010	1,533	.404	.47
April	145,410	8,880	1,300	4,847	1.28	1.43
May	271,990	13,700	5,390	8,774	2.32	2.68
June	151,660	7,240	3,300	5,055	1.33	1.48
July	97,750	5,220	1,580	3,153	.832	.96
August	76,470	3,280	1,320	2,467	.651	.75
September	53,900	2,400	1,080	1,797	.474	.53
Water year 1939-40	1,101,979	13,700	949	3,011	.794	10.81

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 1940. January 1914 to September 1923 at site 4 miles upstream, where drainage area is 511 square miles.

Average discharge.- 17 years (1923-39) 429 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 1,910 second-feet May 22; no flow Aug. 6.

1923-40: 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 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	284	374	256	167	198	221	312	1,840	770	674	611	480
2	339	260	339	208	195	186	312	1,770	675	637	624	399
3	339	356	339	208	221	87	197	1,560	744	637	617	312
4	235	339	333	144	155	226	276	1,480	731	633	604	419
5	240	273	240	187	208	221	312	1,360	744	520	606	366
6	238	259	330	160	195	208	327	1,200	745	378	0	324
7	339	309	334	95	192	221	405	1,130	904	312	599	312
8	193	299	237	176	202	199	459	971	1,340	411	589	280
9	339	299	277	176	207	221	433	890	1,340	312	441	215
10	370	339	263	156	208	84	415	890	1,320	312	299	298
11	532	332	339	181	165	221	460	850	1,200	499	303	312
12	547	144	276	175	212	193	407	637	955	486	312	211
13	432	339	240	194	195	221	440	671	848	359	312	217
14	381	339	236	132	174	208	372	650	763	312	322	312
15	339	334	134	195	140	195	473	760	708	358	349	169
16	415	240	221	180	189	212	520	890	619	375	342	239
17	366	291	268	208	221	65	626	890	530	312	452	248
18	339	240	277	209	140	220	650	890	622	208	312	248
19	359	325	295	203	208	221	805	1,020	824	312	424	312
20	339	284	169	236	208	221	1,120	1,700	744	417	312	299
21	339	255	199	106	208	221	1,300	1,810	704	1,030	363	312
22	297	278	208	190	208	208	1,450	1,910	624	1,190	437	261
23	256	240	208	193	221	221	1,480	1,720	624	1,290	520	251
24	341	277	212	182	221	91	1,480	1,410	794	584	512	297
25	325	240	301	177	164	221	1,490	1,010	1,140	835	474	221
26	227	321	215	177	221	219	1,460	995	1,190	838	519	266
27	339	258	221	195	221	186	1,370	1,160	1,100	838	624	221
28	339	240	237	150	221	147	1,370	1,170	944	706	580	312
29	325	236	235	195	221	179	1,410	1,000	861	572	560	233
30	240	257	221	198	-	221	1,800	850	839	534	558	333
31	339	-	195	195	-	127	-	770	-	598	520	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,334	547	193	333	0.613	0.71
November	8,557	374	144	285	.525	.59
December	7,914	339	134	255	.470	.54
Calendar year 1939	217,175	2,380	134	595	1.10	14.87
January	5,548	236	95	179	.330	.38
February	5,739	221	140	198	.365	.39
March	5,692	226	65	190	.350	.40
April	23,931	1,800	197	798	1.47	1.64
May	35,854	1,910	637	1,157	2.13	2.46
June	25,946	1,340	530	865	1.59	1.77
July	17,479	1,290	208	564	1.04	1.20
August	14,117	624	0	455	.838	.97
September	8,679	480	169	289	.532	.59
Water year 1939-40	169,990	1,910	0	464	.855	11.64

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 downstream from North Branch of Pike River.
Drainage area.- 250 square miles.
Records available.- February 1914 to September 1940.
Average discharge.- 26 years, 230 second-feet.
Extremes.- Maximum discharge observed during year, 727 second-feet May 21 (gage height, 3.84 feet); minimum observed, 115 second-feet Feb. 6-10.
1914-40: Maximum discharge observed, 2,730 second-feet Apr. 10, 1922 (gage height, 7.68 feet, former site and datum), from rating curve extended above 1,100 second-feet; minimum observed, 26 second-feet Dec. 27, 1925 (gage height, 1.30 feet, former site and datum).
Remarks.- Records good except those for periods of ice effect, which are fair. Gage read once daily.

Rating tables, water year 1939-40, 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	114	1.8	114	2.5	289
2.0	150	2.0	153	3.0	449
2.2	196	2.2	204	3.5	620
2.4	249				

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	161	172	161	130	120	135	185	398	260	231	190	204
2	150	161	172	130	120	140	200	415	260	218	204	204
3	150	161	172	130	120	140	215	366	260	204	218	177
4	150	150	172	130	120	135	230	350	246	204	550	165
5	150	150	172	130	120	135	260	366	294	177	585	153
6	140	150	161	130	115	135	274	350	335	177	231	153
7	140	161	161	130	115	135	366	320	398	165	190	142
8	140	161	161	125	115	130	382	289	550	153	165	132
9	a168	161	150	125	115	130	449	274	691	142	153	132
10	196	172	150	120	115	130	482	260	585	132	142	132
11	196	222	150	120	125	130	415	246	432	142	142	142
12	184	196	150	*120	130	130	350	231	366	204	142	142
13	161	196	150	120	*135	130	350	218	260	177	153	153
14	172	161	150	120	135	135	320	274	246	165	153	165
15	a166	161	150	120	135	135	366	335	231	165	177	153
16	161	161	150	120	135	140	449	449	204	153	231	142
17	150	161	150	120	135	140	516	482	190	142	204	132
18	150	161	150	120	135	140	516	432	246	132	177	165
19	150	161	161	120	135	135	516	449	335	142	165	177
20	150	150	222	120	135	135	550	655	320	177	153	165
21	150	150	184	120	125	135	550	727	231	335	190	153
22	150	150	175	120	120	135	516	727	246	260	204	142
23	150	140	165	120	120	135	516	620	294	246	204	132
24	150	150	150	120	120	130	482	516	398	231	177	132
25	161	150	140	120	120	130	449	449	550	231	218	132
26	161	150	135	120	120	135	432	382	482	260	231	132
27	161	161	130	120	125	135	398	366	382	231	231	132
28	172	172	125	120	130	140	382	398	335	231	231	132
29	172	161	125	120	130	140	366	382	289	274	231	132
30	161	150	125	120	-	150	382	350	260	260	289	132
31	172	-	125	120	-	170	-	289	-	204	246	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,945	196	140	160	0.640	0.74
November	4,863	222	140	162	.648	.72
December	4,794	222	125	155	.620	.71
Calendar year 1939	99,516	1,650	125	273	1.09	14.79
January	3,800	130	120	123	.492	.57
February	3,620	135	115	125	.500	.54
March	4,230	170	130	136	.544	.63
April	11,864	550	185	395	1.58	1.76
May	12,365	727	218	399	1.60	1.84
June	10,176	691	190	339	1.36	1.52
July	6,165	335	132	199	.796	.92
August	6,777	585	142	219	.876	1.01
September	4,481	204	132	149	.596	.66
Water year 1939-40	78,080	727	115	213	.852	11.62

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Dec. 14-17, Dec. 22 to Apr. 4.

Peshtigo River at High Falls, near Crivitz, Wis.

Location.- Lat. 45°17', long. 88°12', in sec. 1, T. 32 N., R. 18 E., at High Falls power plant of Wisconsin Public Service Corporation, 1 mile upstream from Thunder River and 10 miles west of Crivitz.

Drainage area.- 571 square miles.

Records available.- August 1912 to September 1940.

Average discharge.- 28 years, 493 second-feet.

Extremes.- Maximum daily discharge during year, 1,760 second-feet June 11; minimum daily, 7 second-feet many times during year.
1912-40: Maximum daily discharge, 3,860 second-feet Apr. 11, 1922 (gage height, 7.80 feet); no flow several days during 1925, 1928, 1929, 1932, 1933.

Remarks.- Records fair. Discharge determined from power plant records. Flow regulated by service reservoir at plant (capacity, 7,940 second-foot-days) and Caldron Falls Reservoir (capacity, 5,785 second-foot-days). Records of daily discharge computed by Wisconsin Public Service Corporation on basis of average daily load, head and plant efficiency, checked within 10 percent by 2 discharge measurements made in September 1939 by Geological Survey.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	223	372	160	305	349	283	1,110	1,080	856	788	420
2	439	257	247	521	318	102	437	1,140	645	507	510	195
3	166	412	54	324	231	21	619	1,440	832	473	244	1,010
4	231	256	495	204	7	163	496	1,360	694	18	468	714
5	374	87	334	215	149	407	612	661	662	675	656	298
6	344	425	343	209	121	315	267	1,350	552	948	897	456
7	208	322	360	137	15	613	11	1,170	1,010	128	601	389
8	112	240	332	232	124	492	465	1,190	1,090	536	592	68
9	436	490	411	326	136	589	575	1,100	1,330	468	577	305
10	205	483	51	177	60	100	521	1,030	1,660	427	447	280
11	254	351	463	170	7	318	555	446	1,760	256	127	422
12	542	58	540	175	133	407	545	295	1,190	535	438	406
13	442	619	462	7	116	421	137	760	1,360	345	342	503
14	414	414	480	29	190	402	23	940	1,130	86	190	161
15	59	243	377	219	134	375	596	743	1,160	306	241	7
16	562	339	43	244	340	364	616	1,010	803	231	210	427
17	552	334	7	255	210	7	538	946	578	177	138	309
18	368	364	352	294	7	439	581	990	654	598	36	184
19	258	148	187	386	178	635	858	671	812	433	560	413
20	365	493	159	57	262	360	1,060	1,270	584	540	652	782
21	37	566	204	68	260	494	915	1,470	642	13	397	246
22	58	267	341	304	251	427	1,620	1,610	1,640	352	454	17
23	438	468	199	376	468	528	1,530	1,480	1,040	582	623	509
24	428	507	115	317	122	36	1,290	1,420	735	510	315	515
25	393	410	144	287	7	511	770	1,230	1,180	572	107	278
26	435	10	672	316	92	653	1,320	941	1,210	519	521	359
27	471	373	397	305	461	434	1,090	1,100	1,340	836	367	237
28	73	317	334	39	262	457	809	1,200	1,080	457	617	32
29	158	262	335	298	7	567	1,230	1,220	1,250	751	716	7
30	484	41	193	367	-	166	1,420	582	1,000	989	680	179
31	264	-	115	438	-	88	-	1,060	-	680	322	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,728	562	37	314	0.550	0.63
November	9,781	619	10	326	.571	.64
December	9,118	672	7	294	.515	.59
Calendar year 1939	221,569	2,520	7	607	1.06	14.43
January	7,476	521	7	241	.422	.49
February	5,013	461	7	173	.303	.33
March	11,030	653	7	356	.623	.72
April	21,789	1,620	11	726	1.27	1.42
May	32,955	1,610	295	1,063	1.86	2.14
June	30,703	1,760	552	1,023	1.79	2.00
July	14,804	989	13	478	.837	.96
August	13,833	897	36	446	.781	.90
September	9,678	1,010	7	323	.566	.63
Water year 1939-40	175,908	1,760	7	481	.842	11.45

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 1940.

Average discharge.- 27 years (1908, 1914-40), 599 second-feet.

Extremes.- Maximum discharge during year, 1,540 second-feet June 10; minimum, 197 second-feet Dec. 14.

1906, 1914-40: 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 period of ice effect and no gage-height record, which are fair.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

0.8	258	1.8	700
1.0	331	2.2	910
1.2	413	2.6	1,150
1.5	550	3.0	1,440

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	508	435	439	325	305	370	450	790	720	735	690	536
2	503	431	471	325	315	370	500	800	675	635	660	503
3	471	431	489	325	315	385	550	800	645	565	584	453
4	444	426	503	330	315	370	620	800	599	536	565	444
5	426	426	503	335	315	370	700	795	589	490	579	405
6	409	435	489	335	325	370	760	785	624	435	555	388
7	405	512	485	335	325	370	850	760	800	392	489	379
8	396	517	475	340	325	370	938	735	1,050	388	439	400
9	422	471	466	340	325	355	965	705	1,370	388	409	400
10	494	475	466	340	325	340	992	675	1,540	384	375	388
11	536	a485	457	340	315	330	1,020	645	1,510	388	367	392
12	555	a500	444	*340	315	320	992	614	1,440	392	367	371
13	545	a485	347	340	*320	320	938	594	1,220	388	359	355
14	522	a470	312	340	320	320	855	594	992	367	363	339
15	498	a460	312	340	320	320	828	640	855	355	384	335
16	489	457	417	340	320	320	795	710	740	339	439	331
17	480	a455	512	340	340	335	780	760	690	327	475	327
18	471	a450	541	340	340	350	785	795	710	320	485	371
19	462	a450	471	330	340	360	828	855	750	320	475	417
20	448	a440	480	320	340	360	855	882	715	316	466	439
21	471	440	494	320	340	350	828	965	650	331	448	422
22	531	439	400	320	340	340	800	1,050	635	363	426	371
23	522	435	384	305	340	335	795	1,120	655	422	405	359
24	498	439	490	305	340	325	795	1,150	855	536	388	347
25	475	444	480	320	330	325	800	1,080	1,050	512	388	347
26	426	444	440	305	340	325	828	965	1,180	494	417	355
27	435	439	390	305	350	325	855	910	1,260	475	475	351
28	444	431	355	305	360	335	828	855	1,220	430	498	335
29	439	422	325	305	360	350	790	828	1,080	485	512	316
30	439	431	305	305	-	380	785	828	910	594	545	320
31	435	-	320	305	-	410	-	770	-	675	574	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,599	555	396	471	0.695	0.80
November	13,575	517	422	452	.667	.74
December	13,462	541	305	434	.640	.74
Calendar year 1939	252,198	3,500	305	691	1.02	13.82
January	10,100	340	305	326	.481	.55
February	9,560	360	305	330	.487	.53
March	10,805	410	320	349	.515	.59
April	24,105	1,020	450	804	1.19	1.33
May	25,255	1,150	594	815	1.20	1.38
June	27,729	1,540	589	924	1.36	1.52
July	13,776	735	316	444	.655	.76
August	14,601	690	359	471	.695	.80
September	11,496	536	316	383	.565	.63
Water year 1939-40	189,063	1,540	305	517	.763	10.37

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of recorded range of stage and records for Pike River at Amberg, Wis.

Note.- Stage-discharge relation affected by ice Dec. 24 to Apr. 7.

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, and 3½ miles east of Lakewood.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 95.58 feet Aug. 23; minimum, 94.93 feet Nov. 11-29.
1936-40: Maximum elevation observed, 95.62 feet June 17, 21, July 5, 1939; 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, 1939-40

Oct. 4	5.10	Nov. 25	4.93	July 5	5.47	Aug. 23	5.58
7	5.00	29	4.93	8	5.40	25	5.52
11	5.00	Dec. 2	4.94	12	5.35	30	5.45
14	4.98	6	4.95	15	5.33	Sept. 2	5.36
18	4.96	9	4.96	19	5.31	6	5.30
21	4.96	13	4.96	21	5.41	9	5.34
25	4.97	16	4.96	24	5.39	13	5.32
28	4.96	20	4.98	26	5.40	16	5.30
Nov. 1	4.95	23	5.00	29	5.50	20	5.34
4	4.94	27	5.01	Aug. 3	5.48	23	5.30
8	4.94	30	5.02	5	5.47	27	5.25
11	4.93	31	5.02	10	5.46	30	5.24
15	4.93	Apr. 29	5.57	12	5.44		
18	4.93	June 16	5.47	16	5.54		
22	4.93	July 1	5.49	19	5.56		

Note.- Add 90 feet to obtain elevations 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 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 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.56 feet Apr. 29, May 23; minimum, 96.20 feet Nov. 10.
1936-40: Maximum elevation observed, 97.00 feet July 4, 1939; 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, 1939-40

Oct. 3	96.45	Nov. 3	96.30	Apr. 29	96.56	July 29	96.47
9	96.40	10	96.20	May 23	96.56	Sept.13	96.30
12	96.41	24	96.35	June 14	96.52		
25	96.35	Apr. 25	96.54	22	96.48		

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, 2½ miles upstream from Barnes Creek.

Drainage area.- 1,430 square miles.

Records available.- January 1898 to September 1940.

Average discharge.- 42 years, 1,118 second-feet.

Extremes.- Maximum daily discharge during year, 4,720 second-feet June 28; minimum daily, 347 second-feet Jan. 16.
1898-1940: Maximum daily discharge, 6,620 second-feet Mar. 21, 23, 1929; minimum daily, 250 second-feet Feb. 1-4, 1900.

Remarks.- Records good except those 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	617	882	589	383	388	540	1,300	1,080	897	4,270	809	2,410
2	617	845	617	433	388	544	1,480	920	860	4,100	845	2,410
3	617	809	617	422	391	547	1,480	990	860	3,940	1,080	2,350
4	617	774	589	389	394	551	1,530	1,070	824	3,780	1,630	2,290
5	589	774	589	383	397	554	1,580	1,020	824	3,540	1,810	2,230
6	617	740	589	376	420	558	1,630	945	789	3,380	1,930	2,170
7	589	740	617	370	*441	586	1,630	910	755	3,230	1,930	2,070
8	589	707	589	365	441	589	1,750	900	1,050	3,090	1,930	1,930
9	617	707	589	376	441	615	1,750	935	1,090	2,950	1,870	1,810
10	617	707	589	370	441	640	1,750	925	1,090	2,880	1,810	1,690
11	676	707	562	385	441	*648	1,820	855	1,050	2,740	1,690	1,580
12	676	707	589	378	441	648	1,760	855	1,050	2,600	1,580	1,430
13	676	707	589	371	442	648	1,760	845	1,050	2,530	1,430	1,330
14	646	707	489	403	444	590	1,760	750	1,010	2,410	1,330	1,230
15	646	676	536	396	468	563	1,700	780	1,000	2,290	1,230	1,130
16	707	676	589	347	470	592	1,650	740	920	2,170	1,180	1,080
17	646	676	589	350	473	620	1,600	740	845	1,990	1,180	1,040
18	617	676	589	351	476	650	1,540	740	882	1,870	1,580	1,040
19	646	676	589	364	480	654	1,490	790	960	1,750	1,930	1,040
20	646	646	589	382	483	744	1,490	930	920	1,580	2,110	1,000
21	676	617	489	379	486	750	1,430	970	882	1,430	2,230	1,000
22	646	646	512	376	489	780	1,380	1,000	1,380	1,250	2,350	1,000
23	617	646	560	374	513	750	1,330	960	2,230	1,180	2,410	960
24	617	646	590	371	537	720	1,270	960	3,160	1,130	2,410	1,000
25	617	646	560	368	513	720	1,270	910	3,800	1,040	2,470	960
26	617	646	550	368	513	690	1,220	875	4,360	1,000	2,470	960
27	646	646	510	368	537	660	1,130	875	4,640	1,000	2,530	960
28	617	562	530	368	537	690	1,130	940	4,720	960	2,530	960
29	707	562	510	368	537	780	1,090	940	4,630	920	2,470	920
30	707	589	495	368	-	900	1,120	935	4,450	882	2,470	920
31	882	-	435	368	-	1,050	-	900	-	845	2,470	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20,017	882	589	646	0.452	0.52
November	20,745	882	562	692	.484	.54
December	17,425	617	435	562	.393	.45
Calendar year 1939	386,867	4,910	435	1,060	.741	10.05
January	11,670	433	347	376	.263	.30
February	13,422	537	388	463	.324	.35
March	20,571	1,050	540	664	.464	.53
April	44,820	1,820	1,090	1,494	1.04	1.16
May	27,985	1,080	740	903	.631	.73
June	52,978	4,720	755	1,766	1.23	1.37
July	68,727	4,270	845	2,217	1.55	1.79
August	57,694	2,530	809	1,861	1.30	1.50
September	42,900	2,410	920	1,430	1.00	1.12
Water year 1939-40	398,954	4,720	347	1,090	.782	10.36

* Winter discharge measurement made on this day.

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 is 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 1940. Records from 1857 to 1938 in files of Corps of Engineers, U. S. Army. A report on Fox River by Corps of Engineers, U. S. Army, is published as House Document No. 146, 67th Congress, 2nd Session.

Extremes.- Maximum gage height observed during year, 3.42 feet June 24, 26; minimum observed, 0.46 foot Mar. 25, 26.

1857-1940: 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 above mean sea level. Present limits of regulation are from 21¼ inches above crest of Menasha Dam down to crest during the navigation season, plus an additional 18 to 24 inches below 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.17	2.04	1.96	1.62	1.19	0.79	0.52	2.02	2.62	3.23	2.94	3.04
2	2.12	2.08	1.90	1.60	1.17	.77	.54	2.08	2.52	3.17	3.02	3.08
3	2.08	2.06	1.96	1.58	1.15	.77	.67	2.19	2.65	3.15	2.94	3.00
4	2.08	2.06	1.98	1.56	1.15	.75	.67	2.17	2.62	3.12	3.23	3.00
5	2.06	2.06	1.96	1.52	1.12	.75	.73	2.12	2.67	3.08	3.31	3.00
6	2.06	2.06	1.94	1.50	1.10	.73	.79	2.08	2.77	3.04	3.23	2.98
7	2.04	2.02	1.77	1.50	1.08	.71	.88	2.27	2.88	3.06	3.17	2.96
8	2.02	2.04	1.94	1.50	1.08	.67	.94	2.31	2.85	3.10	3.12	2.98
9	2.15	2.10	1.92	1.48	1.06	.65	1.04	2.27	2.88	3.17	3.12	3.00
10	2.12	2.00	1.92	1.48	1.04	.62	1.10	2.25	2.90	3.02	3.10	2.81
11	2.08	2.02	1.92	1.46	1.02	.60	1.19	2.25	2.92	3.15	3.08	2.92
12	2.04	2.00	1.79	1.40	1.00	.60	1.25	2.25	2.98	3.17	3.06	2.83
13	2.12	2.00	1.77	1.42	.98	.52	1.33	2.25	2.98	3.15	3.06	2.73
14	2.10	2.04	1.83	1.46	1.00	.56	1.42	2.38	2.92	3.12	3.08	2.79
15	2.06	2.02	1.83	1.48	.96	.54	1.48	2.31	2.94	3.10	3.08	2.75
16	2.02	2.02	1.79	1.46	.94	.52	1.50	2.31	2.94	3.06	3.00	2.73
17	2.08	2.04	1.79	1.42	.92	.52	1.54	2.33	2.92	3.08	3.08	2.67
18	2.02	2.00	1.77	1.40	.90	.50	1.62	2.33	2.69	3.19	3.10	2.75
19	2.02	2.02	1.77	1.38	.85	.50	1.67	2.42	3.00	3.02	3.12	2.65
20	2.00	2.04	1.75	1.38	.85	.52	1.75	2.38	2.98	3.04	3.10	2.65
21	2.06	2.04	1.75	1.35	.83	.50	1.79	2.44	2.96	3.08	3.08	2.75
22	2.04	1.98	1.75	1.35	.83	.50	1.83	2.42	3.04	3.08	3.12	2.69
23	2.06	2.00	1.73	1.33	.83	.48	1.90	2.52	3.29	3.08	3.10	2.62
24	2.10	2.00	1.73	1.33	.85	.45	1.85	2.52	3.42	3.06	3.06	2.52
25	2.02	1.96	1.71	1.31	.83	.46	1.92	2.50	3.40	3.00	3.10	2.62
26	2.08	1.94	1.71	1.29	.81	.46	1.94	2.50	3.42	2.94	3.19	2.58
27	1.98	1.94	1.69	1.27	.79	.48	2.00	2.54	3.38	3.00	3.23	2.52
28	2.00	1.94	1.67	1.27	.79	.50	1.98	2.62	3.31	2.98	3.10	2.50
29	2.04	1.92	1.67	1.25	.77	.50	1.96	2.65	3.33	2.94	3.08	2.54
30	2.08	1.92	1.65	1.25	-	.48	2.12	2.65	3.31	2.96	3.10	2.52
31	2.06	-	1.65	1.23	-	.50	-	2.65	-	2.92	3.06	-

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 1940.

Average discharge.- 44 years, 4,284 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 17,500 second-feet June 26; minimum daily, 1,470 second-feet Apr. 14.
1918-40: 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. 51). 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,320	2,250	3,470	2,480	3,240	2,940	3,450	2,230	3,120	15,700	3,890	8,600
2	2,320	2,380	3,050	3,060	3,240	2,970	2,630	2,680	2,940	14,900	4,090	8,070
3	2,840	2,350	2,590	2,920	3,140	2,600	3,240	2,910	3,870	13,500	3,860	9,120
4	2,510	2,300	2,960	2,810	2,510	3,050	2,950	2,720	3,870	14,600	4,220	5,910
5	2,180	2,150	3,080	2,950	3,390	2,780	2,740	2,210	3,570	12,700	4,120	5,910
6	2,160	2,320	3,340	2,730	3,330	3,700	1,800	2,990	3,450	10,000	4,450	6,000
7	2,050	2,590	2,950	2,230	3,080	3,560	1,830	2,630	3,710	7,480	5,540	5,650
8	2,400	2,320	3,080	3,030	3,070	3,560	2,510	2,870	3,660	5,760	5,410	4,670
9	2,770	2,560	3,550	3,060	3,020	3,330	2,300	2,880	3,320	5,380	5,320	5,130
10	2,330	2,570	2,890	3,050	2,550	3,060	2,400	2,740	3,840	5,500	5,020	4,520
11	2,600	2,580	2,970	2,910	2,430	3,640	2,420	2,860	3,720	4,810	4,900	4,710
12	2,370	1,850	3,160	2,890	3,190	3,360	2,380	2,260	3,750	3,790	4,700	4,540
13	2,380	2,360	2,870	2,910	2,980	3,710	2,220	2,960	3,960	4,420	3,960	4,520
14	2,400	2,700	3,040	2,370	3,100	3,170	1,470	2,880	4,100	4,330	3,920	3,850
15	2,200	2,600	3,160	2,860	3,190	3,680	2,500	2,970	4,670	3,880	4,070	4,120
16	2,280	2,820	3,210	2,820	3,130	3,330	2,420	2,710	4,520	4,160	4,120	3,930
17	2,380	2,770	2,540	2,910	2,880	2,800	2,440	2,750	4,670	4,390	3,730	4,500
18	2,520	2,560	2,900	2,820	2,740	3,680	2,380	2,820	4,220	4,250	3,530	4,620
19	2,440	2,260	3,120	2,660	3,140	3,510	2,560	2,760	3,400	4,280	3,850	4,210
20	2,360	2,830	3,020	3,060	2,980	3,650	2,230	3,170	3,910	4,040	3,880	4,190
21	2,190	2,790	2,710	2,710	3,040	3,540	2,160	3,230	4,100	3,850	5,010	3,910
22	1,990	2,540	2,380	2,970	3,020	3,330	2,580	3,140	4,870	3,890	5,050	3,640
23	2,230	2,900	2,910	2,960	3,030	3,420	2,580	3,210	6,230	4,150	5,100	3,890
24	2,240	2,600	2,470	2,780	2,980	2,840	2,520	2,970	8,140	4,160	5,010	4,290
25	2,440	2,480	2,620	2,940	2,430	3,660	2,580	2,850	16,500	4,260	4,970	3,890
26	2,250	2,130	3,560	3,100	3,270	3,580	2,580	2,760	17,500	3,870	5,600	4,180
27	2,320	2,310	3,180	3,140	2,960	3,550	2,840	3,410	17,400	3,840	7,990	4,160
28	2,010	2,760	3,110	2,500	3,100	3,480	2,150	3,220	17,300	3,450	8,070	3,780
29	2,310	2,820	3,060	3,320	2,940	3,740	2,680	3,240	16,400	4,170	8,100	2,620
30	2,270	3,220	2,360	3,860	-	3,080	2,830	3,470	16,200	3,650	8,010	3,090
31	2,550	-	2,350	3,430	-	3,100	-	3,190	-	3,760	7,700	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	72,610	2,840	1,990	2,342	0.381	0.44
November	75,670	3,220	1,850	2,522	.410	.46
December	91,660	3,560	2,350	2,957	.481	.55
Calendar year 1939	1,525,600	11,100	1,240	4,180	.680	9.21
January	90,240	3,860	2,230	2,911	.473	.55
February	87,100	3,390	2,430	3,003	.488	.53
March	103,400	3,740	2,600	3,335	.542	.62
April	74,370	3,450	1,470	2,479	.403	.45
May	89,890	3,470	2,210	2,893	.470	.54
June	200,210	17,500	2,940	6,674	1.09	1.22
July	190,920	15,700	3,450	6,159	1.00	1.15
August	157,190	8,100	3,530	5,071	.825	.95
September	144,220	9,120	2,620	4,807	.782	.87
Water year 1939-40	1,377,280	17,500	1,470	3,763	.612	8.33

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, on southeast end of lake.

Drainage area.- 1 square mile.

Records available.- August 1936 to September 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 91.62 feet Aug. 30; minimum, 91.06 feet Aug. 2.
1936-40: 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, 1939-40

Mar. 19	6.18	May 10	6.20	July 5	6.33	Aug. 30	6.62
23	6.28	17	6.18	12	6.22	Sept. 6	6.59
Apr. 4	6.45	25	6.25	19	6.13	13	6.50
6	6.45	31	6.30	27	6.08	20	6.50
13	6.45	June 8	6.35	Aug. 2	6.06	27	6.50
19	6.40	15	6.30	9	6.10		
26	6.30	21	6.25	16	6.25		
May 3	6.28	28	6.45	24	6.46		

Note.- Add 85 feet to obtain elevations 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 1½ miles north of Markesan.

Drainage area.- 5 square miles.

Records available.- August 1936 to September 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.74 feet June 23, 24; minimum, 94.40 feet Nov. 7, 8, 15-22, Dec. 6-14.
1936-40: Maximum elevation observed, 96.74 feet June 23, 24, 1940; minimum, 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, 1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	4.46	-				-	-	4.84	6.30	5.50	5.62
2	-	4.44	4.42				-	-	4.84	6.24	5.50	5.62
3	4.52	4.44	4.42				-	4.86	4.84	6.20	5.58	5.60
4	4.50	4.44	4.42				-	4.86	4.84	6.16	5.62	5.60
5	4.48	4.42	-				-	4.86	4.82	6.12	5.62	5.60
6	4.46	4.42	4.40				-	4.86	4.82	6.06	5.62	5.58
7	4.44	4.40	4.40				-	4.86	4.82	6.02	5.60	5.58
8	4.42	4.40	4.40				-	4.88	5.14	5.98	5.60	5.56
9	4.48	4.44	4.40				-	4.88	5.14	5.94	5.58	5.54
10	4.52	4.44	4.40				-	4.88	5.14	5.96	5.58	5.52
11	-	4.44	4.40				-	4.88	5.14	5.96	5.56	5.50
12	-	4.42	4.40				-	-	5.12	5.92	5.56	5.48
13	4.50	4.42	4.40				-	4.86	5.12	5.90	5.58	5.46
14	4.50	4.42	4.40				4.72	-	5.12	5.86	5.58	5.44
15	4.48	4.40	-				4.72	4.86	5.10	5.82	5.58	5.42
16	4.48	4.40	-				4.72	4.84	5.10	5.80	5.58	5.40
17	4.46	4.40	-				4.72	4.84	5.10	5.76	5.62	5.38
18	-	4.40	-				4.80	4.84	5.12	5.72	5.66	5.40
19	-	4.40	-				4.80	4.86	5.16	5.70	5.64	5.40
20	4.46	4.40	-				4.80	-	5.16	5.68	5.62	5.40
21	4.46	4.40	-				4.86	4.92	5.14	5.70	5.58	5.40
22	4.46	4.40	-				4.86	4.90	6.22	5.70	5.56	5.40
23	4.46	-	-				4.86	4.90	6.74	5.68	5.54	5.42
24	4.46	-	-				4.86	4.90	6.74	5.66	5.52	5.44
25	4.46	-	-				4.84	4.90	-	5.64	5.60	5.42
26	4.48	-	-				4.84	4.90	6.62	5.64	5.62	5.42
27	-	-	-				4.84	4.90	6.54	5.62	5.62	5.42
28	4.48	-	-				4.82	4.88	-	5.60	5.60	5.40
29	4.48	-	-				4.82	4.86	-	5.60	5.70	5.40
30	4.48	-	-				-	4.86	6.36	5.56	5.68	5.38
31	4.48	-	-				-	4.84	-	5.52	5.68	-

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 1940.

Average discharge.- 12 years, 543 second-feet.

Extremes.- Maximum discharge observed during year, 1,540 second-feet June 9 (gage height, 4.44 feet); minimum observed, 258 second-feet Nov. 12.
1928-40: 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 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.8	333	2.9	748
2.0	396	3.2	889
2.3	500	3.6	1,090
2.6	619	4.0	1,310

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	430	430	464	370	400	390	480	1,090	a570	1,040	704	661
2	430	430	464	400	400	410	520	1,040	841	988	661	661
3	413	430	464	390	400	410	580	988	794	938	661	619
4	396	413	464	360	390	410	640	988	748	889	704	578
5	396	430	430	330	390	400	704	988	794	841	661	500
6	413	413	430	320	380	400	748	938	1,200	794	619	464
7	396	413	464	330	380	400	889	889	1,420	748	578	464
8	396	430	430	340	380	400	938	889	1,420	704	619	464
9	500	430	430	350	370	400	1,040	841	1,540	661	619	464
10	538	464	430	a350	370	400	938	794	1,420	578	619	464
11	538	430	430	350	370	400	841	748	1,310	538	619	430
12	500	258	430	360	360	420	704	748	1,250	538	578	430
13	464	538	413	370	360	420	704	661	1,150	500	a540	430
14	464	464	270	380	*360	420	704	704	1,040	464	619	430
15	430	464	306	a410	360	420	704	841	988	430	661	430
16	430	464	619	370	360	400	748	889	988	430	704	430
17	413	464	538	350	360	420	794	889	988	413	794	430
18	413	500	464	350	380	420	748	938	1,200	413	794	a550
19	413	500	500	350	390	420	794	988	1,200	413	748	619
20	413	464	380	360	390	420	794	1,150	1,150	413	661	578
21	430	430	306	370	390	400	841	1,250	1,090	538	661	500
22	430	430	396	380	390	370	841	1,200	1,090	578	661	464
23	413	430	430	380	340	360	889	1,200	1,090	578	619	464
24	413	464	460	390	350	360	889	1,090	1,370	578	661	464
25	413	430	500	400	370	350	938	1,040	1,480	704	704	464
26	413	430	620	400	370	360	938	988	1,370	661	748	464
27	464	430	520	400	370	370	938	988	1,250	661	748	430
28	430	430	510	400	370	380	889	988	1,200	661	748	430
29	430	430	470	400	a370	380	889	988	1,150	889	794	430
30	430	430	420	400	-	420	98e	938	1,150	938	748	430
31	430	-	370	400	-	480	-	889	-	841	704	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13,482	538	396	435	0.687	0.79
November	13,163	638	258	439	.694	.77
December	13,722	619	270	443	.700	.81
Calendar year 1939	237,465	2,070	258	651	1.03	13.94
January	11,510	410	320	371	.586	.68
February	10,870	400	340	375	.592	.64
March	12,410	480	350	400	.632	.73
April	24,052	1,040	480	802	1.27	1.42
May	29,560	1,250	661	954	1.51	1.74
June	34,551	1,540	748	1,152	1.82	2.03
July	20,360	1,040	413	657	1.04	1.20
August	20,959	794	540	676	1.07	1.23
September	14,636	661	430	488	.771	.86
Water year 1939-40	219,275	1,540	258	599	.946	12.90

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station at Keshena Falls.
Note.- Stage-discharge relation affected by ice Dec. 23 to Apr. 4.

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 below West Branch of Wolf River.

Drainage area.- 812 square miles.

Records available.- March 1928 to September 1940. May 1907 to March 1909 and February 1911 to March 1928 at site at Keshena, 1½ miles downstream.

Average discharge.- 30 years (1907-8, 1911-40), 782 second-feet.

Extremes.- Maximum discharge during year, 2,250 second-feet June 9 (gage height, 7.50 feet); minimum, 91 second-feet Dec. 22 (gage height, 4.67 feet), flow retarded temporarily by formation of ice above station.
1907-9, 1911-40: Maximum discharge observed, 4,390 second-feet Apr. 10, 1922, from rating curve extended above 2,100 second-feet; minimum discharge, that of Dec. 22, 1939.

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

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

5.4	419	6.8	1,530
5.7	600	7.2	1,930
6.0	823	7.5	2,250
6.4	1,160		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	635	621	574	490	500	480	840	1,300	985	1,250	928	895
2	587	621	635	530	500	480	919	1,250	969	1,150	863	847
3	580	587	649	520	500	500	977	1,190	977	1,120	839	807
4	561	554	621	460	540	510	1,090	1,170	952	1,050	895	753
5	548	568	580	430	560	530	985	1,200	1,000	1,020	863	670
6	548	568	587	420	530	530	1,060	1,150	1,300	969	800	621
7	548	529	607	500	510	530	1,160	1,100	1,980	928	738	587
8	542	568	600	470	490	520	1,200	1,060	2,200	887	738	614
9	600	580	574	470	490	520	1,250	1,030	2,200	807	751	600
10	738	607	594	460	480	520	1,220	994	1,980	722	738	561
11	745	568	600	*470	540	520	1,130	952	1,730	678	768	561
12	708	511	574	470	540	510	969	919	1,530	678	745	561
13	663	614	535	470	500	500	928	863	1,380	656	692	554
14	635	649	493	500	*480	510	895	903	1,250	649	753	548
15	607	628	523	540	480	520	911	1,000	1,200	600	985	574
16	600	600	580	480	480	540	936	1,080	1,150	561	1,080	568
17	580	635	730	450	480	570	985	1,120	1,150	535	1,120	529
18	554	635	642	450	540	570	994	1,070	1,300	542	1,080	800
19	568	656	621	450	540	570	969	1,140	1,480	535	1,040	994
20	568	621	594	460	500	570	1,020	1,380	1,380	548	1,000	969
21	568	568	458	500	520	560	1,060	1,630	1,300	642	911	776
22	580	554	496	530	500	530	1,110	1,480	1,300	761	879	685
23	574	535	692	490	490	480	1,120	1,430	1,340	903	851	649
24	542	594	753	500	480	520	1,140	1,340	1,630	800	839	649
25	554	580	715	520	520	520	1,190	1,240	2,030	761	903	628
26	568	574	685	520	520	470	1,190	1,200	1,930	863	994	600
27	600	561	678	520	510	480	1,130	1,200	1,630	839	1,000	574
28	587	554	685	550	490	510	1,100	1,200	1,480	647	1,030	568
29	600	554	628	540	480	560	1,090	1,200	1,380	1,040	1,060	587
30	587	574	570	520	-	630	1,150	1,130	1,340	1,250	1,000	-
31	594	-	480	500	-	770	-	1,070	-	1,090	928	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18,469	745	542	596	0.734	0.85
November	17,568	656	511	586	.722	.81
December	18,753	753	458	605	.745	.86
Calendar year 1939	320,343	2,580	440	878	1.08	14.68
January	15,180	550	420	490	.603	.70
February	14,690	560	480	507	.624	.67
March	16,530	770	470	533	.656	.76
April	31,718	1,250	840	1,057	1.30	1.45
May	35,991	1,630	863	1,161	1.43	1.65
June	43,453	2,200	952	1,448	1.78	1.99
July	25,661	1,250	535	828	1.02	1.18
August	27,801	1,120	692	897	1.10	1.27
September	19,916	994	529	664	.818	.91
Water year 1939-40	285,730	2,200	420	781	.962	13.10

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 30 to Apr. 1.

Wolf River at New London, Wisc.

Location.- Staff gage, lat. 44°23', long. 88°44', in sec. 12, T. 22 N., R. 14 E., on 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 1940.
Average discharge.- 27 years, 1,794 second-feet.
Extremes.- Maximum discharge observed during year, 4,880 second-feet July 1, 2 (gage height, 7.2 feet); minimum observed, 640 second-feet Jan. 9, 10.
1913-40: 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 period 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 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 4		Apr. 5 to Sept. 30			
1.1	845	1.5	995	6.0	3,600
1.4	957	2.0	1,190	6.5	4,090
1.7	1,070	2.5	1,420	7.0	4,650
2.0	1,180	3.0	1,680	7.5	5,260
2.5	1,360	4.0	2,230		
3.0	1,540	5.0	2,830		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	1,070	1,030	800	900	990	1,890	2,170	2,400	4,880	1,420	2,000
2	1,140	1,110	1,030	760	950	990	2,050	2,230	2,230	4,880	1,520	1,950
3	1,180	1,070	1,110	760	990	990	1,950	2,230	2,110	4,760	1,520	1,890
4	1,140	1,070	1,180	760	990	990	1,950	2,290	2,000	4,410	1,520	1,780
5	1,070	1,070	1,180	830	950	960	2,700	2,400	1,890	3,980	1,520	1,620
6	1,030	1,110	1,180	790	900	960	2,970	2,460	1,780	3,600	1,470	1,470
7	995	1,070	1,140	755	920	1,050	3,150	2,460	1,780	3,340	1,420	1,370
8	995	1,030	1,070	755	960	1,060	3,430	2,460	2,000	3,040	1,330	1,230
9	995	1,030	1,030	640	1,020	1,080	3,520	2,350	2,400	2,640	1,230	1,150
10	1,030	1,070	1,030	*640	970	1,080	3,520	2,230	2,700	2,290	1,190	1,150
11	1,140	1,110	1,070	750	950	1,110	3,600	2,170	2,970	1,890	1,190	1,070
12	1,290	1,070	1,070	775	950	1,110	3,600	2,050	3,040	1,730	1,150	1,070
13	1,400	1,030	1,110	790	930	1,080	3,520	1,890	3,180	1,620	1,110	1,030
14	1,400	1,030	1,030	820	930	1,050	3,430	1,780	3,430	1,520	1,110	1,030
15	1,320	995	845	845	970	1,030	3,430	1,780	3,690	1,420	1,150	995
16	1,250	1,030	882	815	970	1,050	3,340	1,780	3,780	1,330	1,370	995
17	1,210	1,070	919	795	970	1,080	3,040	1,780	3,690	1,280	1,620	995
18	1,140	1,070	957	840	970	1,110	2,830	1,730	3,430	1,190	1,840	1,030
19	1,110	1,030	995	880	970	1,230	2,700	1,840	3,180	1,150	2,000	1,570
20	1,070	995	1,070	880	970	1,480	2,640	2,000	3,040	1,150	2,050	2,110
21	1,070	1,030	1,030	840	970	1,600	2,580	2,290	2,900	1,190	2,050	2,350
22	1,070	1,070	957	840	990	1,640	2,520	2,520	2,830	1,110	2,050	2,460
23	1,030	1,030	930	840	990	1,550	2,400	2,700	2,970	1,150	1,950	2,520
24	995	1,030	900	820	990	1,420	2,400	2,700	3,260	1,280	1,890	2,520
25	1,030	1,030	870	860	970	1,260	2,350	2,700	3,880	1,370	1,780	2,400
26	1,030	1,030	860	860	960	1,150	2,290	2,640	4,190	1,470	1,780	2,170
27	1,070	1,030	850	885	960	1,140	2,290	2,580	4,410	1,330	1,840	1,890
28	1,110	1,030	840	885	980	1,140	2,230	2,580	4,650	1,280	1,950	1,620
29	1,070	1,030	840	885	990	1,140	2,170	2,520	4,760	1,280	2,000	1,470
30	1,070	1,030	840	850	-	1,450	2,170	2,520	4,760	1,280	2,050	1,370
31	1,030	-	830	825	-	1,700	-	2,520	-	1,370	2,050	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	34,660	1,400	995	1,118	0.499	0.58
November	31,470	1,110	995	1,049	.468	.52
December	30,675	1,180	830	990	.442	.51
Calendar year 1939	708,780	11,100	808	1,942	.867	11.78
January	25,070	885	640	809	.361	.42
February	27,930	1,020	900	963	.430	.46
March	36,660	1,700	960	1,183	.528	.61
April	82,690	3,600	1,890	2,756	1.23	1.37
May	70,350	2,700	1,730	2,269	1.01	1.16
June	93,330	4,760	1,780	3,111	1.39	1.55
July	66,210	4,880	1,110	2,136	.954	1.10
August	50,120	2,050	1,110	1,617	.722	.83
September	48,275	2,520	995	1,609	.718	.80
Water year 1939-40	597,440	4,880	640	1,632	.729	9.91

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 23 to Apr. 4.

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 1940.

Average discharge.- 21 years, 294 second-feet.

Extremes.- Maximum discharge during year, 2,310 second-feet June 9, 10 (gage height, 6.82 feet); minimum, 40 second-feet July 9.

1919-40: 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 period of ice effect, which are fair. Slight diurnal fluctuation caused by power plants above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	231	173	159	130	130	150	512	306	281	413	159	242
2	206	153	206	130	130	150	638	408	246	311	197	167
3	182	167	167	130	135	155	587	447	273	273	132	231
4	153	159	194	130	135	155	673	423	294	220	142	176
5	153	142	179	135	140	160	653	472	302	254	153	145
6	137	142	185	140	140	160	632	467	306	214	146	134
7	148	134	162	125	140	160	617	423	762	167	153	140
8	129	162	165	115	140	160	648	375	1,380	159	170	100
9	173	153	165	110	140	140	720	351	2,100	70	115	92
10	285	167	159	110	140	120	779	333	2,170	151	113	137
11	315	170	170	*105	140	160	736	277	1,540	159	95	121
12	328	118	153	110	140	180	643	231	1,020	191	108	123
13	277	140	148	110	140	180	477	235	715	191	121	123
14	242	162	148	120	140	150	384	246	452	188	182	134
15	194	156	191	125	*140	140	408	261	281	173	234	123
16	197	148	134	130	140	120	342	298	298	148	228	140
17	173	153	110	130	140	115	365	294	231	140	258	137
18	176	151	140	130	140	159	384	306	408	195	315	481
19	200	170	159	130	140	203	413	315	587	140	337	668
20	151	162	173	130	140	200	413	582	597	134	306	582
21	188	153	194	130	140	217	399	784	467	134	188	457
22	132	145	182	130	140	214	389	715	356	159	194	384
23	140	137	182	130	140	200	370	582	632	228	203	298
24	145	159	191	130	140	176	375	457	920	342	197	242
25	167	159	190	130	140	153	375	360	1,740	238	167	194
26	162	110	180	130	145	156	351	311	1,750	210	231	185
27	167	148	160	130	145	188	328	315	1,440	129	268	191
28	185	153	150	130	150	132	328	408	1,020	95	220	194
29	132	137	140	130	150	179	319	522	705	148	250	148
30	173	132	140	130	-	238	315	423	457	191	277	153
31	153	-	130	130	-	356	-	342	-	173	214	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,794	328	129	187	0.473	0.55
November	4,515	173	110	150	.380	.42
December	5,106	206	110	165	.418	.48
Calendar year 1939	117,727	3,330	80	323	.818	11.10
January	3,905	140	105	126	.319	.37
February	4,060	150	130	140	.354	.38
March	5,326	356	115	172	.435	.50
April	14,573	779	315	486	1.23	1.37
May	12,319	784	231	397	1.01	1.16
June	23,730	2,170	231	791	2.00	2.23
July	5,928	413	70	191	.484	.56
August	6,045	337	95	195	.494	.57
September	6,642	668	92	221	.559	.62
Water year 1939-40	97,943	2,170	70	268	.678	9.21

Peak discharge.- June 9 (2 p.m.) 2,310 sec.-ft.; June 10 (1 a.m.) 2,310 sec.-ft. June 25 (1 p.m.) 1,960 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 16.

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 1940.

Average discharge.- 26 years, 435 second-feet.

Extremes.- Maximum discharge during year, 2,500 second-feet June 26 (gage height, 4.14 feet); minimum, 129 second-feet Oct. 8 (gage height, 1.08 feet).

1914-40: 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.- Records good except those for period of ice effect, which are poor. Diurnal fluctuation caused by power plant 6 miles above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	311	265	249	150	210	240	657	410	373	521	263	397
2	353	269	304	160	210	220	885	479	332	493	233	343
3	271	257	312	170	220	220	717	479	332	472	240	322
4	264	247	327	160	210	230	906	486	332	416	288	259
5	257	228	255	170	210	220	1,010	507	305	373	280	279
6	260	258	274	180	210	230	878	542	311	379	260	285
7	247	240	284	170	220	230	738	493	343	316	211	247
8	215	237	253	160	220	230	865	479	689	312	206	227
9	322	241	275	170	210	240	892	391	857	318	204	269
10	386	264	249	170	210	240	906	379	1,050	314	211	230
11	468	298	235	180	200	240	956	366	857	373	224	231
12	450	225	249	200	*200	240	899	322	626	379	224	223
13	331	255	247	220	200	240	773	322	444	385	269	239
14	353	255	237	190	200	250	633	360	360	354	222	228
15	306	254	383	180	210	260	549	472	322	286	278	222
16	297	239	214	190	240	300	521	391	235	257	507	241
17	287	246	248	190	220	300	521	338	311	281	526	242
18	274	265	278	190	210	320	591	404	327	252	507	281
19	256	243	233	200	210	360	584	410	444	252	423	410
20	279	245	258	200	210	390	647	710	514	262	a350	465
21	270	231	309	200	210	300	584	801	354	239	a320	366
22	253	237	340	210	220	270	451	801	507	404	a340	271
23	257	234	330	200	210	250	535	626	836	367	a350	300
24	253	241	320	210	220	250	493	500	1,780	425	a360	265
25	245	257	300	200	220	240	437	514	2,340	301	a310	262
26	248	220	290	210	190	250	493	410	2,440	282	366	268
27	287	226	270	220	210	250	458	458	2,130	246	493	276
28	303	229	260	210	230	280	379	521	1,550	218	458	259
29	284	229	240	220	220	360	373	612	1,130	289	486	226
30	276	231	220	210	-	787	397	542	780	315	500	242
31	273	-	200	210	-	850	-	416	-	278	430	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,136	468	215	295	0.608	0.70
November	7,366	298	220	246	.507	.57
December	8,443	383	200	272	.561	.65
Calendar year 1939	158,733	5,700	170	435	.897	12.17
January	5,950	220	160	192	.396	.46
February	6,160	240	190	212	.437	.47
March	9,307	850	220	300	.619	.71
April	19,948	1,010	373	665	1.37	1.53
May	14,941	801	322	482	.994	1.15
June	23,211	2,440	235	774	1.60	1.78
July	10,359	521	218	334	.689	.79
August	10,341	528	204	334	.689	.79
September	8,375	465	222	279	.575	.64
Water year 1939-40	133,537	2,440	160	365	.753	10.24

Peak discharge.- May 20 (7 p.m.) 878 sec.-ft.; June 26 (7 a.m.) 2,500 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of recorded range of stage and records for Embarrass River near Embarrass.

Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 29.

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 1940. June 1916 to October 1917 at site 1 mile downstream.

Average discharge.- 24 years, 251 second-feet.

Extremes.- Maximum discharge during year, 1,750 second-feet June 24 (gage height, 5.69 feet), from rating curve extended above 1,000 second-feet; minimum, 133 second-feet Nov. 28 (gage height, 1.27 feet).

1916-40: 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 discharge, 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 1939-40, except period of ice effect, (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-20)

1.6	215	2.2	415	3.2	769	4.5	1,230
1.8	277	2.5	523	3.6	907	5.0	1,430
2.0	344	2.8	630	4.0	1,050		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	230	216	185	205	250	421	221	196	387	233	294
2	242	224	233	175	205	250	334	220	202	362	254	282
3	227	224	231	175	205	250	373	231	215	336	272	253
4	221	215	225	180	210	260	481	247	194	331	329	265
5	221	215	211	180	210	250	358	254	190	323	325	249
6	224	227	214	185	*210	250	316	238	197	303	294	252
7	221	a219	210	185	210	255	343	221	212	294	254	245
8	224	a211	204	190	210	260	368	213	366	297	249	245
9	236	a225	206	195	210	255	349	211	574	285	236	252
10	267	a235	202	*195	205	255	347	205	348	302	231	236
11	287	210	232	200	210	250	364	194	254	293	244	237
12	271	217	189	205	210	240	327	185	243	290	251	237
13	264	216	191	210	210	230	284	198	237	273	237	234
14	261	203	211	210	215	240	269	204	216	268	262	226
15	248	209	219	210	215	260	266	217	205	273	452	207
16	255	209	189	205	215	270	250	205	196	256	492	239
17	245	205	195	205	215	275	249	196	214	254	347	231
18	248	206	215	200	215	277	265	194	286	251	441	235
19	239	199	209	200	220	293	279	236	410	250	438	268
20	239	222	214	200	220	294	268	314	254	251	364	252
21	224	199	215	200	220	256	258	292	228	250	298	239
22	224	207	221	200	215	237	248	272	526	246	296	233
23	230	206	210	200	205	270	236	238	1,160	247	283	233
24	221	201	200	200	190	290	229	222	1,500	248	280	239
25	224	209	185	200	215	270	230	217	1,230	236	286	228
26	218	205	175	200	245	248	225	210	1,050	238	320	214
27	227	213	175	200	245	221	222	228	745	234	347	227
28	230	191	180	200	250	224	204	250	608	237	252	239
29	236	200	185	200	260	247	222	236	513	241	348	245
30	242	200	195	205	-	364	215	223	439	258	317	245
31	218	-	200	205	-	447	-	213	-	248	302	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,376	287	218	238	0.780	0.90
November	6,351	235	191	212	.695	.78
December	6,357	233	175	205	.672	.77
Calendar year 1939	97,034	1,570	166	266	.872	11.81
January	6,100	210	175	197	.646	.74
February	6,270	260	190	216	.708	.76
March	8,238	447	221	266	.872	1.01
April	8,802	481	204	293	.961	1.07
May	7,005	314	165	226	.741	.85
June	13,208	1,600	190	440	1.44	1.61
July	8,564	387	234	276	.905	1.04
August	9,634	492	231	311	1.02	1.18
September	7,281	294	207	243	.797	.89
Water year 1939-40	95,186	1,600	175	260	.852	11.60

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage.
Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 17, Mar. 23-25.

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 2½ 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 1940.

Extremes.- Maximum discharge during year, 1,000 second-feet June 22 (gage height, 5.28 feet); no flow Oct. 21-23, Oct. 28 to Feb. 26, Mar. 11-16.
1939-40: Maximum discharge, that of June 22, 1940; no flow on many days.

Remarks.- Records good except those below 1 second-foot and those for period of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1				0	0.3	20	9.4	5.8	241	3.5	19
2	.1				0	.3	20	12	5.3	210	6.6	17
3	.1				0	.3	24	19	4.4	179	19	15
4	.1				0	.3	24	20	3.9	156	20	13
5	.1				0	.3	22	17	4.2	132	12	13
6	.1				0	.5	20	17	3.6	114	8.8	12
7	.1				0	.5	23	17	3.4	95	7.1	11
8	.1				0	.4	32	18	7.0	79	5.8	11
9	.2				0	.3	32	16	8.9	67	5.2	11
10	.2				0	.1	32	13	11	60	4.9	9.4
11	.1				0	0	38	10	16	44	4.3	9.4
12	.1				0	0	37	7.1	38	37	3.8	8.2
13	.1				0	0	a33	6.2	48	32	3.8	6.6
14	.1				0	0	a29	5.2	43	27	3.8	6.2
15	.1				0	0	a25	4.6	28	21	3.8	4.9
16	.1				0	0	21	5.2	23	17	3.3	4.6
17	.1				0	.3	19	4.0	12	14	4.9	4.0
18	.1				0	.5	20	3.8	11	12	12	3.8
19	.1				0	3.0	26	8.2	11	9.4	5.5	4.0
20	.1				0	2.0	24	12	8.9	7.6	4.9	3.5
21	0				0	3.0	19	11	7.7	8.2	3.5	3.1
22	0				0	2.0	16	19	302	7.6	3.3	2.7
23	0				0	1.5	13	19	517	6.6	2.7	2.7
24	.1				0	1.5	11	19	414	5.8	2.5	4.0
25	.1				0	1.5	8.8	19	491	5.2	20	3.5
26	.1				0	1.5	8.2	17	478	5.5	79	2.7
27	.2				.1	1.5	6.6	17	414	5.2	61	2.5
28	0				.2	6.0	5.8	16	370	4.6	55	2.3
29	0				.3	24	5.8	12	321	4.6	58	2.2
30	0				-	*30	9.4	9.5	281	4.0	29	2.0
31	0				-	26	-	7.0	-	3.8	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2.7	0.2	0	0.09	0.0010	0.001
November	0	0	0	0	0	0
December	0	0	0	0	0	0
Calendar year	-	-	-	-	-	-
January	0	0	0	0	0	0
February	.6	.3	0	.02	.00023	.0002
March	107.6	30	0	3.47	.039	.04
April	624.6	38	5.8	20.8	.236	.26
May	390.2	20	3.8	12.6	.143	.16
June	3,892.1	517	3.4	130	1.48	1.65
July	1,615.1	241	3.8	52.1	.592	.68
August	478.0	79	2.5	15.4	.175	.20
September	214.3	19	2.0	7.14	.081	.09
Water year 1939-40	7,325.2	517	0	20.0	.227	3.08

Peak discharge.- June 22 (10:30 p.m.) 1,000 sec.-ft.; Aug. 26 (11 a.m.) 202 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 31.

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 2½ miles upstream from confluence with West Branch of Fond du Lac River. Datum of gage is 762.82 feet, revised, above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 75 square miles.

Records available.- March 1939 to September 1940. May to July 1903 (gage heights only), at site about 2 miles downstream.

Extremes.- Maximum discharge during year, 2,140 second-feet June 23 (gage height, 5.87 feet); no flow Jan. 17-29.
1939-40: Maximum discharge, that of June 23, 1940; no flow Jan. 17-29, 1940.

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

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	3.5	3.3	0.4	0.5	*1.9	23	15	8.9	76	1.7	29
2	3.1	3.5	3.3	.4	.5	2.0	29	14	7.7	54	3.7	24
3	2.9	3.5	a3.2	.4	.5	2.0	38	18	6.4	39	9.4	19
4	2.7	3.3	a3.1	.3	.4	2.0	a39	32	4.7	30	16	16
5	2.9	3.3	2.9	.3	.4	2.0	a41	23	4.3	25	13	13
6	2.3	3.3	3.1	.3	.4	2.0	43	17	4.3	21	8.4	9.4
7	2.5	3.3	3.3	.2	.4	3.0	23	13	3.9	16	4.9	8.9
8	2.5	3.3	2.7	.2	.4	3.0	29	13	4.3	14	3.7	11
9	4.4	3.1	2.3	*.2	.4	3.0	30	11	4.3	12	2.8	8.4
10	4.1	3.5	2.9	.2	.3	3.0	25	9.5	5.0	10	2.6	6.3
11	3.5	2.9	3.3	.2	.3	2.5	43	8.3	5.4	9.4	2.6	6.8
12	3.1	2.9	2.9	.2	.3	2.5	26	6.4	5.8	7.9	2.4	5.8
13	3.1	2.9	2.8	.2	.3	2.5	21	5.4	5.8	6.8	2.4	4.9
14	3.3	3.3	2.4	.2	.4	2.5	18	5.0	5.0	5.5	2.3	4.3
15	3.1	3.3	2.1	.1	.4	3.0	15	5.0	4.3	5.2	2.4	4.3
16	2.9	3.1	2.7	.1	.5	5.0	13	5.8	3.9	4.6	2.1	4.3
17	2.7	3.1	3.1	0	.5	8.0	13	6.4	3.5	4.3	3.1	4.9
18	2.7	3.1	2.9	0	.5	14	13	5.8	5.0	4.0	16	5.2
19	3.1	3.1	2.9	0	.5	17	36	14	7.7	3.7	18	4.9
20	3.1	3.1	2.7	0	.5	18	45	21	5.4	3.4	7.4	4.6
21	3.1	3.1	2.6	0	.4	15	29	16	3.9	2.8	5.2	4.3
22	3.5	3.1	2.5	0	.4	13	21	13	344	2.8	4.6	3.7
23	3.5	2.9	2.5	0	.4	11	16	12	1,680	2.4	3.4	4.3
24	3.5	2.9	2.4	0	.2	9.0	13	12	1,090	2.1	3.1	6.3
25	6.6	3.3	2.3	0	.2	8.0	11	11	799	1.7	21	6.3
26	6.6	3.1	2.2	0	.2	7.0	10	9.5	517	1.9	100	5.8
27	8.6	3.5	1.8	0	.7	8.0	8.3	9.5	326	3.4	107	5.2
28	6.2	3.5	1.2	0	1.2	11	6.4	12	221	3.1	90	4.9
29	4.4	2.5	.8	0	1.5	13	7.0	13	157	2.4	133	4.3
30	4.1	3.3	.6	.3	-	15	13	12	110	2.3	67	4.0
31	3.8	-	.5	.5	-	19	-	11	-	2.1	38	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	115.2	8.6	2.3	3.72	0.050	0.06
November	95.6	3.5	2.5	3.19	.043	.05
December	77.3	3.3	.5	2.49	.033	.04
Calendar year	-	-	-	-	-	-
January	4.7	.5	0	.15	.0020	.002
February	13.6	1.5	.2	.47	.0063	.007
March	227.9	19	1.9	7.35	.098	.11
April	697.7	45	6.4	23.3	.311	.35
May	379.6	32	5.0	12.2	.163	.19
June	5,353.5	1,680	3.5	178	2.37	2.64
July	378.8	76	1.7	12.2	.163	.19
August	697.2	133	1.7	22.5	.300	.35
September	244.1	29	3.7	8.14	.109	.12
Water year 1939-40	8,285.2	1,680	0	22.6	.301	4.11

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Dec. 13, 14, 20, 21, Dec. 24 to Apr. 2.

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., on farm of Nick Giebel, at boathouse at north end of lake, 4 miles southeast of Fond du Lac.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 98.10 feet June 25; minimum observed, 97.36 feet July 23, Sept. 28, 30.
1936-40: 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, 1940

Apr.	17	7.52	May	21	7.52	June	25	8.10	July	27	7.38	Aug.	31	7.72
	20	7.56		25	7.52		29	7.78		29	7.38	Sept.	3	7.68
	22	7.52		28	7.48		30	7.70	Aug.	3	7.46		7	7.52
	27	7.52	June	1	7.46	July	2	7.60		6	7.52		10	7.48
	30	7.56		4	7.46		6	7.52		10	7.48		14	7.44
May	4	7.64		8	7.46		9	7.54		13	7.40		17	7.40
	6	7.58		11	7.40		13	7.40		17	7.44		21	7.40
	10	7.52		15	7.40		16	7.38		20	7.48		24	7.38
	13	7.54		18	7.42		20	7.38		23	7.40		28	7.36
	18	7.48		22	7.56		23	7.36		27	7.64		30	7.36

Note.- Add 90 feet to obtain elevations 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., on narrows of lake, at Cedar Lake resort, 5 miles east of Kiel.

Drainage area.- 3 square miles.

Records available.- August 1936 to September 1940 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.40 feet Aug. 31, Sept. 7, 14; minimum observed, 95.86 feet Nov. 4 to Dec. 30.
1936-40: Maximum elevation observed, 96.93 feet Apr. 6, 11, 18, 25, 1939; minimum observed, 94.95 feet Aug. 14, 1936.

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

Elevation, in feet, water year October 1939 to September 1940

Oct.	7	5.94	Dec.	9	5.86	June	22	6.34	Aug.	17	6.14
	14	5.94		16	5.86		30	6.28		24	6.38
	21	5.94		23	5.86	July	6	6.28		31	6.40
	28	5.94		30	5.86		13	6.28	Sept.	7	6.40
Nov.	4	5.86	Apr.	17	6.06		20	6.28		14	6.40
	11	5.86	June	1	6.14		27	6.28		21	6.30
	25	5.86		8	6.14	Aug.	3	6.14		28	6.30
Dec.	2	5.86		15	6.14		10	6.14			

Note.- Add 90 feet to obtain elevations 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., near north limits of Milwaukee, on left bank of river, 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 1940.

Average discharge.- 26 years, 414 second-feet.

Extremes.- Maximum discharge during year, 6,570 second-feet June 24 (gage height, 7.10 feet); minimum, 5 second-feet (regulated) Oct. 2; minimum daily, 34 second-feet Dec. 30, Jan. 6.

1914-40: Maximum discharge, 15,100 second-feet Mar. 20, 1918 (gage height, 9.00 feet, datum then in use from floodmark); minimum (regulated), 1.4 second-feet Sept. 12, 1939; minimum daily, 6 second-feet Aug. 6, 1936.

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

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	111	74	47	60	60	2,640	322	381	615	97	351
2	47	101	84	43	61	61	2,340	341	303	516	97	351
3	36	153	92	37	62	64	2,060	422	247	422	117	328
4	66	149	130	48	55	67	1,330	476	192	346	122	317
5	66	84	120	45	45	70	1,100	448	206	307	252	235
6	50	69	82	34	58	90	802	422	168	256	231	174
7	64	108	108	37	70	100	663	401	156	243	222	174
8	46	76	104	40	56	105	642	361	252	178	140	162
9	46	84	82	34	52	105	714	361	356	192	123	162
10	52	111	69	37	55	100	691	298	341	165	117	162
11	54	92	95	44	60	90	677	298	288	70	124	145
12	58	82	108	52	50	86	635	256	261	103	98	146
13	64	84	82	57	62	86	557	199	288	135	86	93
14	58	108	66	54	70	86	516	188	252	112	166	134
15	44	84	87	50	65	95	433	231	196	117	118	142
16	40	92	69	*46	63	110	417	192	162	147	114	94
17	58	84	64	40	73	130	351	178	140	120	99	a90
18	58	104	62	41	64	160	386	188	151	97	130	a130
19	54	66	104	43	61	190	376	218	418	124	a150	110
20	60	74	74	45	76	200	412	317	443	97	a180	110
21	69	92	62	50	75	200	376	361	356	108	a150	95
22	56	66	64	47	65	150	361	487	3,380	162	a120	102
23	66	76	64	45	62	145	317	563	5,460	106	a100	89
24	92	98	52	50	45	140	279	460	6,330	104	a60	113
25	153	79	48	56	55	140	275	366	5,090	97	a130	124
26	134	79	52	58	56	150	256	317	3,470	102	a600	120
27	291	82	58	52	*60	160	222	327	2,660	97	a740	108
28	213	84	40	52	61	170	210	482	1,720	50	a800	102
29	186	69	38	40	62	350	235	642	1,220	65	375	99
30	156	101	34	50	-	680	218	570	881	66	448	115
31	194	-	43	56	-	1,100	-	448	-	95	300	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	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	1,432	58	34	46.2	.070	.08
February	1,759	76	45	60.7	.092	.10
March	5,440	1,100	60	175	.265	.31
April	20,491	2,640	210	683	1.03	1.15
May	11,160	642	178	360	.545	.63
June	35,468	6,330	140	1,182	1.79	2.00
July	5,414	615	50	175	.265	.31
August	6,586	800	60	212	.321	.37
September	4,677	351	89	156	.236	.26
Water year 1939-40	100,173	6,330	34	274	.415	5.64

* 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.

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 1940.

Average discharge.- 10 years, 54.7 second-feet.

Extremes.- Maximum discharge during year, 3,180 second-feet by discharge measurement June 23 (gage height, 11.05 feet); minimum observed, 1 second-foot Jan. 1.
1930-40: Maximum discharge, that of 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 below 10 second-feet, which are fair, and those for period of ice effect, which are poor. Gage read once daily.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-25)

5.2	8.2	6.0	152	8.0	904
5.4	19	6.5	310	8.5	1,200
5.6	44	7.0	472	9.0	1,530
5.8	94	7.5	662	10.0	2,270

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	19	14	1	6	6	600	84	111	140	9.2	58
2	4.8	18	18	2	6	6	400	122	73	128	19	49
3	4.2	18	18	2	6	6	278	122	58	106	21	41
4	4.2	17	15	2	5	7	246	128	44	84	25	38
5	4.2	17	14	2	5	7	188	100	35	78	19	30
6	4.2	14	14	3	5	8	152	73	27	63	17	29
7	4.2	14	13	3	5	9	105	58	41	44	13	25
8	4.2	14	13	3	5	9	152	73	122	41	12	21
9	5.5	13	13	3	5	10	164	68	128	38	12	19
10	5.5	12	12	3	5	10	140	58	94	38	12	18
11	5.5	11	12	4	5	10	140	49	54	35	11	17
12	5.5	9.2	12	4	5	9	134	41	68	32	10	15
13	4.8	10	10	5	5	8	122	35	73	29	8.2	15
14	4.8	12	12	5	5	8	89	32	63	25	11	15
15	5.5	13	13	5	6	10	68	32	49	23	11	14
16	5.9	12	12	4	6	12	63	35	32	21	10	13
17	5.2	12	14	*3	6	14	58	35	25	19	11*	15
18	5.2	12	14	3	6	17	63	35	164	19	13	13
19	5.2	12	14	3	5	21	89	73	140	18	15	13
20	5.2	11	13	3	6	25	73	100	152	15	15	13
21	5.9	11	11	4	6	29	63	100	128	14	12	13
22	6.7	12	10	4	5	31	54	246	625	14	12	11
23	6.7	13	10	4	5	30	63	262	2,660	13	11	12
24	5.9	12	9	5	5	26	63	188	2,690	12	10	18
25	29	12	8	5	5	23	38	89	1,390	12	19	18
26	54	12	7	6	5	22	38	73	662	14	63	18
27	44	12	7	5	*6	21	35	111	438	18	84	17
28	35	12	6	5	6	22	35	262	326	17	122	15
29	29	12	6	5	6	31	32	294	246	15	106	15
30	25	12	5	5	-	60	58	230	188	15	94	13
31	21	-	2	5	-	110	-	140	-	13	78	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	360.8	54	4.2	11.6	0.103	0.12
November	390.2	19	9.2	13.0	.115	.13
December	351	18	2	11.3	.100	.12
Calendar year 1939	16,754.2	660	2	45.9	.406	5.51
January	116	6	1	3.7	.033	.04
February	157	6	5	5.4	.048	.05
March	617	110	6	19.9	.176	.20
April	3,803	600	32	127	1.12	1.25
May	3,348	294	32	108	.956	1.10
June	10,906	2,690	25	364	3.22	3.59
July	1,152	140	12	37.2	.329	.38
August	884.4	122	8.2	28.5	.252	.29
September	621	58	11	20.7	.183	.20
Water year 1939-40	22,706.4	2,690	1	62.0	.549	7.47

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 22 to Apr. 2

Wolf Lake at Chicago, Ill.

Location.- Staff gage, 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. Datum of gage is 580.19 feet above mean sea level (general adjustment of 1929, Cook County Highway bench mark).

Records available.- December 1939 to September 1940.

Extremes.- Maximum gage height observed during period, 1.32 feet May 3; minimum observed, 0.76 foot Aug. 3.

Remarks.- Gage read twice daily.

Gage height, in feet, December 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	1.00	1.16	1.16	1.24	1.08	1.20	1.06	0.80	1.26
2			-	1.00	1.16	1.16	1.26	1.26	1.20	1.08	.80	1.26
3			-	1.02	1.16	1.22	1.26	1.32	1.20	1.08	.78	1.26
4			-	1.02	1.16	1.22	1.26	1.30	1.20	1.08	.78	1.26
5			-	1.02	1.16	1.26	1.26	1.30	1.20	1.06	.80	1.24
6			-	1.02	1.16	1.26	1.26	1.28	1.20	1.04	.80	1.24
7			-	1.02	1.16	1.26	1.26	1.28	1.18	1.04	.81	1.23
8			-	1.04	1.16	1.26	1.26	1.28	1.16	1.04	.81	1.22
9			-	1.06	1.16	1.26	1.26	1.26	1.10	1.04	.81	1.22
10			-	1.06	1.16	1.26	1.26	1.28	1.10	1.04	.83	1.20
11			-	1.06	1.16	1.26	1.22	1.25	1.16	1.08	.88	1.18
12			-	1.06	1.16	1.26	1.22	1.17	1.16	1.08	.90	1.18
13			-	1.06	1.16	1.24	1.22	1.18	1.18	1.06	.91	1.18
14			-	1.06	1.16	1.24	1.20	1.16	1.18	1.06	.94	1.16
15			-	1.14	1.16	1.24	1.20	1.14	1.16	1.04	.99	1.16
16			-	1.14	1.16	1.24	1.20	1.14	1.14	1.04	1.04	1.16
17			-	1.14	1.16	1.24	1.20	1.14	1.14	1.02	1.07	1.16
18			-	1.18	1.16	1.24	1.22	1.14	1.12	1.00	1.16	1.18
19			-	1.18	1.16	1.24	1.22	1.14	1.11	.98	1.15	1.18
20			1.03	1.18	1.16	1.24	1.18	1.16	1.08	.96	1.16	1.18
21			1.04	1.16	1.16	1.24	1.18	1.18	1.08	.96	1.16	1.18
22			1.05	1.16	1.16	1.24	1.18	1.18	1.06	.94	1.16	1.18
23			1.04	1.16	1.16	1.24	1.18	1.18	1.06	.93	1.16	1.18
24			1.02	1.16	1.16	1.22	1.16	1.18	1.08	.90	1.16	1.18
25			1.00	1.16	1.16	1.22	1.16	1.18	1.12	.82	1.16	1.16
26			1.00	1.16	1.16	1.22	1.12	1.18	1.14	.82	1.20	1.15
27			1.00	1.16	1.16	1.22	1.10	1.20	1.12	.82	1.26	1.12
28			1.00	1.16	1.16	1.23	1.10	1.22	1.11	.82	1.27	1.12
29			1.02	1.16	1.16	1.23	1.08	1.24	1.08	.82	1.28	1.11
30			1.01	1.16	-	1.22	1.08	1.22	1.08	.84	1.27	1.11
31			1.00	1.16	-	1.26	-	1.22	-	.90	1.26	-

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.

Records available.- December 1923 to September 1940.

Average discharge.- 16 years, 1,371 second-feet.

Extremes (regulated).- Maximum discharge during year, 4,260 second-feet Jan. 31 (gage height, 1.80 feet); minimum, 43 second-feet on several days in July; minimum daily discharge, 151 second-feet Jan. 1, July 21; minimum gage height, -2.00 feet on several days.

1924-40: Maximum discharge, 8,250 second-feet Apr. 20, 1926 (gage height, 4.4 feet); minimum, 20 second-feet Sept. 7, 1930; minimum daily discharge, 44 second-feet Oct. 17, 1937; minimum gage height, that recorded in 1940.

Remarks.- Records good except those below 1,000 second-feet, which are fair. Flow regulated by power plant. Gage read hourly.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	322	S70	660	1,500	1,610	780	2,450	1,280	1,730	2,570	660	2,700
2	620	S70	660	1,340	1,500	585	2,450	1,730	1,500	2,330	700	2,330
3	780	920	620	1,070	1,070	397	2,700	1,730	1,390	2,210	480	2,960
4	660	S70	700	1,120	S70	1,610	2,450	1,730	1,610	1,970	300	2,570
5	550	e25	7e0	1,170	1,390	1,170	2,450	2,090	1,390	1,970	780	2,570
6	660	S70	S25	1,070	1,220	1,280	2,570	1,610	1,280	1,610	740	2,090
7	415	S70	740	1,020	1,170	1,280	2,570	1,730	1,2e0	1,850	740	2,090
8	265	S70	740	1,170	1,170	1,340	1,730	1,610	1,2e0	1,500	585	1,730
9	391	S25	780	S70	1,170	1,390	1,730	1,610	1,120	1,500	515	1,850
10	660	740	700	S25	S70	1,500	1,970	1,340	1,500	970	397	1,970
11	700	S25	740	1,120	S25	1,610	1,970	1,390	1,500	920	201	1,340
12	740	660	780	1,340	1,390	1,730	2,090	1,390	1,340	1,390	585	1,610
13	740	660	S70	1,390	1,170	1,730	1,970	920	1,500	920	585	1,610
14	620	7e0	S25	1,390	1,120	1,850	1,970	1,280	1,390	920	585	1,500
15	448	740	780	1,220	1,020	1,500	1,730	1,280	1,070	1,170	740	1,170
16	620	700	780	970	1,020	1,500	1,730	1,020	S70	1,170	585	1,500
17	740	660	740	1,220	S25	1,610	1,730	1,280	1,500	S70	585	1,170
18	700	660	780	1,390	1,070	1,610	1,850	970	1,120	S70	232	1,280
19	740	550	780	1,340	1,500	1,730	1,730	660	1,120	920	660	1,020
20	740	585	780	1,340	1,220	1,610	1,970	1,2e0	1,610	550	660	920
21	585	620	780	1,340	1,120	1,850	1,970	1,170	1,500	151	700	740
22	415	620	780	1,120	1,020	1,970	1,610	1,220	1,730	780	700	515
23	448	550	740	1,280	1,120	1,970	1,610	1,170	2,090	660	780	1,220
24	660	550	660	920	970	1,730	1,500	1,120	2,450	700	660	970
25	585	550	585	700	660	2,090	1,390	1,070	2,700	620	355	920
26	585	550	S25	1,070	1,390	1,610	1,390	920	2,700	660	1,280	1,070
27	700	585	1,020	1,610	S70	1,500	1,390	1,220	2,830	515	1,970	870
28	660	660	780	1,970	S70	1,610	515	1,070	2,960	344	1,970	S70
29	620	660	S25	1,970	S25	1,610	1,500	1,280	2,960	920	2,090	285
30	S70	660	1,120	1,610	-	1,610	1,070	920	2,700	660	2,210	740
31	970	-	1,020	1,730	-	1,610	-	1,390	-	700	2,450	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	19,209	970	265	620		
November	21,355	920	550	712		
December	24,195	1,120	585	780		
Calendar year 1939	560,209	5,060	223	1,590		
January	39,195	1,970	700	1,264		
February	32,045	1,610	S25	1,105		
March	46,972	2,090	397	1,515		
April	55,755	2,700	515	1,858		
May	40,480	2,090	660	1,306		
June	51,720	2,960	S70	1,724		
July	34,890	2,570	151	1,125		
August	26,480	2,450	201	854		
September	44,680	2,960	285	1,489		
Water year 1939-40	436,976	2,960	151	1,194		

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.

Drainage area.- 3,620 square miles.

Records available.- October 1930 to September 1940.

Extremes.- Maximum discharge during year, 8,680 second-feet May 2 (gage height, 7.37 feet); minimum discharge recorded, 482 second-feet (regulated) Aug. 24 (gage height, 1.80 feet).

1930-40: Maximum discharge, 13,300 second-feet Mar. 13, 1939 (gage height, 9.28 feet); minimum, 244 second-feet (regulated), Aug. 30, 1931.

Remarks.- Records good except those below 1,600 second-feet which are fair, and those for periods of no gage-height record, which are poor. Flow regulated by operation of power plants above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,230	2,030	1,870	1,520	2,130	2,060	4,160	4,660	-	-	a1,400	3,040
2	1,620	1,900	-	1,850	1,980	2,140	4,330	7,770	-	-	a1,500	3,140
3	1,630	1,960	-	2,020	1,850	2,040	4,360	6,280	-	-	a1,600	3,420
4	1,650	1,660	-	1,990	1,650	3,870	4,760	4,820	-	-	a1,100	3,140
5	1,500	-	-	1,850	1,890	4,520	4,230	4,060	-	-	a1,500	2,770
6	1,450	-	-	2,050	2,010	3,800	4,220	4,050	-	-	a1,500	2,740
7	1,490	-	-	1,580	1,950	3,190	-	3,550	2,810	-	1,450	2,200
8	1,120	-	-	2,040	1,860	3,470	-	3,260	2,840	-	1,590	2,220
9	1,410	-	-	1,950	2,050	3,330	-	2,800	3,160	-	1,530	2,560
10	1,980	-	-	1,990	1,860	3,180	-	4,230	3,850	-	1,460	2,120
11	a2,100	-	-	1,970	1,720	3,460	-	2,960	-	1,980	978	2,380
12	a2,200	-	-	1,550	2,010	3,370	-	3,250	-	2,040	1,460	2,000
13	1,670	-	-	1,570	1,990	3,440	-	3,290	-	1,710	1,520	2,060
14	1,500	-	-	2,090	2,020	2,960	-	2,770	-	1,580	1,700	1,900
15	1,240	-	-	1,810	2,000	3,120	-	2,830	-	1,920	1,410	1,740
16	1,510	-	-	2,490	2,010	2,790	-	2,730	-	2,060	1,630	2,280
17	1,770	-	-	2,210	1,840	2,690	-	2,720	-	1,740	1,240	1,840
18	1,630	-	-	2,660	1,930	3,260	-	2,640	-	-	1,410	2,030
19	1,530	-	-	4,110	2,160	3,590	3,740	2,640	-	-	1,640	1,700
20	1,550	-	-	3,670	2,310	3,180	3,360	2,810	2,950	-	1,730	1,700
21	1,330	-	-	4,100	2,220	3,210	3,730	3,220	-	-	2,020	1,670
22	1,350	-	-	3,950	2,250	3,220	3,220	2,960	-	-	1,660	1,530
23	1,420	-	-	4,410	1,860	2,980	2,940	2,640	-	-	1,420	1,640
24	1,700	-	-	3,990	1,700	2,930	2,520	2,780	-	-	950	1,880
25	1,740	-	-	3,350	1,940	2,860	2,230	2,500	-	-	1,760	1,890
26	1,660	-	-	3,280	1,900	2,990	2,220	2,560	-	-	1,960	1,760
27	1,790	-	-	3,290	2,270	2,310	2,050	3,220	-	-	2,580	1,810
28	1,730	-	1,640	3,070	2,180	2,580	2,210	3,060	-	-	2,760	1,660
29	1,490	-	1,640	3,090	2,090	2,810	1,680	a3,500	-	-	2,840	1,540
30	1,280	-	1,650	3,320	-	3,840	2,020	a3,500	-	-	2,960	1,500
31	1,850	-	1,330	2,340	-	3,070	-	a3,800	-	-	2,620	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	49,120	2,200	1,120	1,585	0.438	0.50
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-
January	81,360	4,410	1,520	2,625	.725	.84
February	57,630	2,310	1,650	1,987	.549	.59
March	96,260	4,520	2,040	3,106	.858	.99
April	-	-	-	-	-	-
May	107,860	7,770	2,500	3,479	.961	1.11
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	52,378	2,960	950	1,706	.471	.54
September	63,860	3,420	1,500	2,129	.588	.66
Water year	-	-	-	-	-	-

Peak discharge.- May 2 (10 a.m.) 8,680 sec.-ft.

a No gage-height record; discharge computed on basis of records for St. Joseph River at Mottville and Elkhart River at Goshen, Ind.

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 1940.

Extremes.- Maximum discharge observed during year, 79 second-feet June 25 (gage height, 1.90 feet); minimum observed, 1.0 second-feet Oct. 7, 23-25 (gage height, 0.24 foot). 1937-40: 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, that of Oct. 7, 23-25, 1939.

Remarks.- Records fair except those below 10 second-feet, which are poor, and those for days of no gage-height record, which are poor. Gage read once daily except Sundays.

Rating tables, water year 1939-40 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 12, July 31 to Sept. 30)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
0.2	1.0	1.0	34	0.9	1.6	1.4	25
.4	3.9	1.2	52	1.0	3.3	1.6	45
.6	10	1.4	75	1.2	11	1.9	79
.8	21	1.6	103				

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1.6	1.7	3.0	a2.8	3.3	4.8	56	39	43	58	15	a27
2	1.5	2.0	3.3	2.9	3.3	4.5	45	45	a41	56	14	a24
3	1.7	2.2	a3.3	2.5	3.3	11	31	45	39	47	13	22
4	1.7	2.0	3.3	2.5	a3.3	11	31	43	37	45	a12	22
5	1.5	a2.0	3.5	2.6	3.3	11	31	a39	37	41	12	19
6	1.5	2.0	3.5	2.1	3.3	25	29	35	35	37	18	16
7	1.0	1.7	3.9	a2.1	3.3	23	a46	33	35	a35	16	13
8	a1.2	2.0	4.1	2.1	3.3	23	63	31	31	33	13	a10
9	1.5	2.0	4.1	2.1	3.3	31	67	31	a34	31	11	6.8
10	2.5	2.2	a3.9	2.1	3.3	a30	69	31	37	31	10	12
11	1.7	2.2	3.7	2.1	a3.3	29	68	31	35	29	a9.5	12
12	1.7	a2.2	3.0	2.1	3.3	23	69	a32	52	29	9.0	12
13	1.5	2.2	3.5	2.5	3.3	23	72	33	49	26	9.0	10
14	1.2	2.2	3.9	10	4.5	23	a68	31	47	a25	9.0	10
15	a1.4	2.5	3.9	4.5	4.5	23	63	31	43	25	8.1	a10
16	1.5	2.5	4.8	4.5	3.9	23	60	31	a39	23	8.1	10
17	1.5	2.0	4.1	4.5	a3.9	29	56	29	35	23	7.2	9.0
18	1.5	2.0	3.9	4.5	3.9	35	58	27	58	23	a7.5	9.0
19	1.2	a2.1	3.5	3.9	3.9	41	58	a28	56	22	7.7	9.0
20	1.2	2.2	3.5	3.3	3.6	39	54	29	52	20	6.8	8.1
21	1.2	2.2	3.5	a3.3	3.8	39	a54	27	44	a18	6.8	7.2
22	a1.1	2.2	2.0	3.3	3.6	35	54	27	52	17	8.8	a7.2
23	1.0	2.2	2.6	3.3	3.9	22	54	25	a63	17	5.8	7.2
24	1.0	2.2	a2.8	3.3	4.5	a30	54	22	74	16	5.8	9.0
25	1.0	2.2	a3.0	3.3	a4.5	41	52	20	79	16	a9.0	9.0
26	1.5	a2.1	3.3	3.3	4.5	41	37	a22	75	22	13	8.1
27	2.2	2.0	3.5	3.3	4.5	35	35	23	69	25	22	8.1
28	2.2	1.7	3.1	a3.3	4.5	29	a36	25	67	a22	19	7.2
29	a1.8	2.0	2.9	3.3	4.5	49	37	25	58	19	23	a7.0
30	1.5	2.5	2.7	3.3	-	69	35	33	a58	17	36	6.8
31	1.5	-	a2.8	3.3	-	a72	-	39	-	15	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	46.1	2.5	1.0	1.49	0.025	0.03
November	63.2	2.5	1.7	2.11	.036	.04
December	105.9	4.8	2.0	3.42	.058	.07
Calendar year 1939	17,606.9	379	1.0	48.2	.817	11.10
January	101.9	10	2.1	3.29	.056	.06
February	109.2	4.5	3.3	3.77	.064	.07
March	924.3	72	4.5	29.8	.505	.58
April	1,542	72	29	51.4	.871	.97
May	962	45	20	31.0	.525	.61
June	1,474	79	31	49.1	.832	.93
July	863	58	15	27.8	.471	.54
August	395.1	36	5.8	12.7	.215	.25
September	347.7	27	6.8	11.6	.197	.22
Water year 1939-40	6,934.4	79	1.0	18.9	.320	4.37

a No gage-height record; discharge interpolated or computed on basis of records for Battle Creek at Battle Creek 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 1940 in reports of Geological Survey. September 1924 to September 1927 in reports of Indiana Department of Conservation.

Average discharge.- 12 years (1924-27, 1931-40), 431 second-feet.

Extremes.- Maximum discharge during year, 2,770 second-feet May 2 (gage height, 6.91 feet), from rating curve extended above 1,500 second-feet; minimum, 34 second-feet (regulated), Jan. 23-25 (gage height, 1.32 feet).
1931-40: Maximum discharge, 3,540 second-feet Mar. 13, 1939 (gage height, 8.45 feet); minimum, that of Jan. 23-25, 1940; minimum daily discharge, 71 second-feet Sept. 20, 1936; minimum gage height, 1.27 feet May 25, 30, 1932.

Remarks.- Records good except those below 200 second-feet, which are fair. Flow regulated by three power plants above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	220	314	177	244	a300	484	2,020	771	488	156	129
2	160	216	246	184	216	a290	548	2,260	756	449	104	132
3	176	202	166	185	172	581	678	1,370	649	406	128	132
4	181	198	221	174	192	1,250	679	1,050	617	376	144	138
5	176	195	248	217	206	1,016	603	691	576	358	150	122
6	180	194	250	170	196	787	566	806	544	314	168	146
7	152	205	274	188	194	763	554	744	490	280	136	140
8	133	256	285	192	198	790	619	724	561	267	154	121
9	139	184	254	178	174	782	688	854	512	259	134	128
10	140	284	196	194	178	763	655	822	590	250	130	138
11	145	257	236	182	181	732	626	762	629	252	128	138
12	218	170	215	192	196	692	653	720	804	260	133	139
13	206	232	209	234	214	609	668	686	836	232	128	148
14	168	261	209	308	226	678	666	646	746	251	112	128
15	204	202	211	436	200	656	662	600	660	211	132	128
16	204	212	180	406	196	584	655	636	608	244	118	140
17	196	227	191	293	244	578	631	614	590	214	130	131
18	176	197	209	a230	243	589	676	570	540	212	116	137
19	166	144	182	a220	242	642	701	570	624	198	125	128
20	176	226	192	a200	272	618	636	634	625	217	109	130
21	196	192	203	192	305	572	598	597	520	168	122	108
22	152	242	203	180	314	529	568	593	530	186	86	58
23	158	207	194	156	300	416	472	550	536	178	120	142
24	162	217	206	131	a260	399	526	466	612	162	92	138
25	164	224	182	144	a290	414	447	526	684	135	104	142
26	181	142	190	126	a290	418	442	550	643	122	131	137
27	285	232	194	170	a330	412	406	582	577	186	154	131
28	296	195	182	240	a310	436	419	606	548	190	166	160
29	180	180	190	240	a300	580	402	570	552	161	188	71
30	220	212	233	222	-	497	608	584	511	156	136	172
31	236	-	190	260	-	581	-	676	-	154	126	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,736	296	133	185	0.323	0.37
November	6,325	284	142	211	.368	.41
December	6,655	314	166	215	.375	.43
Calendar year 1939	168,239	3,280	133	516	.901	12.20
January	6,621	436	126	214	.373	.43
February	6,883	330	172	237	.414	.45
March	18,954	1,250	290	611	1.07	1.23
April	17,536	701	402	585	1.02	1.14
May	24,279	2,260	466	783	1.37	1.58
June	18,441	836	490	615	1.07	1.20
July	7,538	488	122	243	.424	.49
August	4,059	188	86	131	.229	.26
September	3,932	172	58	131	.229	.26
Water year 1939-40	126,959	2,260	58	347	.606	8.25

Peak discharge.- May 2 (1 a.m.) 2,770 sec.-ft.
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 (general adjustment of 1929).

Drainage area.- 849 square miles.

Records available.- July 1937 to September 1940.

Extremes.- Maximum discharge during year, 1,600 second-feet Apr. 2; maximum gage height, 6.23 feet Sept. 1; minimum discharge, 58 second-feet (regulated), Dec. 24; minimum gage height, 1.51 feet Feb. 22.
1937-40: Maximum discharge, 2,350 second-feet Feb. 23, Apr. 21, 1939; maximum gage height, 6.73 feet Feb. 23, 1939; minimum discharge, 50 second-feet Sept. 22, 1939; minimum gage height, 1.51 feet Feb. 22, 1940.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Slight regulation by power plants above station.

Cooperation.- Water-stage recorder inspected by employee of city of Battle Creek.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	259	303	324		a300	a375	1,450	456	554	593	232	1,380
2	314	352	466		a270	a400	1,540	492	543	456	294	1,290
3	228	288	471		a280	a425	1,330	585	536	432	230	1,150
4	220	315	376		308	a300	1,150	581	500	387	290	1,020
5	266	302	382	a250	248	a325	1,120	590	458	347	224	839
6	222	277	427		354	a350	958	542	431	290	272	674
7	270	306	380		256	412	e70	451	400	316	226	560
8	254	297	326		264	484	e76	494	407	353	324	516
9	272	295	354	a275	276	624	730	527	404	252	289	440
10	386	259	342	a300	272	656	724	480	376	281	247	334
11	287	317	358	a350	336	636	794	438	430	263	321	395
12	342	341	290	266	298	595	691	441	440	320	239	400
13	328	302	306	242	293	570	736	431	428	328	278	356
14	255	312	296	384	308	645	680	566	468	320	269	360
15	288	302	275	452	236	424	630	411	483	324	268	328
16	290	296	322	325	322	510	566	474	497	270	266	314
17	271	308	281	a350	301	508	640	472	460	233	339	332
18	225	282	277	a300	296	510	623	444	476	152	294	304
19	264	308	284	a320	284	649	655	428	558	194	320	287
20	236	282	292	a350	250	802	683	486	492	324	218	325
21	271	267	296	a350	272	816	669	463	446	280	233	316
22	315	285	248	a350	238	857	564	474	532	196	301	303
23	274	314	253	a350	270	620	530	470	653	250	320	278
24	312	275	226	a350	342	a650	492	456	815	248	262	338
25	185	306	246	a320	a300	a650	461	432	965	210	356	349
26	390	228	271	270	a325	a600	524	437	1,050	258	691	423
27	267	240	222	a270	a300	a550	470	386	968	410	854	361
28	342	278	228	a250	a275	496	448	436	930	303	892	352
29	339	256	a225	a270	a325	545	430	460	830	220	1,010	324
30	309	304	a225	a300	-	1,060	428	474	724	172	1,210	324
31	285	-	a225	a325	-	1,280	-	522	-	186	1,350	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,766	390	185	283	0.333	0.38
November	8,827	352	228	294	.346	.39
December	9,494	471	222	306	.360	.42
Calendar year 1939	197,828	2,310	146	542	.638	8.67
January	9,321	452	-	301	.355	.41
February	8,403	354	236	290	.342	.37
March	18,324	1,280	300	591	.696	.80
April	22,462	1,540	428	749	.882	.98
May	14,599	590	366	471	.555	.64
June	17,254	1,050	376	576	.677	.76
July	9,097	593	152	293	.345	.40
August	12,919	1,350	218	417	.491	.57
September	14,972	1,380	276	499	.588	.66
Water year 1939-40	154,438	1,540	152	422	.497	6.78

Peak discharge.- Apr. 2 (6 a.m.) 1,660 second-feet.
a No gage-height record; discharge computed on basis of weather records and records for station on Kalamazoo River at Comstock.

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. Prior to Nov. 25, 1939 staff gage at same site and datum. Datum of gage is 759.13 feet above mean sea level.

Drainage area.- 1,010 square miles.

Records available.- April to August 1931, October 1932 to September 1940.

Extremes.- Maximum discharge observed during year, 2,010 second-feet Sept. 2 (gage height, 3.78 feet); minimum observed, 221 second-feet Dec. 31 (gage height, 0.68 foot).
1931, 1932-40: Maximum discharge observed, 3,720 second-feet June 28, 1937 (gage height, 5.96 feet); minimum observed, 199 second-feet Oct. 14, 1934; minimum gage height, 0.56 foot May 4, 1931.

Remarks.- Records good above and fair below 1,000 second-feet. Flow regulated by power plants above station. Gage read once daily.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	442	470	442	338	530	500	1,520	742	808	1,100	338	1,870
2	363	500	500	442	470	560	1,660	808	775	970	338	2,010
3	442	530	650	314	363	590	1,730	808	742	775	442	2,010
4	338	530	620	470	530	620	1,520	840	710	680	363	1,870
5	470	415	530	363	442	442	1,310	808	650	650	442	1,590
6	389	590	530	338	a480	650	1,240	808	620	560	442	1,380
7	338	470	890	470	a520	710	1,100	742	590	500	442	1,100
8	363	442	530	442	a560	742	1,040	680	560	500	389	905
9	363	470	470	338	590	840	1,040	742	560	560	442	840
10	500	470	530	470	530	905	970	710	590	500	470	775
11	650	470	470	470	470	905	970	650	560	500	415	650
12	560	560	470	590	442	905	970	620	650	442	470	680
13	560	530	470	560	500	840	905	650	742	530	389	710
14	590	470	442	530	389	905	970	620	710	500	389	620
15	442	470	500	742	389	840	905	560	710	500	389	620
16	415	500	415	500	530	840	808	650	680	470	389	560
17	442	470	470	415	500	808	775	680	650	500	363	530
18	415	415	442	530	442	905	905	650	680	363	470	560
19	363	500	470	363	415	905	840	620	742	338	442	530
20	389	442	500	470	530	970	905	710	742	265	442	470
21	442	389	530	500	442	1,040	905	680	650	500	300	530
22	415	389	530	500	442	1,100	840	650	650	442	310	500
23	470	415	442	500	470	1,100	742	650	808	300	389	470
24	415	389	389	500	530	840	742	650	1,040	363	415	470
25	442	500	363	500	560	905	710	620	1,240	415	442	560
26	415	415	389	500	442	905	710	620	1,310	363	389	560
27	650	415	470	470	500	808	710	680	1,380	470	1,380	650
28	530	442	224	470	470	742	650	550	1,450	680	1,520	530
29	560	363	389	415	389	808	650	590	1,380	590	1,590	530
30	560	470	415	442	-	970	650	775	1,310	415	1,590	500
31	470	-	221	470	-	1,380	-	742	-	338	1,730	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,203	650	338	458	0.453	0.52
November	13,901	590	363	463	.458	.51
December	14,403	650	221	465	.460	.53
Calendar year 1939	256,501	2,640	221	703	.696	9.45
January	14,422	742	314	465	.460	.53
February	13,867	590	363	478	.473	.51
March	25,980	1,380	442	838	.830	.96
April	29,392	1,730	650	980	.970	1.08
May	21,315	840	560	688	.681	.78
June	24,689	1,450	560	823	.815	.91
July	16,079	1,100	265	519	.514	.59
August	18,321	1,730	300	591	.585	.67
September	25,580	2,010	470	853	.845	.94
Water year 1939-40	232,152	2,010	221	634	.628	8.53

a No gage-height record; discharge computed on basis of records for stations on Kalamazoo River near Battle Creek and near Allegan.

Kalamazoo River at Calkins Dam, near Allegan, Mich.

Location.- Water-stage recorder, lat. 42°34', long. 85°57', in sec. 15, T. 2 N., R. 14 W., at hydroelectric plant of city of Allegan, one mile upstream from Swan Creek and 6 miles northwest of Allegan. Zero of gage is at mean sea level.

Drainage area.- 1,540 square miles.

Records available.- April 1929 to September 1936, October 1937 to September 1940.

Extremes (regulated).- Maximum discharge during year, 4,030 second-feet Aug. 27 (gage height, 605.93 feet); minimum, 169 second-feet Aug. 8 (gage height, 595.50 feet). 1929-36, 1937-40: Maximum discharge, that of Aug. 27, 1940; minimum, 123 second-feet June 25, 1936 (gage height, 595.00 feet).

Remarks.- Records good except those for period of missing gage heights, which are fair. Discharge regulated by city of Allegan power plant.

Cooperation.- Water-stage recorder graph furnished by city of Allegan.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

595.0	104	597.0	478	602.0	2,080
595.2	127	598.0	733	603.0	2,530
595.5	169	599.0	1,010	604.0	3,020
596.0	258	600.0	1,330	605.0	3,540
596.5	362	601.0	1,680	606.0	4,080

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	527		846	746	907	809	1,540	1,140	1,410	1,410	748	2,600
2	727		843	870	880	767	1,860	1,590	1,250	1,410	728	2,580
3	738	a1,000	1,460	843	868	1,060	1,980	1,530	1,270	1,280	653	2,080
4	734		1,110	856	842	929	2,030	1,460	1,110	1,070	546	2,290
5	742		917	741	a850	925	2,050	1,520	1,110	980	758	2,200
6	722		971	843	872	1,000	1,740	1,350	970	952	770	2,290
7	658		992	639	862	1,170	1,730	1,190	958	921	756	1,960
8	517		1,050	804	867	1,290	1,600	1,090	933	799	588	2,420
9	754		1,070	874	864	1,130	1,470	1,210	908	822	580	1,290
10	812		923	862	1,010	1,660	1,480	1,090	905	735	758	943
11	737	a950	1,020	875	819	1,170	1,530	1,010	1,030	832	542	1,400
12	742		941	855	870	1,240	1,410	924	1,080	808	760	1,330
13	779		866	858	976	1,270	1,550	1,030	1,400	713	751	1,130
14	710		867	675	858	1,270	1,440	1,060	1,560	582	710	1,160
15	668		898	1,090	854	1,220	1,070	1,190	1,080	789	925	1,120
16	899	1,000	889	1,260	828	1,280	1,220	1,110	1,150	824	1,030	1,060
17	786	850	789	1,120	829	1,250	1,310	1,020	960	776	1,130	1,190
18		894	912	926	733	1,110	1,260	1,140	948	772	957	930
19		988	914	1,060	832	1,530	1,250	1,250	1,050	782	1,030	979
20	a750	882	907	1,050	830	1,430	1,460	952	1,120	729	746	873
21		843	860	818	824	1,530	1,120	1,010	954	598	746	868
22		840	854	904	938	1,580	1,140	1,060	1,200	669	644	1,050
23		824	868	1,010	846	1,600	1,360	1,080	1,460	798	594	1,000
24		923	737	1,030	855	1,760	1,080	1,080	1,870	812	564	934
25	a800	888	869	1,060	760	1,130	954	1,020	1,750	564	650	943
26		716	886	1,030	816	1,010	1,100	1,030	1,530	467	1,580	930
27		953	843	948	872	1,320	980	1,230	1,750	704	3,630	1,020
28	a900	925	827	770	942	1,140	1,040	1,040	1,690	551	2,690	1,180
29		836	742	941	847	1,480	1,050	1,050	1,780	765	3,010	996
30	a1,000	851	766	943	-	2,050	1,050	1,250	1,730	754	2,500	1,060
31		-	648	928	-	1,980	-	1,200	-	748	2,670	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	23,902	-	517	771	0.501	0.58
November	27,713	-	716	924	.600	.67
December	28,085	1,460	648	906	.588	.68
Calendar year 1939	446,504	3,220	491	1,223	.794	10.78
January	28,229	1,260	639	911	.592	.68
February	24,951	1,010	733	860	.558	.60
March	40,030	2,050	767	1,291	.838	.97
April	41,854	2,050	954	1,395	.906	1.01
May	35,906	1,590	924	1,158	.752	.87
June	37,916	1,870	905	1,264	.821	.92
July	25,416	1,410	467	820	.532	.61
August	34,744	3,630	542	1,121	.728	.84
September	41,806	2,600	868	1,394	.905	1.01
Water year 1939-40	390,552	3,630	467	1,067	.693	9.43

Peak discharge.- Aug. 27 (6 a.m.) 4,030 second-feet.
a No gage-height record; discharge computed on basis of weather records and records for Kalamazoo River near Battle Creek and at Comstock.

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 1940.

Extremes.- Maximum discharge during year, 938 second-feet Aug. 31 (gage height, 2.08 feet, from graph based on gage readings); minimum observed, 38 second-feet Oct. 9, Aug. 13 (gage height, 0.56 foot).

1930-31, 1932-40: Maximum discharge observed, 1,920 second-feet June 28, 1937 (gage height, 2.96 feet); minimum discharge, 22 second-feet Aug. 14, 1934; minimum gage height, about -0.5 foot in July 1936, and Aug. 31, 1939, caused by opening gates at dam forming control.

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

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.5	24	1.2	293	2.0	851
.6	48	1.4	408	2.2	1,030
.8	113	1.6	540		
1.0	195	1.8	688		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	85	78	60	72	78	688	128	178	169	46	894
2	40	82	88	60	72	72	612	156	182	136	43	810
3	48	78	102	60	75	78	540	174	165	110	43	688
4	48	72	106	66	72	85	440	178	148	102	43	576
5	48	72	113	63	72	106	360	169	121	92	48	440
6	48	66	106	60	75	113	315	152	106	88	60	348
7	48	72	99	60	78	113	278	136	99	85	54	293
8	48	78	92	54	78	161	247	128	99	72	48	219
9	40	75	85	57	75	214	233	128	99	72	48	182
10	78	78	85	60	75	242	223	121	92	69	48	165
11	88	78	78	60	75	242	214	110	99	69	48	148
12	82	78	82	66	72	242	204	106	106	66	43	136
13	76	78	78	66	78	b220	195	92	113	66	40	128
14	72	82	78	b75	78	169	186	110	113	60	43	121
15	72	78	75	b90	75	148	169	106	113	57	48	113
16	66	78	72	b100	72	144	169	113	106	60	54	106
17	66	78	78	b100	75	144	148	117	92	54	51	106
18	66	75	72	b95	75	169	169	113	99	54	57	106
19	66	72	72	b85	72	223	186	128	106	54	51	98
20	60	66	78	b80	75	273	195	136	92	48	54	99
21	63	78	72	b75	82	315	195	136	82	48	48	92
22	66	75	69	72	78	326	174	117	99	46	60	95
23	60	72	66	72	78	242	165	113	136	48	57	88
24	69	66	60	72	72	195	148	99	209	48	54	92
25	72	69	66	72	78	161	136	95	283	46	95	99
26	72	78	60	72	72	152	136	106	372	48	144	113
27	78	69	54	72	75	121	128	121	402	60	252	121
28	82	72	66	69	72	128	121	128	360	54	315	113
29	85	72	66	69	72	165	113	124	278	43	472	102
30	78	75	63	69	-	304	128	136	214	43	728	95
31	85	-	54	75	-	472	-	161	-	43	894	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,020	88	40	65.2	0.271	0.31
November	2,247	85	66	74.9	.311	.35
December	2,413	113	54	77.8	.323	.37
Calendar year 1939	61,077	1,180	40	167	.693	9.42
January	2,206	100	54	71.2	.295	.34
February	2,170	82	72	74.8	.310	.33
March	5,817	472	72	188	.780	.90
April	7,215	688	113	240	.996	1.11
May	3,937	178	92	127	.527	.61
June	4,763	402	82	159	.660	.74
July	2,110	169	43	68.1	.283	.33
August	4,089	894	40	132	.548	.63
September	6,787	894	88	226	.938	1.05
Water year 1939-40	45,774	894	40	125	.519	7.07

b Stage-discharge relation affected by ice.

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 and 2½ miles upstream from Portage River. Datum of gage is 900.00 feet above mean sea level.

Drainage area.- 174 square miles.

Records available.- April 1935 to September 1940.

Extremes.- Maximum discharge during year about 600 second-feet Apr. 17; minimum, 19 second-feet Dec. 27 (gage height, 8.25 feet).
1935-40: 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 on Aug. 22, 1936; minimum daily, 12 second-feet Aug. 23, 1936.

Remarks.- Records fair except those for periods of doubtful or no gage-height record, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	a37	41	31	37	37	a540	78	107	215	30	98
2	33	a37	44	34	34	34	a480	82	102	151	30	89
3	34	37	44	34	38	50	a420	89	101	135	29	89
4	35	34	42	34	36	51	a370	89	100	117	28	88
5	36	31	a40	34	39	51	298	83	95	101	47	81
6	35	36	}	31	63	60	217	81	92	86	38	75
7	34	40		31	101	61	154	78	175	72	35	66
8	31	38	a40	34	110	a80	172	79	188	71	36	61
9	39	38		35	102	a110	209	79	152	66	38	56
10	51	47		34	102	a120	228	78	167	59	40	56
11	36	38	}	34	95	a94	250	74	a350	56	42	52
12	36	36		38	100	a82	248	65	a380	52	45	48
13	36	39	a39	36	94	a74	207	68	a400	48	53	46
14	32	40		70	89	a66	188	71	a320	45	42	39
15	a30	38		49	90	a60	186	66	a270	41	40	36
16	}	39	}	40	89	a58	185	63	a250	40	39	36
17		37		50	83	a65	183	59	234	38	37	37
18		36	a37	50	82	a76	188	56	222	38	58	88
19		34		44	74	a96	179	60	a200	36	39	41
20		33		45	58	132	172	71	a180	35	38	40
21	a31		}	43	52	127	159	68	a170	35	37	36
22				41	50	152	149	120	a170	41	50	38
23		a36	a34	41	50	144	101	128	a210	36	38	36
24				40	55	130	89	122	a300	32	34	58
25				38	41	125	85	104	330	31	86	37
26	}	a35	38	38	52	120	81	54	288	31	96	36
27		a37	29	36	56	94	72	58	248	31	107	35
28	a35	38	36	32	53	98	65	62	246	28	85	32
29		36	34	35	41	156	65	72	232	31	115	30
30		39	30	38	-	a500	70	75	222	31	95	31
31	a37	-	28	37	-	a600	-	98	-	31	98	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,049	51	-	33.8	0.194	0.22
November	1,110	47	31	37.0	.213	.24
December	1,156	44	28	37.3	.214	.25
Calendar year 1939	37,779	554	26	104	.598	8.08
January	1,207	70	31	38.9	.224	.26
February	1,966	110	34	67.8	.390	.42
March	3,703	600	34	119	.684	.79
April	6,010	540	65	200	1.15	1.28
May	2,430	128	54	78.4	.451	.52
June	6,501	400	92	217	1.25	1.39
July	1,860	215	28	60.0	.345	.40
August	1,624	115	28	52.4	.301	.35
September	1,535	98	30	51.2	.294	.33
Water year 1939-40	30,151	600	28	82.4	.474	6.45

a No or doubtful gage-height record; discharge computed on basis of records for stations at East Lansing and Lansing.
Note.- Backwater from aquatic vegetation Oct. 1 to Feb. 8 and May 2 to Sept. 30.

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 limits of Lansing, 3⅛ miles downstream from Cedar River.

Drainage area.- 1,230 square miles.

Records available.- November 1934 to September 1940. March 1901 to August 1906 at site at Seymour Street Bridge, 1¼ miles upstream.

Extremes.- Maximum discharge during year, 4,180 second-feet Mar. 31 (gage height, 7.79 feet); minimum, 6.5 second-feet Oct. 1 (gage height, 0.41 foot).
1934-40: Maximum discharge, 7,170 second-feet June 27, 1937 (gage height, 10.47 feet); minimum, that of Oct. 1, 1939; minimum daily, 25 second-feet, Aug. 16, 1936.

Remarks.- Records good except those for October, November, May, and July 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	200	210	-	-	232	3,140	465	a500	a900	121	1,450
2	112	176	302	-	-	159	2,460	514	a470	a780	81	1,050
3	86	203	100	-	-	354	1,980	527	a380	a670	50	1,050
4	99	240	299	-	-	-	1,800	667	a300	560	80	810
5	101	112	264	-	-	-	1,650	537	240	365	124	-
6	94	184	308	-	-	-	1,710	636	262	a340	147	-
7	60	190	204	-	-	-	1,190	499	268	a320	150	-
8	48	192	227	-	-	-	1,470	453	251	a300	61	-
9	105	230	234	-	-	-	905	360	364	a285	95	474
10	270	222	162	-	-	-	1,090	488	680	a265	164	391
11	132	172	302	-	-	-	1,120	414	2,080	252	86	336
12	168	128	197	-	-	-	1,120	358	2,190	352	106	326
13	165	232	241	-	-	-	1,190	266	1,980	202	110	314
14	158	253	202	-	-	-	940	354	a1,800	229	152	366
15	140	193	208	-	-	-	890	360	a1,550	130	75	270
16	142	226	212	-	-	-	a850	376	a1,300	232	167	286
17	145	174	140	165	-	-	a800	340	a1,100	223	92	298
18	163	193	169	265	-	-	a800	358	a900	180	202	190
19	138	162	248	212	253	-	a820	380	a720	192	90	-
20	146	142	179	265	245	-	a800	346	a600	199	122	-
21	154	260	a160	201	198	1,700	a760	432	a540	144	153	-
22	91	155		160	246	1,120	a720	a450	a520	186	174	-
23	101	148		171	167	826	a690	a470	700	88	90	-
24	140	176		144	246	543	a680	a400	950	162	152	-
25	218	179		-	127	586	a630	a320	a1,100	107	288	-
26	189	158	a150	-	203	564	a600	a280	a1,200	178	494	-
27	328	174		-	272	544	a560	a260	a1,100	148	1,130	398
28	192	158		-	164	525	a520	a280	a1,050	120	1,490	334
29	144	160		-	209	1,120	a500	a320	a1,050	72	2,390	168
30	181	234		-	-	3,030	510	a370	a1,000	112	2,080	142
31	228	-		-	-	3,710	-	a480	-	189	1,640	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,482	328	48	145	0.118	0.14
November	5,606	260	112	187	.152	.17
December	6,068	308	-	196	.159	.18
Calendar year 1939	211,769	5,230	48	580	.472	6.41
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	15,013	3,710	-	-	-	-
April	32,874	3,140	600	1,096	.891	.99
May	12,760	867	260	412	.335	.39
June	27,145	2,190	240	905	.736	.82
July	8,422	900	72	272	.221	.25
August	12,356	2,390	50	399	.324	.37
September	-	-	-	-	-	-
Water year	-	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for stations at Jackson and Grand Rapids and station on Cedar River at East Lansing.

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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, and 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 1940. 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.- 10 years (1930-40), 2,679 second-feet.
Extremes.- Maximum discharge during year, 11,600 second-feet Apr. 2 (gage height, 6.49 feet); minimum observed, 801 second-feet Aug. 9, 10 (gage height, -4.72 feet).
1930-40: Maximum discharge, 36,300 second-feet 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 for periods when stage was below intake and those for periods of no gage-height record, 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 station.
Cooperation.- Water-stage recorder graph furnished by city of Grand Rapids.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

-4.5	857	-3.3	1,330	-1.5	2,540	1.0	4,720	5.0	9,360
-4.2	955	-3.0	1,480	-1.0	2,940	2.0	5,750	6.0	10,800
-4.0	1,030	-2.5	1,810	-.5	3,340	3.0	6,850		
-3.6	1,200	-2.0	2,160	0	3,790	4.0	8,050		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,070	2,020	1,330	1,670	1,880	1,200	11,000	2,160	2,780	3,340	872	7,450
2	a1,070	2,300	1,430	1,670	1,860	1,280	11,400	2,380	2,860	3,020	904	7,210
3	1,070	1,540	1,480	1,480	1,810	1,240	11,400	2,780	2,780	2,700	904	7,090
4	1,970	1,230	1,600	1,430	1,670	1,280	10,800	2,700	2,760	2,380	920	6,410
5	a1,100	1,260	1,740	1,480	1,600	1,430	9,780	2,940	2,380	2,160	955	5,320
6	1,110	1,240	1,540	1,330	1,670	1,480	8,310	2,860	1,950	2,090	955	4,620
7	1,110	1,280	1,480	1,280	1,540	1,670	7,450	2,940	2,020	1,670	1,070	3,970
8	990	1,150	1,600	1,380	1,480	2,090	6,850	2,620	1,810	1,600	904	3,430
9	972	1,200	1,480	1,380	1,480	2,860	6,300	2,230	1,670	1,540	828	3,020
10	1,200	1,280	1,480	1,330	1,480	3,430	5,530	2,300	1,880	1,480	814	2,620
11	1,200	1,380	1,430	1,240	1,540	3,520	5,120	2,160	1,810	1,430	904	2,460
12	1,240	1,480	1,430	1,240	1,430	3,260	4,820	2,020	2,300	1,380	990	2,160
13	1,280	1,430	1,380	1,200	1,430	2,020	4,620	1,950	3,520	1,280	955	1,950
14	1,280	1,430	1,430	1,430	1,380	2,090	4,420	1,880	4,330	1,200	904	1,950
15	1,280	1,380	1,240	1,810	1,380	2,620	4,150	1,880	4,620	1,200	920	1,810
16	1,280	1,380	1,380	2,700	1,430	2,940	3,970	1,680	3,260	1,070	857	1,740
17	1,280	1,380	1,360	2,860	1,280	2,940	3,610	2,020	3,610	1,010	904	1,670
18	1,150	1,430	1,430	2,940	1,240	3,020	3,610	1,880	3,020	1,010	990	1,670
19	1,200	1,330	1,380	3,260	1,330	3,020	3,700	1,880	2,820	990	990	1,670
20	1,150	1,240	1,380	3,100	1,380	3,610	3,700	2,090	2,230	1,010	938	1,600
21	1,240	1,330	1,330	2,940	1,280	3,970	3,430	2,020	2,090	1,010	1,030	1,670
22	1,200	1,380	1,240	2,940	1,330	4,060	3,180	2,160	2,160	1,010	1,030	1,600
23	1,240	1,200	1,380	2,780	1,240	3,880	3,180	2,160	2,300	920	955	1,330
24	1,240	1,280	1,150	2,540	1,280	3,260	2,860	2,090	3,260	872	1,010	1,330
25	1,200	1,330	1,110	2,380	1,280	2,860	2,780	2,160	4,060	990	1,430	1,430
26	1,200	1,280	1,240	2,300	1,330	2,700	2,540	2,160	4,240	1,010	2,090	1,240
27	1,480	1,200	1,240	2,160	1,240	2,540	2,300	2,540	4,330	1,010	2,540	1,150
28	1,880	1,380	1,150	2,160	1,280	2,700	2,160	2,540	4,150	972	3,020	1,150
29	1,950	1,280	1,280	2,090	1,330	3,320	2,160	2,540	3,790	904	4,420	1,150
30	1,880	1,240	1,240	2,090	-	8,140	2,160	2,460	3,430	872	5,530	1,110
31	1,950	-	1,600	2,020	-	10,200	-	2,460	-	872	6,970	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	39,562	1,950	972	1,276	0.260	0.30
November	41,380	2,300	1,150	1,379	.281	.31
December	42,980	1,740	1,110	1,386	.283	.33
Calendar year 1939	1,046,595	16,200	870	2,867	.585	7.95
January	62,610	3,260	1,200	2,020	.412	.48
February	41,900	1,880	1,240	1,445	.295	.32
March	94,630	10,200	1,200	3,053	.623	.72
April	157,290	11,400	2,160	5,243	1.07	1.19
May	70,840	2,940	1,880	2,285	.466	.54
June	88,040	4,620	1,670	2,935	.599	.67
July	44,002	3,340	872	1,419	.290	.33
August	48,503	6,970	814	1,565	.319	.37
September	82,910	7,450	1,110	2,764	.584	.63
Water year 1939-40	814,647	11,400	814	2,226	.454	6.19

a No gage-height record; discharge interpolated.
Note.- Stage below intake to gage well Oct. 1, 3, 4, 6-9, July 16 to Aug. 24; discharge computed from 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 1940. August 1902 to December 1903 at site three-quarters of a mile downstream.

Extremes.- Maximum discharge during year, 1,970 second-feet Mar. 30 (gage height, 7.05 feet); minimum, 6.9 second-feet Dec. 22 (gage height, 3.00 feet).
1902-3, 1931-40: 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 good except those for periods of no gage-height record, which are fair.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-31)

3.0	6.9	3.8	203	5.0	720
3.2	41	4.0	273	5.5	992
3.4	87	4.3	391	6.0	1,290
3.6	141	4.6	524	7.0	1,970

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	33	29	19	19	35	1,160	95	144	184	19	323
2	12	27	19	15	35	22	626	113	127	144	11	281
3	12	40	33	17	24	39	613	136	105	121	38	227
4	12	45	22	37	26	54	542	147	85	105	14	184
5	12	39	31	23	19	85	436	127	69	90	14	147
6	12	33	40	14	35	64	327	119	63	79	43	121
7	14	37	19	12	27	119	262	108	62	68	22	103
8	17	43	31	12	19	171	244	100	71	65	11	95
9	19	54	27	14	32	220	266	95	167	73	29	103
10	24	37	31	15	37	200	255	87	273	54	39	103
11	41	29	19	19	42	156	220	82	799	58	26	87
12	33	31	37	19	20	119	217	77	570	52	11	82
13	22	52	37	27	41	97	203	80	1,020	29	11	59
14	26	27	39	51	41	85	193	85	648	50	35	60
15	27	31	27	65	20	77	197	60	370	45	19	61
16	20	19	29	73	17	75	203	90	251	29	26	56
17	41	17	31	70	17	100	182	92	251	58	12	70
18	19	40	19	61	40	168	181	86	147	17	14	59
19	14	28	36	37	19	300	206	80	133	40	14	59
20	17	48	29	a29	41	483	184	97	108	27	44	53
21	19	29	31	}	41	452	150	92	87	44	27	a40
22	15	19	22		31	311	138	93	87	17	15	a30
23	27	19	24	a26	19	171	121	82	105	36	41	26
24	24	31	20		20	144	113	73	210	12	29	75
25	37	19	17	}	35	135	108	59	248	39	25	62
26	48	35	15	}	20	124	103	56	227	12	136	33
27	29	22	28	a23	26	106	95	87	203	}	342	82
28	41	17	26	}	40	103	85	90	249	}	474	48
29	46	19	17	17	27	411	85	97	307	d23	478	56
30	24	59	24	24	-	1,650	77	97	237	}	434	45
31	45	-	29	29	-	1,520	-	127	-	45	365	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	761	48	12	24.5	0.069	0.08
November	979	59	17	32.6	.092	.10
December	838	40	15	27.0	.076	.09
Calendar year 1939	44,402.6	1,720	9.9	122	.344	4.67
January	898	73	12	29.0	.082	.09
February	830	42	17	28.5	.081	.09
March	7,795	1,650	22	251	.707	.82
April	7,974	1,160	77	266	.749	.84
May	2,931	147	56	94.5	.266	.31
June	7,423	1,020	62	247	.696	.78
July	1,685	184	12	54.4	.153	.18
August	2,819	478	11	90.9	.256	.30
September	2,810	323	26	93.7	.264	.29
Water year 1939-40	37,743	1,650	11	103	.290	3.97

a No gage-height record; discharge computed on basis of records for Grand River at Jackson, Mich.

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 1940.

Extremes.- Maximum discharge observed during year, 2,720 second-feet Apr. 11; maximum gage height, 10.01 feet Jan. 2, affected by ice; minimum observed, 365 second-feet July 28 (gage height, 6.89 feet).
1930-31, 1934-40: Maximum discharge observed, 5,110 second-feet Mar. 26, 1938 (gage height, 12.12 feet); minimum observed, 275 second-feet July 29, 1934 (gage height, 6.70 feet).

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

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

6.8	328	7.3	566	8.0	1,030	9.0	1,850
7.0	413	7.6	751	8.5	1,420	10.0	2,830

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	589	686	607	420	600	500	1,420	1,220	1,180	961	413	1,340
2	589	692	655	450	600	640	1,110	1,540	1,150	896	391	1,340
3	572	692	692	500	560	491	1,540	1,760	1,150	826	441	1,300
4	560	692	667	480	560	528	1,760	1,760	1,340	771	475	1,220
5	550	692	692	470	560	544	1,760	1,670	903	718	470	1,220
6	633	686	686	460	560	683	1,800	1,720	819	674	506	1,150
7	533	667	643	450	560	819	1,850	1,720	765	636	528	1,110
8	560	667	630	450	560	636	2,420	1,720	799	612	555	998
9	578	655	643	450	620	667	1,940	1,620	997	572	533	947
10	583	680	667	450	590	a700	2,620	1,540	961	572	511	954
11	583	674	643	460	600	771	2,720	1,460	939	560	496	903
12	578	699	650	460	540	655	2,620	1,380	896	589	470	868
13	572	699	661	450	600	686	2,420	1,260	997	560	486	833
14	612	692	643	450	660	496	2,320	1,220	947	572	460	833
15	618	674	501	500	640	528	2,170	1,180	868	544	436	d820
16	643	674	528	500	600	589	2,080	1,340	805	516	436	805
17	643	667	544	470	520	595	1,900	1,300	706	496	427	799
18	624	661	595	560	520	732	1,900	1,300	692	486	578	805
19	643	649	674	560	520	572	1,900	1,300	771	475	819	799
20	612	630	699	580	520	578	1,800	1,420	712	451	799	786
21	595	630	712	600	680	758	1,760	1,300	718	432	792	799
22	624	624	636	600	660	565	1,180	1,460	712	451	819	771
23	612	612	555	600	540	544	1,620	1,500	765	409	792	738
24	601	618	566	600	480	533	1,540	1,460	866	395	751	792
25	583	612	470	600	660	427	1,540	1,420	997	409	718	875
26	595	601	470	600	540	550	1,500	1,380	1,030	486	751	896
27	572	601	538	600	520	511	1,460	1,340	1,030	491	751	911
28	589	589	550	600	500	624	1,460	1,340	997	365	805	826
29	699	583	491	600	560	511	1,300	1,260	1,030	400	997	758
30	699	595	491	600	-	606	1,300	1,220	1,030	400	1,030	853
31	686	-	450	600	-	578	-	1,220	-	409	1,420	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	18,630	699	533	601	0.414	0.48
November	19,593	699	583	653	.450	.50
December	18,629	712	450	601	.414	.48
Calendar year 1939	297,029	3,570	412	814	.561	7.62
January	16,170	600	420	522	.360	.41
February	16,530	680	480	570	.393	.42
March	18,407	819	427	594	.410	.47
April	54,710	2,720	1,110	1,824	1.26	1.40
May	44,330	1,760	1,180	1,430	.986	1.14
June	27,574	1,340	692	919	.634	.71
July	17,134	961	365	553	.381	.44
August	19,856	1,420	391	641	.442	.51
September	28,028	1,340	738	934	.644	.72
Water year 1939-40	299,691	2,720	365	819	.565	7.68

a No gage-height record; discharge computed on basis of records for Muskegon River at Newaygo.
d Doubtful gage height; discharge determined from hydrograph.
Note.- Stage-discharge relation affected by ice Dec. 31 to Mar. 2.

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 1940. June 1901 to December 1906, at site above Newaygo.

Average discharge.- 10 years (1930-40), 1,606 second-feet.

Extremes.- Maximum discharge during year, 3,530 second-feet Mar. 31 (gage height, 48.52 feet); minimum, 570 second-feet July 27-29 (gage height, 46.50 feet).
1901-6, 1930-40: Maximum daily discharge, 11,600 second-feet Feb. 14, 1938 (gage height, 51.9 feet); minimum, 390 second-feet July 13, 1934 (gage height, 46.2 feet).

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

Rating tables, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to July 26				July 27 to Sept. 30			
46.5	630	47.5	1,880	46.5	570	47.5	1,470
46.6	720	47.6	2,040	46.6	650	47.6	1,910
46.8	930	48.0	2,680	46.8	840	48.0	2,550
47.0	1,180	48.5	3,530	47.0	1,070		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,000	1,710	1,450	693	1,390	1,740	3,530	2,040	2,120	1,960	a900	a2,350
2	1,370	1,040	1,150	1,090	919	1,550	3,280	1,960	2,040	2,200	a1,000	2,370
3	1,700	1,040	1,090	930	831	1,050	3,020	1,640	1,700	1,780	a1,000	a2,250
4	1,120	908	1,410	990	842	1,640	3,020	2,520	1,710	1,740	a1,000	2,140
5	1,340	1,090	1,410	780	1,220	1,770	3,020	2,200	1,700	1,370		1,860
6	1,100	1,770	1,490	693	1,590	1,770	2,520	2,120	1,700	1,080		1,800
7	990	1,770	1,510	693	1,720	1,770	2,440	2,520	1,680	1,040		1,840
8	1,000	1,780	1,520	875	1,660	1,770	2,520	3,020	1,180	1,030		1,910
9	1,000	1,740	1,140	1,460	1,030	1,760	2,940	3,020	1,050	1,030	a1,100	1,900
10	1,010	1,180	1,080	1,530	990	1,760	3,020	2,660	1,370	1,050		1,900
11	1,350	1,040	1,390	1,590	990	1,770	3,020	2,200	1,770	1,050		1,900
12	1,040	1,040	1,560	1,350	1,350	1,740	2,850	1,770	1,720	990		1,910
13	1,030	1,340	1,620	730	1,640	1,780	2,760	1,760	1,770	1,010		1,820
14	1,030	1,550	1,350	853	1,640	2,010	2,760	1,780	1,510	1,050	1,070	998
15	1,030	1,530	1,280	1,660	1,480	1,680	2,200	2,040	1,050	1,050	1,010	1,010
16	1,030	1,280	1,090	1,650	1,350	1,680	2,200	2,280	1,050	1,050	974	1,820
17	1,000	1,050	1,080	1,410	1,050	1,710	2,280	2,120	1,680	954	1,030	1,840
18	990	1,040	1,420	1,170	1,050	1,700	2,280	1,770	1,700	1,030	a1,050	1,840
19	1,350	1,050	1,410	1,340	1,420	1,780	2,200	1,770	1,710	1,220	1,070	1,290
20	1,170	1,560	1,490	1,340	1,780	1,760	1,780	2,010	1,700	740	a1,200	1,060
21	1,000	1,800	1,380	1,340	1,770	1,740	1,780	2,200	1,090	684	a1,300	1,010
22	1,010	1,740	1,410	1,320	1,490	1,740	1,770	2,200	1,060	930	a1,300	1,080
23	1,340	1,150	1,060	1,320	1,260	1,720	1,980	2,280	1,230	1,080	a1,300	1,850
24	2,040	1,080	1,030	1,310	1,030	1,650	2,280	2,200	1,830	1,080	a1,200	1,800
25	2,040	1,000	1,050	1,390	1,050	a1,500	2,200	2,120	2,280	1,080	a1,200	1,850
26	1,480	1,050	1,280	1,340	1,350	1,320	1,800	2,200	2,200	1,060	a1,200	1,300
27	1,280	1,030	1,410	1,320	1,700	1,060	1,800	2,280	2,200	618	a1,300	1,100
28	1,150	1,410	1,280	1,300	1,710	1,230	1,800	2,520	2,200	578	a1,500	1,050
29	1,050	1,560	1,090	1,310	1,710	1,580	1,920	2,440	1,760	573	1,860	1,030
30	1,270	1,150	711	1,340	-	1,720	2,200	2,200	1,800	a900	1,860	1,360
31	1,710	-	675	1,350	-	2,360	-	2,200	-	a900	2,290	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	38,020	2,040	990	1,226	0.522	0.60
November	39,498	1,800	908	1,317	.560	.63
December	39,316	1,620	675	1,268	.540	.62
Calendar year 1939	569,786	3,840	480	1,561	.664	9.03
January	37,467	1,660	693	1,209	.514	.59
February	39,012	1,780	831	1,345	.572	.62
March	61,810	2,360	1,050	1,671	.711	.82
April	73,170	3,530	1,770	2,439	1.04	1.16
May	68,060	3,020	1,640	2,195	.934	1.08
June	49,560	2,280	1,050	1,652	.703	.78
July	34,207	2,200	578	1,103	.469	.54
August	37,514	2,290	-	1,210	.515	.59
September	49,238	2,370	998	1,641	.698	.78
Water year 1939-40	556,872	3,530	578	1,522	.648	8.81

Peak discharge.- Mar. 31 (11 p.m.) 3,530 second-feet.
a No gage-height record; discharge computed on basis of weather records and records for Manistee River near Sherman.

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 1940.

Extremes.- Maximum discharge observed during year, 1,140 second-feet Apr. 5, 6; maximum gage height, 4.78 feet Jan. 3, (affected by ice); minimum discharge observed, 391 second-feet July 22-27, Aug. 11, 13 (gage height, 2.30 feet).
1939-40: Maximum discharge observed, that of apr. 5, 6, 1940; minimum observed, 385 second-feet Aug. 1, 2, 6, 7, 1939.

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

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 2 to Mar. 31)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
2.6	445	3.3	658	2.3	391	3.5	735
2.8	505	3.6	752	2.5	445	4.0	889
3.0	565	4.0	880	2.7	501	4.5	1,050
				3.0	587	4.8	1,140

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	505	596	535	560	560	475	1,020	675	675	735	418	616
2	475	565	565	580	560	475	1,050	705	675	705	445	675
3	475	565	596	580	560	475	1,080	827	645	645	501	645
4	475	565	627	580	560	505	1,110	889	616	587	501	645
5	445	535	596	560	560	505	1,140	858	587	558	529	558
6	445	535	565	560	540	505	1,140	796	587	529	501	501
7	445	535	565	540	540	505	1,110	765	587	501	501	501
8	475	535	535	540	540	505	1,080	735	587	501	445	501
9	475	535	535	540	540	535	1,080	705	616	501	418	529
10	505	565	535	540	535	535	1,080	675	587	473	418	529
11	505	565	535	520	565	505	1,110	645	616	473	391	501
12	505	596	505	540	505	475	1,110	645	616	473	391	529
13	535	565	505	540	505	475	1,080	616	705	473	391	529
14	565	565	505	540	505	475	1,080	645	735	473	418	529
15	565	565	535	560	505	505	984	675	705	445	418	529
16	535	535	535	560	505	535	920	675	616	445	445	589
17	535	535	535	500	505	505	920	675	558	445	418	501
18	505	535	505	500	505	505	889	645	616	418	418	501
19	505	535	535	500	505	505	920	765	705	418	418	589
20	a505	535	565	520	505	535	952	765	705	418	445	529
21	505	535	565	540	505	535	920	796	675	418	473	501
22	505	505	535	560	475	535	858	796	705	391	445	473
23	505	505	535	580	445	505	827	765	675	391	445	445
24	505	505	535	600	505	475	765	735	675	391	473	473
25	505	505	505	a600	475	475	735	705	827	391	473	473
26	535	505	535	a600	475	505	705	735	858	391	501	529
27	535	505	535	a600	505	535	705	735	889	391	529	529
28	535	505	535	580	475	535	705	735	889	418	587	501
29	535	505	535	580	505	565	675	735	827	418	645	473
30	565	535	520	580	-	784	645	705	765	445	616	445
31	565	-	540	580	-	816	-	675	-	418	587	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,775	565	445	509	0.725	0.84
November	16,172	596	505	539	.768	.86
December	16,789	627	505	542	.772	.89
Calendar year	-	-	-	-	-	-
January	17,260	600	500	557	.793	.91
February	14,970	565	445	516	.735	.79
March	16,305	816	475	526	.749	.86
April	28,395	1,140	645	946	1.35	1.50
May	22,498	889	616	726	1.03	1.19
June	20,524	889	558	684	.974	1.09
July	14,679	735	391	474	.675	.78
August	14,604	645	391	471	.671	.77
September	15,748	675	445	525	.748	.83
Water year 1939-40	213,719	1,140	391	584	.832	11.31

a No gage-height record; discharge computed on basis of records for Manistee River at Sherman.
Note.- Stage-discharge relation affected by ice Dec. 30 to Jan. 24 and Jan. 28 to Feb. 9.

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 1940.

Average discharge.- 18 years (1903-15, 1934-40), 1,085 second-feet.

Extremes.- Maximum discharge observed during year, 1,550 second-feet Apr. 9, 19; maximum gage height, 11.86 feet Feb. 24, (affected by ice); minimum discharge observed, 741 second-feet Mar. 23, 24 (gage height, 9.32 feet).
1903-16, 1930-31, 1934-40: Maximum discharge observed, 3,500 second-feet Mar. 25, 1913 (gage height, 7.0 feet, former datum); minimum discharge, 540 second-feet Aug. 9, 1936 (gage height, 8.55 feet).

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

Rating tables, water year 1939-40, except periods of ice effect, (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 19						Feb. 20 to Sept. 30					
9.2	760	9.8	955	10.6	1,250	9.2	710	9.8	910	10.6	1,230
9.4	821	10.0	1,020	11.0	1,420	9.4	775	10.0	980	11.0	1,410
9.6	886	10.3	1,130	11.4	1,600	9.6	840	10.3	1,100	11.4	1,600

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	853	920	853	840	1,060	806	980	1,320	1,060	1,020	806	1,020
2	853	920	886	820	1,020	606	1,060	1,320	1,060	980	806	1,020
3	821	920	920	660	1,020	806	1,020	1,410	1,020	945	840	1,020
4	821	920	955	860	1,020	806	1,140	1,360	980	910	840	980
5	790	886	955	660	990	606	1,180	1,180	945	910	875	945
6	790	886	920	840	990	840	1,230	1,280	945	910	980	910
7	790	886	853	820	955	606	1,360	1,360	910	840	980	910
8	790	920	920	820	920	606	1,500	1,320	910	840	910	875
9	821	920	920	800	886	606	1,550	1,230	980	840	875	875
10	853	1,060	920	620	821	806	1,500	1,140	945	806	840	875
11	853	1,020	886	820	853	806	1,500	1,140	910	840	806	910
12	853	1,020	886	840	880	806	1,500	1,100	910	875	606	910
13	853	1,020	886	840	880	775	1,410	1,060	910	840	806	910
14	853	990	886	840	800	775	1,320	1,140	910	840	840	910
15	886	990	886	840	*900	806	1,280	1,230	875	806	806	910
16	853	955	853	800	920	606	1,360	1,230	875	806	806	910
17	853	955	886	820	900	775	1,410	1,180	840	806	775	910
18	853	920	886	840	880	806	1,500	1,180	1,180	806	875	875
19	821	920	886	880	850	775	1,550	1,280	1,500	775	980	875
20	821	886	920	940	840	806	1,500	1,320	1,280	775	980	875
21	853	886	920	1,000	806	806	1,500	1,280	1,140	775	910	910
22	853	886	920	1,050	775	775	1,500	1,410	1,020	775	980	910
23	821	886	886	1,100	840	741	1,460	1,320	1,020	775	910	910
24	853	886	886	1,100	806	741	1,410	1,280	1,100	806	910	1,020
25	821	853	886	1,100	606	806	1,410	1,230	1,320	806	910	1,060
26	853	853	886	1,100	806	806	1,410	1,280	1,180	806	875	1,060
27	853	853	853	1,020	806	806	1,360	1,180	1,100	806	910	1,020
28	886	853	860	1,020	840	840	1,320	1,280	1,100	806	910	1,020
29	886	853	900	1,060	806	806	1,230	1,180	1,100	945	910	980
30	920	853	900	1,060	-	875	1,230	1,140	1,100	910	910	945
31	886	-	860	1,060	-	1,020	-	1,100	-	840	980	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	26,166	920	790	844	0.938	1.08
November	27,576	1,060	853	919	1.02	1.14
December	27,710	955	850	894	.993	1.15
Calendar year 1939	351,945	1,830	754	964	1.07	14.54
January	28,470	1,100	800	918	1.02	1.18
February	25,674	1,060	775	885	.983	1.06
March	25,042	1,020	741	808	.898	1.03
April	40,680	1,550	980	1,356	1.61	1.68
May	38,460	1,410	1,060	1,241	1.38	1.59
June	31,125	1,500	840	1,038	1.15	1.29
July	28,210	1,020	775	845	.939	1.08
August	27,345	980	775	882	.980	1.13
September	28,260	1,060	875	942	1.05	1.17
Water year 1939-40	352,718	1,550	741	964	1.07	14.58

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 22, Feb. 3, 12-19.

Au Sable River near Au Sable, Mich.

Location.- Lat. 44°26', long. 83°26', in sec. 35, T. 24 N., R. 8 E., at Foote hydraulic plant of Consumers Power Co., 5 miles northwest of Au Sable.

Drainage area.- 1,540 square miles.

Records available.- July 1939 to September 1940.

Extremes (regulated).- Maximum daily discharge during year, 2,900 second-feet July 4; leakage only Jan. 1, June 9, July 27.
1939-40: Maximum daily discharge, that of July 4, 1940; minimum, that of Jan. 1, June 9, July 27, 1940.

Remarks.- Discharge computed from records of operation of power plant. Flow regulated by storage above Foote Plant.

Cooperation.- Record of daily discharge furnished by Consumers Power Co., Jackson, Mich.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	238	788	1,380	0	937	1,090	1,190	1,340	1,180	1,690	1,100	747
2	1,120	1,330	166	1,000	1,060	266	1,570	1,560	913	1,530	1,010	1,140
3	1,080	751	318	946	244	461	1,470	1,540	1,530	1,600	126	1,280
4	1,360	527	975	1,270	308	1,290	1,370	726	1,320	2,900	152	1,430
5	1,080	339	1,280	746	1,110	1,040	1,400	699	1,140	1,370	1,430	1,320
6	1,010	1,310	1,440	566	1,290	993	635	1,480	1,580	615	1,560	1,260
7	573	1,520	1,170	346	1,300	1,020	518	1,320	1,260	195	1,350	1,220
8	535	1,240	1,250	893	1,150	1,170	2,550	1,370	578	1,140	1,280	190
9	692	1,080	285	1,130	1,260	219	1,660	1,340	0	1,220	1,210	1,910
10	1,530	818	37	1,350	164	319	1,630	1,440	1,610	960	1,960	537
11	879	536	1,220	1,550	133	1,090	1,710	1,210	1,880	1,030	756	393
12	1,290	372	1,350	691	1,160	1,140	1,830	675	1,710	659	1,150	893
13	814	880	1,140	147	1,360	1,380	1,260	1,640	1,520	297	1,120	1,240
14	280	915	1,330	785	931	848	290	1,560	1,320	589	1,190	1,040
15	297	1,410	1,150	1,290	1,070	1,240	1,200	1,400	517	874	1,060	1,620
16	1,020	1,730	227	1,430	843	1,640	1,430	1,650	432	1,300	541	1,090
17	1,240	1,710	325	1,040	452	462	1,540	1,560	1,810	1,120	620	1,400
18	1,330	784	1,190	809	485	1,380	1,740	1,570	1,240	1,390	1,530	1,580
19	1,420	193	1,140	222	1,150	1,000	1,780	1,540	1,460	1,330	1,320	1,140
20	733	1,120	1,410	160	1,030	1,360	873	1,620	1,130	122	1,350	1,230
21	424	1,360	1,470	325	1,140	1,460	321	1,620	1,340	223	1,260	957
22	328	915	865	1,110	1,200	1,090	1,340	1,710	305	1,380	1,150	805
23	1,220	489	355	1,220	1,350	423	1,460	1,590	310	990	1,400	1,390
24	1,130	739	125	1,320	113	430	1,480	1,590	1,380	943	900	1,480
25	1,260	218	378	1,260	261	1,040	1,010	1,600	1,290	1,160	698	1,440
26	1,270	1,650	1,510	1,180	792	1,130	1,480	1,590	1,490	1,090	1,130	1,820
27	1,430	775	1,490	239	1,260	1,040	1,070	1,620	1,580	0	1,060	1,050
28	401	1,380	1,630	374	1,110	1,020	865	1,700	1,560	298	1,260	693
29	411	1,450	865	1,240	1,080	1,160	1,460	1,630	197	1,270	1,540	1,110
30	1,120	1,340	560	1,240	-	2,200	1,490	1,540	433	885	1,720	1,440
31	1,040	-	1,900	1,110	-	1,350	-	1,640	-	877	1,170	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	28,553	1,530	238	921	0.598	0.69
November	29,669	1,730	193	989	.642	.72
December	29,931	1,900	37	966	.627	.72
Calendar year	-	-	-	-	-	-
January	26,989	1,550	0	871	.566	.65
February	25,745	1,360	113	888	.577	.62
March	31,751	2,200	219	1,024	.665	.77
April	39,422	2,350	290	1,314	.853	.95
May	45,070	1,710	675	1,454	.944	1.09
June	35,815	1,880	0	1,127	.732	.82
July	31,247	2,900	0	1,008	.655	.75
August	35,083	1,950	126	1,132	.735	.85
September	34,845	1,910	190	1,161	.754	.84
Water year 1939-40	392,118	2,900	0	1,071	.695	9.47

Note.- Discharge for days for which no flow is indicated is small leakage through power plant.

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 State Highway 70, 3 miles north of Sterling.

Drainage area.- 320 square miles.

Records available.- January 1937 to September 1940.

Extremes.- Maximum discharge recorded during year, 2,700 second-feet Mar. 31 (gage height, 10.65 feet, affected by ice); minimum recorded, 115 second-feet Aug. 1, 2 (gage height, 1.38 feet).

1937-40: Maximum discharge observed, 2,760 second-feet Mar. 17, 1938; (gage height, 12.07 feet, affected by ice); minimum observed, 110 second-feet Aug. 16, 17, 30, 1937 (gage height, 1.30 feet).

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

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	-	-	200	190	180	1,120	353		-	130	283
2	159	-	-	240	190	170	950	-		-	119	a260
3	180	-	-	220	160	200	775	-		-	158	a240
4	184	-	-	200	200	180	1,090	-		-	152	a220
5	168	-	-	180	190	190	845	-		-	188	a200
6	165	-	-	180	190	190	792	-		-	248	a190
7	172	-	-	170	190	190	828	-		-	232	182
8	184	-	-	160	180	190	810	-		-	186	170
9	179	-	-	170	170	190	810	-		-	-	159
10	199	-	-	170	160	160	695	-		-	-	170
11	205	-	-	180	170	140	680	-		-	-	170
12	193	-	-	190	160	130	560	-		-	-	172
13	193	-	221	200	160	140	446	-		-	-	175
14	225	217	221	a300	150	150	419	-		-	-	192
15	a230	217	215	a400	140	150	392	-		-	-	217
16	a220	205	221	a300	150	150	379	-		-	-	211
17	a200	203	209	a240	150	160	366	-		135	-	a200
18	188	209	199		160	160	488	-		130	-	195
19	186	197	219		150	180	531	-		133	-	236
20	186	193	230		160	190	446	-		127	328	328
21	186	190	220	a200	160	190	419	-		135	273	252
22	188	197	210		160	180	392	-		127	241	219
23	182	190	210		150	180	366	-		136	225	201
24	192	193	207		160	160	328	-		150	201	239
25	207	-	201	200	140	180	340	-		150	188	366
26	201	-	225	200	160	200	328	-		-	228	298
27	a210	-	195	200	170	220	290	-		-	217	254
28	a240	-	179	200	170	220	298	-		-	199	a230
29	a230	-	197	200	170	260	290	446		-	-	a210
30	a220	-	199	200	-	880	328	392		141	-	a190
31	a210	-	200	190	-	1,700	-	353		135	-	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,057	240	159	195	0.609	0.70
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-
January	6,490	400	160	209	.653	.75
February	4,510	200	140	166	.519	.56
March	7,760	1,700	130	250	.781	.90
April	16,601	1,120	290	560	1.75	1.95
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	6,629	366	159	221	.691	.77
Water year	-	-	-	-	-	-

a No gage-height record; discharge computed on basis of record for Pine River at Alma and Chippewa River near Mt. Pleasant.

Note.- Stage-discharge relation affected by ice Dec. 20-23, Dec. 31 to Jan. 13, Jan. 25 to Mar. 31.

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 1940.

Extremes.- Maximum discharge during year, about 2,300 second-feet Mar. 30 (gage height, 6.70 feet, affected by ice); minimum, 8.5 second-feet July 29; minimum gage height, 1.63 feet Dec. 28.

1931-40: 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 period of ice effect or 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.

Rating table, water year 1939-40, except period of ice effect (gage-height, in feet, and discharge, in second-feet)
(Shifting-control method used June 24 to Sept. 30)

1.6	8.5	2.6	250	4.5	1,020
1.8	38	3.0	388	5.0	1,270
2.0	86	3.5	590	6.0	1,950
2.3	162	4.0	806	7.0	2,750

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		64	79	65	55	75	1,450	155	164	491	41	557
2			77	70	65	80	1,450	187	196	466	34	510
3			78	65	65	85	1,500	187	180	399	47	416
4	a50	a75	88	60	65	90	1,170	235	139	322	51	344
5			80	65	70	85	980	236	144	266	77	306
6			75	70	55	90	870	322	161	209	91	268
7			82	65	60	*120	698	293	146	192	75	224
8			75	70	60	180	613	287	133	157	62	202
9		a70	65	70	60	160	592	282	110	147	66	148
10	a55		71	65	60	100	592	267	119	139	65	136
11			80	70	65	100	571	246	230	129	51	139
12		a65	67	75	65	85	529	234	292	122	54	135
13			74	70	65	95	504	209	498	112	54	129
14		63	80	90	60	95	483	204	521	115	45	126
15		65	85	120	65	65	474	206	546	106	32	119
16	a60	76	85	80	65	100	430	180	462	94	47	114
17		70	89	55	65	100	418	201	373	91	58	104
18		71	84	60	70	130	415	204	343	89	75	121
19	62	73	51	60	75	180	388	199	298	89	77	104
20	58	72	69	60	65	400	358	207	266	84	59	97
21	70	66	76	60	65	300	322	175	231	75	48	94
22	59	69	137	60	70	230	308	202	192	72	49	86
23	63	84	98	60	75	210	276	182	192	76	62	92
24	59	88	132	55	70	190	244	168	231	52	61	85
25	a70	60	168	60	70	170	219	129	250	51	86	95
26	a60	59	74	60	75	160	201	134	318	52	125	83
27	103	84	126	65	70	150	171	168	361	70	141	95
28	a80	61	24	60	65	170	165	140	336	84	232	98
29	a70	69	60	65	65	250	153	149	318	27	276	98
30	a65	75	65	60	-	1,900	130	140	434	47	500	87
31	63	-	60	65	-	1,620	-	156	-	51	522	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,867	-	-	60.2	0.112	0.13
November	2,119	-	-	70.6	.131	.15
December	2,564	168	24	82.4	.153	.18
Calendar year 1939	74,118	1,510	14	203	.377	5.12
January	2,075	120	55	66.9	.124	.14
February	1,900	75	55	65.6	.122	.13
March	7,765	1,900	65	250	.465	.54
April	16,474	1,450	130	549	1.02	1.14
May	6,284	322	129	203	.377	.43
June	8,184	546	110	273	.507	.57
July	4,476	491	27	144	.268	.31
August	3,263	522	32	105	.195	.23
September	5,208	557	83	174	.323	.36
Water year 1939-40	62,169	1,900	24	170	.316	4.31

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of two discharge measurements and records for Tittabawassee River at Midland.

Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 30.

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 to September 1940.

Extremes.- Maximum discharge observed during period, 3,120 second-feet Mar. 31; maximum gage height, 11.60 feet Mar. 30, (affected by ice); minimum discharge observed, 56 second-feet Aug. 17 (gage height, 2.93 feet).

Remarks.- Records good above and fair below 100 second-feet, except those for period of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				80	70	70	1,680	165	175	508	64	508
2				80	65	70	1,620	186	186	562	64	508
3				80	75	75	1,560	246	197	508	69	456
4				75	80	85	1,430	220	175	432	60	386
5				65	80	*100	1,200	260	165	344	69	324
6				70	85	100	1,000	324	129	290	165	290
7				75	70	120	830	364	165	220	113	260
8				80	70	160	680	324	175	208	92	220
9				75	70	210	620	324	137	186	86	208
10				75	75	180	620	290	129	165	80	175
11				70	75	160	620	274	137	155	74	146
12				75	80	110	562	246	146	146	74	146
13				80	80	110	534	246	364	146	74	137
14				110	85	110	508	220	534	129	106	129
15				150	70	120	508	220	562	129	80	121
16				140	75	95	482	220	562	129	69	121
17				90	75	120	432	197	456	113	60	106
18				75	70	150	456	220	408	106	64	106
19				75	80	200	432	208	386	106	80	113
20				70	85	600	386	232	324	106	80	106
21				75	80	380	364	208	290	99	74	99
22				75	75	270	344	220	260	92	64	99
23				70	80	250	306	220	208	92	69	92
24				70	75	210	290	208	260	86	69	92
25				65	80	200	260	175	260	80	69	92
26				70	80	190	246	165	290	74	106	92
27				75	*80	180	220	146	408	74	155	86
28				75	80	180	208	175	408	74	165	99
29				85	70	300	186	175	364	99	274	92
30				70	-	2,500	165	155	364	80	386	92
31				75	-	3,040	-	155	-	60	508	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	2,495	150	65	80.5	0.126	0.15
February	2,215	85	65	76.4	.120	.13
March	10,645	3,040	70	343	.538	.62
April	18,749	1,680	165	625	.981	1.09
May	6,988	364	146	225	.353	.41
June	8,624	562	129	287	.451	.50
July	5,598	562	60	181	.284	.33
August	3,562	386	60	115	.181	.21
September	5,501	508	86	183	.287	.32
Water year	-	-	-	-	-	-

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 30.

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 1940.

Extremes.- Maximum discharge observed during year, 2,820 second-feet April 3 (gage height, 21.33 feet); minimum observed, 36 second-feet Oct. 8 (gage height, 12.96 feet).
1931-40: 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 good except those for periods of ice effect, which are poor. Gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	71	65	55	65	80	1,870	180	210	456	52	79
2	40	67	76	60	65	85	2,700	180	240	378	50	79
3	41	70	84	60	65	85	2,760	220	240	306	51	79
4	44	72	90	60	65	90	2,400	251	230	240	51	77
5	40	70	90	60	65	100	1,870	251	200	220	51	77
6	40	61	111	55	60	110	1,520	251	190	190	61	74
7	40	61	97	55	60	140	1,340	240	134	152	68	73
8	38	61	84	55	60	140	1,380	230	134	126	68	73
9	48	65	90	55	60	140	1,030	220	a140	126	60	71
10	44	82	80	55	60	140	970	200	a150	126	53	68
11	47	73	77	55	65	110	858	161	d160	126	48	68
12	50	a75	82	50	70	100	774	143	180	126	47	65
13	48	a75	82	55	70	100	746	143	251	104	64	55
14	46	a80	74	60	70	100	664	134	273	90	71	62
15	45	82	77	70	70	*98	612	134	284	82	82	61
16	45	72	78	75	70	95	534	134	284	73	84	59
17	44	77	78	75	70	95	482	134	273	76	90	62
18	43	78	79	75	70	95	430	143	330	76	90	72
19	44	67	76	75	70	100	404	143	456	71	77	70
20	44	64	84	75	70	130	378	143	560	66	72	62
21	44	65	79	70	75	160	330	143	456	64	74	62
22	48	76	60	70	75	160	306	284	330	62	68	64
23	50	66	60	65	70	160	284	430	330	64	65	61
24	47	65	60	65	70	160	251	378	354	55	70	65
25	52	68	65	65	70	160	230	354	456	64	84	67
26	51	73	70	65	75	150	220	354	508	67	90	67
27	82	65	65	65	75	160	210	354	560	65	90	68
28	82	65	60	65	80	170	200	284	534	62	84	71
29	78	65	55	65	80	600	190	230	608	59	84	73
30	68	65	a55	65	-	2,290	190	200	482	59	84	74
31	62	-	55	65	-	1,640	-	190	-	54	82	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,539	82	38	49.6	0.084	0.10
November	2,096	82	61	69.9	.118	.13
December	2,338	111	55	75.4	.127	.15
Calendar year 1939	70,969	1,220	31	194	.327	4.47
January	1,960	75	50	63.2	.107	.12
February	1,990	80	60	68.6	.116	.12
March	7,943	2,290	80	256	.432	.50
April	26,133	2,760	190	871	1.47	1.64
May	6,836	430	134	221	.373	.43
June	9,437	560	134	315	.531	.59
July	3,895	456	54	126	.212	.24
August	2,165	90	47	69.8	.118	.14
September	2,068	79	59	68.9	.116	.13
Water year 1939-40	68,400	2,760	38	187	.315	4.29

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station near Flint.
d Doubtful gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 22 to Mar. 29.

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 and 5 miles downstream from Swartz Creek. Datum of gage is 678.80 feet above mean sea level.

Drainage area.- 927 square miles.

Records available.- August 1932 to September 1940.

Extremes.- Maximum discharge during year, 3,850 second-feet March 30 (gage height, 8.17 feet); minimum, 35 second-feet Oct. 1 (gage height, 1.99 feet).
1932-40: Maximum discharge, 6,970 second-feet Feb. 14, 1938 (gage height, 11.20 feet), from rating curve extended above 4,400 second-feet; minimum, 9.0 second-feet Aug. 7, 1934.

Remarks.- Records good. Some regulation by reservoirs above station. City of Flint diverts water above station for municipal and industrial use, but sewage from city is included in flow at station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	91	98	75	88	91	2,440	207	306	670	59	245
2	49	88	107	75	80	90	3,070	288	233	625	59	331
3	54	88	113	75	85	145	3,350	194	332	571	62	113
4	53	83	117	74	83	142	2,890	301	306	494	60	191
5	51	85	124	74	82	135	2,530	310	245	396	125	188
6	51	86	135	68	79	197	1,820	414	211	391	104	152
7	49	86	130	65	79	261	1,520	382	174	364	88	133
8	57	90	119	70	79	249	1,520	337	137	233	85	124
9	54	88	119	70	80	283	1,340	310	150	162	77	130
10	102	104	119	71	90	216	1,280	274	263	211	162	156
11	66	102	115	70	85	178	1,220	253	306	174	55	115
12	67	94	113	70	86	157	1,130	225	350	157	73	115
13	67	96	124	64	85	154	1,010	215	409	144	76	119
14	71	100	130	146	90	154	958	194	422	137	100	273
15	56	102	90	111	91	137	676	191	454	163	111	80
16	63	100	96	110	90	150	720	188	436	144	162	82
17	65	96	109	107	93	154	625	179	427	133	137	88
18	56	102	113	104	85	182	625	168	640	109	130	86
19	59	98	109	109	91	361	602	205	1,040	64	115	119
20	61	90	111	93	94	602	571	194	1,100	61	109	113
21	71	90	109	91	98	360	540	191	795	62	117	100
22	61	94	83	86	96	274	486	265	625	77	117	94
23	65	91	143	83	91	292	450	481	670	74	113	96
24	65	91	67	88	91	239	324	454	602	65	98	126
25	104	91	76	82	96	219	233	432	602	66	169	102
26	82	94	102	83	91	191	270	427	770	66	176	98
27	213	88	85	80	90	171	270	454	795	99	274	96
28	100	86	79	83	90	257	249	414	770	88	215	98
29	90	90	79	88	91	1,500	410	404	720	76	337	96
30	96	94	82	83	-	3,750	140	278	695	70	306	93
31	86	-	76	82	-	3,250	-	319	-	61	274	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,225	213	41	71.8	0.077	0.09
November	2,776	104	83	92.5	.100	.11
December	3,272	143	67	106	.114	.13
Calendar year 1939	107,364	2,100	40	294	.317	4.31
January	2,630	146	64	84.8	.091	.11
February	2,539	98	79	87.6	.094	.10
March	14,539	3,750	90	469	.506	.58
April	33,269	3,350	140	1,109	1.20	1.33
May	9,148	481	168	295	.318	.37
June	14,985	1,100	137	500	.539	.60
July	6,177	670	61	199	.215	.25
August	4,145	337	55	134	.145	.17
September	3,952	331	80	132	.142	.16
Water year 1939-40	99,657	3,750	41	272	.293	4.00

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 to September 1940.

Extremes.- Maximum discharge observed during period, 5,600 second-feet Mar. 30 (gage height, 17.64 feet, affected by ice), minimum observed, 60 second-feet Jan. 1; minimum gage height, 3.88 feet July 27.

Remarks.- Records good except those for periods of ice effect or shifting control, which are poor. Gage read twice daily.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 5-29)

4.0	70	6.5	508	12.0	2,300
4.3	97	7.0	630	13.0	2,700
4.6	138	8.0	908	14.0	3,120
5.0	204	9.0	1,220	15.0	3,580
5.5	296	10.0	1,560	16.0	4,390
6.0	396	11.0	1,920		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				60	100	95	2,910	231	418	682	67	277
2				80	100	95	3,080	296	376	630	67	231
3				80	95	100	3,340	396	296	556	70	178
4				80	90	140	3,380	316	356	508	67	130
5				80	100	*190	3,040	396	336	440	77	162
6				80	100	200	2,540	396	277	356	146	162
7				85	100	380	1,920	484	240	356	146	138
8				75	100	440	1,780	440	240	316	97	123
9				70	100	440	1,740	396	196	213	97	109
10				85	100	400	1,530	376	196	178	92	178
11				85	95	280	1,460	356	196	204	109	154
12				85	95	*270	1,420	316	356	178	92	116
13				85	95	190	1,290	296	376	146	77	116
14				85	95	170	1,090	277	396	123	162	116
15				150	90	210	1,060	258	418	130	130	258
16				150	95	190	630	258	440	123	130	103
17				95	100	190	764	258	396	130	154	92
18				140	105	220	682	258	396	116	146	92
19				95	105	260	682	240	938	97	154	97
20				90	100	950	656	277	1,120	74	130	130
21				110	*110	900	630	258	1,060	67	109	116
22				90	115	480	580	258	708	67	116	103
23				95	110	340	440	356	630	82	123	103
24				105	100	340	440	532	792	70	109	109
25				90	95	310	396	296	792	67	103	116
26				90	80	300	316	462	736	70	146	123
27				95	90	280	336	532	792	64	213	103
28				90	100	280	336	484	820	74	240	103
29				100	90	600	356	440	792	70	231	97
30				90	-	*4,500	484	418	736	64	336	109
31				95	-	3,720	-	336	-	70	356	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	2,885	150	60	93.1	0.083	0.10
February	2,850	115	80	98.3	.088	.09
March	17,460	4,500	95	563	.503	.58
April	39,108	3,380	316	1,304	1.16	1.30
May	10,893	532	231	351	.313	.36
June	15,821	1,120	196	527	.471	.53
July	6,321	682	64	204	.182	.21
August	4,292	356	67	138	.123	.14
September	4,044	277	92	135	.121	.13
Water year	-	-	-	-	-	-

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 30.

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 1940.

Extremes.- Maximum discharge observed during year, 304 second-feet Mar. 31 (gage height, 17.84 feet); minimum observed, 0.5 second-foot Jan. 6, 7 (gage height, 14.90 feet).
1933-40: Maximum discharge observed, 356 second-feet Feb. 16, 1938 (gage height, 18.10 feet), from rating curve extended above 170 second-feet; minimum not determined.

Remarks.- Records good except those below 2.0 second-feet and above 170 second-feet, and those for period of ice effect, which are fair. Occasional regulation at dam above station. Gage read twice daily.

Rating table, water year 1939-40, except period of ice effect, (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 7 to July 21)

14.9	0.5	15.6	31	16.6	166
15.0	1.7	15.8	52	17.0	213
15.2	6.7	16.0	79	17.4	257
15.4	16	16.3	124	17.8	304

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	4.8	8.2	4.2	4.2	6.7	257	14	20	32	1.4	8.2
2	1.7	4.8	9.0	3.2	5.0	6.7	213	17	20	34	1.1	7.4
3	1.7	4.8	8.2	3.0	5.0	6.7	166	20	19	21	1.1	7.4
4	1.7	4.8	9.0	3.0	4.8	6.7	132	21	16	22	1.1	7.4
5	1.7	4.8	9.0	1.7	4.8	6.7	116	22	13	18	1.1	7.0
6	1.4	4.8	9.0	.9	4.8	14	94	22	11	11	2.0	6.7
7	1.4	4.8	9.0	.5	5.0	b16	80	20	8.6	7.0	2.0	6.4
8	1.4	4.8	8.2	.7	5.3	*b7.0	78	20	8.2	6.0	2.0	5.6
9	1.2	4.8	7.4	.8	5.3	7.0	73	20	8.6	6.0	1.9	4.8
10	1.7	5.0	8.2	1.4	5.6	b7.0	71	17	9.9	5.0	1.5	4.8
11	1.7	5.3	7.0	2.4	5.6	b7.2	65	16	16	4.2	1.4	5.0
12	2.0	5.3	6.7	3.2	5.3	b7.6	60	14	14	4.5	1.5	5.3
13	2.2	5.3	6.0	1.7	6.0	b8.0	55	13	19	4.0	1.7	4.5
14	2.4	5.3	5.6	1.0	6.0	b8.0	50	12	17	3.5	2.4	5.0
15	2.8	4.8	6.0	1.4	6.0	*b7.8	45	12	15	3.5	2.8	4.8
16	2.4	4.8	6.7	6.0	6.0	b7.5	40	12	13	3.5	2.6	4.8
17	2.4	4.8	6.7	7.8	5.6	b7.5	36	13	12	3.7	2.4	5.3
18	2.2	4.8	6.0	7.8	5.0	b7.5	35	13	11	3.5	2.0	5.3
19	2.4	5.0	6.0	7.0	6.0	b7.5	33	13	29	3.5	2.2	5.3
20	2.8	6.0	6.0	6.0	6.0	b7.5	32	14	25	3.2	2.8	5.0
21	3.7	5.3	5.6	4.2	6.0	b7.5	29	14	26	2.6	3.5	4.8
22	4.2	5.3	5.0	4.2	6.0	b7.5	26	26	24	2.8	3.2	4.2
23	4.2	5.3	5.3	4.2	6.0	b10	22	21	15	2.6	3.2	3.5
24	4.0	4.8	6.0	4.2	6.7	b16	19	17	16	2.2	2.8	3.5
25	3.5	4.8	6.7	4.2	6.0	b16	19	20	20	2.0	2.6	3.7
26	3.7	4.8	6.4	4.2	6.0	b16	17	20	33	2.0	3.2	4.2
27	5.0	4.2	7.4	4.5	6.7	b10	17	20	31	2.0	6.0	4.8
28	4.8	3.7	7.4	4.8	6.4	9.9	14	18	32	1.7	6.0	4.8
29	5.3	3.7	7.0	4.2	6.0	26	14	17	33	1.7	6.7	4.8
30	5.3	3.7	6.0	4.5	-	68	14	15	31	1.7	7.8	4.5
31	5.3	-	4.2	4.2	-	304	-	18	-	1.7	7.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	87.7	5.3	1.2	2.83	0.050	0.06
November	145.2	6.0	3.7	4.84	.085	.09
December	214.9	9.0	4.2	6.93	.122	.14
Calendar year 1939	6,353.9	166	1.1	17.4	.305	4.13
January	111.1	7.8	.5	3.58	.063	.07
February	163.1	6.7	4.2	5.62	.099	.11
March	651.5	304	6.7	21.0	.368	.43
April	1,922	257	14	64.1	1.12	1.25
May	531	26	12	17.1	.300	.35
June	566.3	33	8.2	18.9	.332	.37
July	222.1	34	1.7	7.16	.126	.14
August	89.8	7.8	1.1	2.90	.051	.06
September	158.8	8.2	3.5	5.29	.093	.10
Water year 1939-40	4,863.5	304	.5	13.3	.233	3.17

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

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 (general adjustment of 1929).

Drainage area.- 2,400 square miles.

Records available.- March 1936 to September 1940.

Extremes.- Maximum discharge during year, 6,980 second-feet Mar. 31 (gage height, 8.57 feet); minimum, 69 second-feet Sept. 27 (gage height, -0.16 foot).
1936-40: Maximum discharge, 21,100 second-feet Feb. 7, 1938 (gage height, 15.72 feet); minimum, that of Sept. 27, 1940.

Remarks.- Records good. 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. Records of daily discharge not adjusted for diversion. Low flow regulated by power plants above station.

Cooperation.- Gage-height record, some discharge measurements and records of diversion furnished by Dow Chemical Co.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	636	826	412	660	434	5,510	2,630	1,680	926	184	1,470
2	351	886	432	394	382	333	4,510	2,690	1,060	870	173	1,290
3	619	964	514	388	342	352	4,050	3,410	1,130	858	400	1,110
4	406	570	489	410	615	726	3,790	3,150	1,300	642	279	764
5	493	490	762	449	738	1,250	3,590	2,150	1,410	622	412	912
6	391	540	738	363	634	1,030	2,970	2,710	1,330	408	408	590
7	312	788	770	308	714	622	2,770	2,610	1,100	410	448	448
8	445	828	767	302	568	812	3,190	2,570	576	616	602	656
9	320	610	652	302	612	1,220	2,610	2,090	503	496	526	609
10	883	634	712	728	488	1,440	2,160	2,040	522	300	252	650
11	731	539	677	612	367	1,220	2,960	1,820	808	275	220	480
12	506	464	602	612	480	1,170	2,750	946	504	270	714	668
13	548	444	478	348	546	1,140	1,990	844	618	261	565	890
14	402	590	553	704	750	602	1,490	1,330	838	244	215	769
15	322	628	562	2,540	672	535	1,800	2,070	823	272	188	432
16	333	742	531	2,230	438	432	1,920	1,480	904	242	310	318
17	633	986	444	1,090	334	400	1,790	1,500	653	222	582	531
18	771	696	353	681	332	974	2,280	1,190	1,340	245	357	470
19	709	464	850	551	412	1,790	2,250	1,140	716	240	240	740
20	651	602	892	463	692	1,140	1,800	2,000	452	242	268	610
21	398	754	673	418	570	1,360	1,440	2,110	362	386	441	474
22	414	722	1,070	456	646	1,260	1,320	2,280	415	450	435	350
23	346	421	769	665	704	746	1,310	2,650	750	370	422	182
24	324	330	458	580	336	532	1,460	2,690	1,230	380	359	662
25	513	454	294	531	377	518	1,380	2,690	1,850	390	252	683
26	401	346	445	530	518	437	1,270	2,010	2,140	452	398	445
27	1,020	320	320	446	626	1,260	1,270	2,120	1,650	289	454	268
28	616	420	462	284	441	1,110	1,120	2,470	1,500	202	768	297
29	500	376	616	526	414	1,480	1,080	2,360	1,070	211	1,240	341
30	579	572	402	e72	-	4,920	1,280	1,590	807	324	1,590	365
31	693	-	295	618	-	6,820	-	1,630	-	242	1,470	-

Month	Observed				Mean diversion†	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	15,940	1,020	310	514	63	677	0.240	0.28
November	17,818	986	320	594	53	647	.270	.30
December	18,408	1,070	294	594	48	642	.268	.31
Calendar year 1939	357,155	7,140	130	979	55	1,034	.431	5.85
January	19,813	2,540	284	639	49	688	.287	.33
February	15,408	750	332	550	52	602	.251	.27
March	38,065	6,820	333	1,228	54	1,282	.534	.62
April	69,100	5,510	1,080	2,303	59	2,362	.984	1.10
May	64,770	3,410	844	2,089	70	2,159	.900	1.04
June	30,021	2,140	415	1,001	83	1,084	.452	.50
July	12,337	926	202	398	88	486	.202	.23
August	15,172	1,590	173	489	91	580	.242	.28
September	18,472	1,470	182	616	82	698	.291	.32
Water year 1939-40	335,324	6,820	173	916	66	982	.409	5.68

† Diversion by Dow Chemical Co. for industrial use.

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 1940.

Extremes.- Maximum discharge observed during year, about 950 second-feet Mar. 30 (gage height, 9.87 feet, affected by ice); minimum observed, 3.4 second-feet Oct. 1; minimum gage height, 0.48 foot Aug. 1, 2, 15, 16, 17.
1934-40: Maximum discharge observed, 3,160 second-feet Feb. 7, 14, 1938, from rating curve extended above 1,000 second-feet; 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 Mar. 31 to Sept. 30; poor for remainder of year. Gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	6.0		4.5	8.5	*10	266	34	39	29	4.4	56
2	3.5	6.0		4.5	8.0	10	128	76	36	20	4.4	39
3	3.8			4.5	7.5	11	83	116	32	16	6.6	28
4	4.0			*4.5	7.0	10	159	78	25	13	9.1	22
5	5.6		6.0	5.5	7.5	11	83	48	22	12	10	20
6	4.6	6.5		5.5	8.0	12	64	140	16	11	9.1	15
7	4.7			5.5	8.5	13	56	122	15	8.4	10	14
8	4.8			6.0	9.0	30	56	78	15	7.5	8.4	12
9	5.0			4.5	9.0	140	64	60	15	6.9	6.0	11
10	5.6			4.5	8.5	125	56	44	14	6.3	5.2	14
11	3.8			5.5	8.5	60	52	37	14	6.6	5.4	16
12	4.2			6.0	9.0	45	48	33	16	6.0	6.0	15
13	4.6			6.5	9.0	30	39	28	20	6.0	5.7	14
14	4.7			14	9.0	20	38	27	19	6.0	5.4	14
15	5.0		5.5	85	9.0	20	37	30	15	5.4	5.2	14
16	5.0			105	8.5	14	36	37	13	5.4	5.0	13
17	5.0			30	8.5	14	34	39	11	5.2	8.1	12
18	5.8	7.0		50	9.0	13	52	33	10	5.0	12	11
19	6.4			26	9.5	22	74	32	9.5	4.6	15	12
20	7.0			20	10	60	52	37	10	4.6	14	13
21				18	10	140	52	39	9.1	4.6	10	12
22				14	10	75	39	44	7.8	4.6	9.1	10
23				10	10	45	32	78	12	4.4	9.1	9.1
24				9.5	11	30	30	74	30	4.4	8.4	11
25				9.5	11	24	31	69	48	4.8	8.4	12
26	6.0		5.0	9.0	12	20	30	56	40	7.2	9.8	12
27				9.0	11	16	27	56	30	6.9	12	11
28		6.5		8.5	11	18	25	56	22	5.4	15	10
29		6.5		8.5	11	65	23	48	56	6.0	27	9.1
30		6.5		8.5	-	850	25	39	45	4.8	116	8.4
31		-		*8.5	-	935	-	36	-	4.8	94	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	162.5	-	3.4	5.24	0.038	0.04
November	203.0	-	-	6.77	.049	.05
December	170.0	-	-	5.48	.040	.05
Calendar year 1939	17,169.1	499	2.7	47.0	.341	4.61
January	510.5	105	4.5	16.5	.120	.14
February	268.5	12	7.0	9.26	.067	.07
March	2,888	935	10	93.2	.675	.78
April	1,791	266	23	59.7	.433	.48
May	1,726	140	27	55.7	.404	.47
June	666.4	56	7.8	22.2	.161	.18
July	242.8	29	4.4	7.83	.057	.07
August	473.8	116	4.4	15.3	.111	.13
September	469.6	56	8.4	15.7	.114	.13
Water year 1939-40	9,572.1	935	3.4	26.2	.190	2.59

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 26 to Mar. 30. Stage-discharge relation affected by backwater from beaver dam Oct. 1 to Dec. 25; discharge computed on basis of weather records and records for stations at Alma and near Mt. Pleasant.

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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 1940.

Extremes.- Maximum discharge during year, 1,130 second-feet Mar. 30 (gage height, 6.21 feet); minimum, 56 second-feet July 29; minimum gage height, 2.88 feet Mar. 25.
1930-31, 1932-40: Maximum discharge observed, 3,120 second-feet Feb. 6, 1938 (gage height, 12.02 feet); minimum observed, 19 second-feet Aug. 16, 1936 (gage height, 3.04 feet).

Remarks.- Records good except those for period of ice effect or no gage-height record, and for period Aug. 1 to Sept. 22, all of which are fair. Regulation at low stages by power plant above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	180	134	160	*130	120	871	261	260	226	96	279
2	129	162	166	150	130	130	699	362	240	184	102	283
3	116	168	174	150	130	140	624	436	236	164	138	290
4	108	158	187	140	130	140	612	428	212	158	166	239
5	92	154	172	*130	130	150	502	382	196	140	130	235
6	100	170	174	130	130	150	452	393	187	126	149	224
7	129	150	154	120	120	170	450	388	182	129	134	195
8	119	148	158	110	120	200	454	358	181	124	166	226
9	128	145	160	110	120	200	506	326	180	118	138	240
10	118	160	140	110	120	200	467	292	178	108	180	207
11	a120	162	155	110	120	200	438	277	167	114	152	200
12	a130	151	154	110	130	130	429	243	202	110	172	201
13	140	184	146	110	130	130	407	249	212	107	158	188
14	143	154	140	140	120	130	362	224	190	110	178	184
15	139	151	156	200	120	150	343	242	186	83	176	181
16	136	163	140	130	120	160	342	270	168	86	148	186
17	140	154	142	120	130	170	326	283	152	96	154	173
18	125	152	162	120	130	170	371	276	142	82	192	164
19	127	138	146	120	130	180	435	253	156	94	225	166
20	136	160	176	120	130	294	391	286	148	80	202	174
21	136	138	186	120	130	210	352	306	152	80	213	139
22	154	140	160	120	120	190	336	330	137	97	196	178
23	173	124	150	120	120	175	300	319	166	84	209	
24	148	158	150	120	120	170	304	290	272	90	197	
25	150	140	160	120	120	178	295	288	324	96	188	
26	148	124	150	120	120	169	281	272	298	119	206	a160
27	182	150	150	120	120	180	274	326	256	91	190	
28	196	135	160	130	*120	167	246	351	235	113	198	
29	176	144	150	130	120	304	262	330	250	100	268	
30	182	144	160	130	-	1,030	251	278	243	99	351	
31	166	-	160	130	-	902	-	270	-	100	384	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,279	196	92	138	0.332	0.38
November	4,561	184	124	152	.365	.41
December	4,872	187	134	157	.377	.44
Calendar year 1939	88,509	1,010	68	242	.582	7.92
January	3,950	200	110	127	.305	.35
February	3,610	130	120	124	.298	.32
March	6,989	1,030	120	225	.541	.62
April	12,382	871	246	413	.993	1.11
May	9,589	436	224	309	.743	.86
June	6,108	324	137	204	.490	.55
July	3,508	226	80	113	.272	.31
August	5,756	384	96	186	.447	.51
September	5,832	290	-	194	.466	.52
Water year 1939-40	71,436	1,030	80	195	.469	6.38

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Pine River at Alma and weather records.
Note.- Stage-discharge relation affected by ice Dec. 23 to March 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 (general adjustment of 1929).

Drainage area.- 288 square miles.

Records available.- October 1930 to September 1940.

Average discharge.- 10 years, 162 second-feet.

Extremes.- Maximum discharge during year, 1,330 second-feet Mar. 30 (gage height, 6.19 feet); minimum, 7.2 second-feet (regulated) Feb. 1 (gage height, -0.15 foot).
1930-40: 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 (gage height, -0.80 foot).

Remarks.- Records good. Occasional regulation during low flow.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	109	78	56	19	77	1,130	154	219	147	39	238
2	45	113	87	62	74	100	989	227	161	127	36	203
3	48	109	112	68	73	81	720	427	179	101	39	169
4	56	98	107	71	74	80	669	245	134	88	39	124
5	58	105	104	78	81	76	560	432	125	80	41	114
6	57	96	94	80	46	87	494	305	115	81	46	119
7	54	92	92	75	66	116	479	194	99	79	46	103
8	52	97	93	68	83	161	403	202	94	76	44	103
9	34	127	105	65	95	164	370	201	88	80	40	90
10	62	61	104	61	76	152	345	176	91	75	34	76
11	72	77	17	56	82	129	335	148	118	68	30	68
12	78	102	35	53	71	102	309	146	172	65	33	72
13	72	108	62	63	76	89	284	121	207	76	40	82
14	73	92	79	160	81	56	251	125	203	73	51	86
15	64	91	74	187	73	59	214	127	167	60	47	90
16	57	88	81	250	62	106	144	136	124	66	41	82
17	63	85	76	203	68	110	130	155	105	65	34	78
18	62	84	87	170	74	119	139	164	98	56	37	71
19	50	89	86	147	71	128	297	157	79	61	45	65
20	44	87	83	104	70	159	295	152	72	56	54	66
21	48	82	94	93	79	167	257	162	64	48	56	70
22	48	71	88	84	75	179	168	186	71	40	65	72
23	62	87	69	84	72	153	184	268	103	39	52	69
24	78	75	68	83	79	123	105	228	177	36	50	63
25	75	68	61	88	80	125	104	247	272	36	49	62
26	74	73	75	92	78	125	158	214	292	38	57	73
27	118	75	80	92	76	114	153	380	264	42	71	64
28	141	63	56	192	74	89	137	147	213	41	100	68
29	134	71	59	160	77	493	131	240	164	41	152	81
30	124	73	62	125	-	856	143	234	149	44	160	70
31	117	-	61	21	-	880	-	192	-	48	219	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,168	141	34	69.9	0.243	0.28
November	2,646	127	61	88.2	.306	.34
December	2,429	112	17	78.4	.272	.31
Calendar year 1939	59,721	580	17	164	.569	7.69
January	3,191	250	21	103	.358	.41
February	2,105	95	19	72.6	.252	.27
March	5,454	e80	56	176	.611	.70
April	10,097	1,130	104	337	1.17	1.30
May	6,492	432	121	209	.726	.84
June	4,419	292	64	147	.510	.57
July	2,023	147	36	65.3	.227	.26
August	1,847	219	30	59.6	.207	.24
September	2,791	238	62	93.0	.323	.36
Water year 1939-40	45,662	1,130	17	125	.434	5.88

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 1940.

Extremes.- Maximum discharge during year, 4,910 second-feet Apr. 1 (gage height, 15.48 feet); minimum, 3.1 second-feet (regulated) Feb. 26; minimum discharge, 9 second-feet Oct. 12; minimum gage height, 1.61 feet Nov. 20.
1908-9, 1935-36, 1939-40: Maximum discharge observed, 9,530 second-feet Mar. 16, 1908 (gage height, 20.98 feet, site and datum then in use); minimum discharge, 0.6 second-foot (regulated) July 4, 1939 (gage height, 0.91 foot); minimum daily discharge, 2 second-feet Sept. 28, 1908.

Remarks.- Records fair except those below 200 second-feet, which are poor. Flow completely regulated, except during high water, by mill upstream.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting control method used Oct. 1-11, May 10 to Sept. 30)

1.5	1	2.5	58	4.0	297	7.0	1,050	12.0	3,020
1.7	8	3.0	114	5.0	515	8.0	1,360	14.0	4,080
2.0	24	3.5	198	6.0	760	10.0	2,110	15.5	4,910

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	66	55	13	80	80	4,140	161	327	403	35	162
2	78	78	52	49	80	80	2,730	195	212	451	37	120
3	45	72	16	64	60	a40	2,030	321	72	181	71	127
4	36	63	65	53	25	a80	1,540	195	118	225	32	93
5	34	17	57	42	50	a100	1,600	189	177	104	34	92
6	53	54	67	40	70		1,290	101	78	251	63	94
7	191	80	98	15	70	a120	900	232	76	272	85	96
8	55	62	64	45	70		760	297	48	110	80	36
9	18	118	52	55	70		900	235	95	72	81	76
10	11	70	12	55	70	a50	930	150	57	108	67	101
11	10	60	31	52	25	a100	735	59	59	185	22	121
12	9.0	78	47	52	60		660	283	153	93	28	106
13	10	88	51	50	70		578	88	366	108	36	95
14	25	55	68	20	70	a130	464	59	162	141	38	94
15	20	59	55	22	80		492	168	235	97	70	30
16	62	62	52	55	80		391	65	95	70	78	57
17	38	59	12	65	70	a60	285	219	70	74	80	83
18	33	42	47	70	25	a100	320	97	136	61	68	87
19	29	13	51	70	70	a150	331	134	227	30	125	72
20	26	31	71	70	80		367	80	211	38	91	46
21	67	36	72	25	80	a170	414	251	92	112	96	43
22	25	36	76	60	80		307	164	154	106	83	23
23	28	14	58	70	80		201	435	299	74	53	30
24	34	29	15	70	80	a90	153	310	526	74	47	48
25	32	36	11	70	30	120	306	331	1,020	80	25	86
26	30	13	55	70	*35	90	171	477	1,020	46	71	83
27	34	51	64	70	80	90	101	331	735	40	99	53
28	62	55	62	25	80	*110	67	423	622	32	101	51
29	20	63	47	50	80	400	63	154	660	27	110	28
30	57	62	48	80	-	3,170	227	321	585	41	95	33
31	64	-	20	80	-	3,920	-	106	-	34	61	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,262.0	191	9.0	40.7	0.048	0.06
November	1,622	118	13	54.1	.064	.07
December	1,571	98	11	50.7	.060	.07
Calendar year	-	-	-	-	-	-
January	1,627	80	13	52.5	.062	.07
February	1,900	80	25	65.5	.077	.08
March	10,640	3,920	40	343	.404	.47
April	23,453	4,140	63	782	.922	1.03
May	6,631	477	59	214	.252	.29
June	8,687	1,020	48	290	.342	.38
July	3,720	451	27	120	.142	.16
August	2,062	125	22	66.5	.078	.09
September	2,266	162	23	75.5	.089	.10
Water year 1939-40	65,441.0	4,140	9.0	179	.211	2.87

Peak discharge.- April 1 (6 a.m.) 4,910 second-feet.
* Winter discharge measurement made on this date.
a No gage-height record; discharge computed on basis of records for Flint River at Flint.
Note.- Stage-discharge relation affected by ice Jan. 5 to Mar. 2, Mar. 25-29.

Sebewaing River (State drain) near Sebewaing, Mich.

Location.- Wire-weight gage, 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, 1½ miles upstream from East Fork and 1½ miles southeast of Sebewaing.

Drainage area.- 62 square miles.

Records available.- January to September 1940.

Extremes.- Maximum discharge observed during period January to September 1940, 1,740 second-feet Mar. 29 (gage height, 8.1 feet); minimum observed, no flow during parts or all of January, February, July, August, and September.

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

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.1	0	1.8	8.4	3.0	117	5.0	602
1.2	.2	2.0	16	3.5	203	6.0	936
1.4	1.2	2.3	36	4.0	320	7.0	1,300
1.6	3.8	2.6	67	4.5	454	8.1	1,740

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0		0	28	1.4	6.4	7.9	0	6.2
2				0		0	18	3.8	5.1	3.8	0	3.2
3				0		0	14	5.1	4.4	2.4	0	2.4
4				0		.2	53	3.2	2.9	1.3	0	.1
5				0		.5	24	2.0	1.5	1.0	0	0
6				0		*1.2	11	1.4	.5	.6	.1	0
7				0		6.0	10	2.5	.9	.4	0	0
8				0		7.0	84	2.5	4.6	.3	0	0
9				0		7.5	29	1.9	16	.1	0	0
10				0		8.0	14	1.2	12	0	0	.1
11				0		*7.2	19	.7	8.4	0	0	0
12				0		4.0	14	.5	5.9	0	0	0
13				0		2.5	9.0	.3	12	0	0	0
14				2.0		1.6	8.2	.3	9.6	0	0	.8
15				4.0		1.5	6.2	1.1	6.4	0	0	.4
16				3.0		1.5	4.0	1.1	2.7	0	0	.3
17				1.0		5.0	2.5	1.4	1.6	0	0	.2
18				.2		4.0	13	1.2	.9	0	0	.1
19				0		*30	16	1.3	.5	0	0	.2
20				0		*50	9.0	2.2	.4	0	0	.1
21				0		40	5.9	3.8	.8	0	0	0
22				0		30	3.8	14	.4	0	0	.1
23				0		20	2.9	22	1.6	0	0	0
24				0		10	1.8	13	8.7	2.5	0	.1
25				0		8.0	2.0	24	20	7.9	0	.1
26				0		7.0	1.4	23	12	10	0	0
27				0		6.0	1.1	18	7.4	4.6	0	0
28				0		6.0	.6	11	7.4	2.1	0	0
29				0		*680	.4	7.4	13	1.2	2.7	0
30				0		280	.4	5.5	13	.5	1.4	0
31				0		62	-	6.6	-	.1	7.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	10.2	4.0	0	0.33	0.0053	0.006
February	0	0	0	0	0	0
March	1,288.7	680	0	41.6	.671	.77
April	406.2	84	.4	13.5	.218	.24
May	183.4	24	.3	5.92	.095	.11
June	187.0	16	.4	6.23	.100	.11
July	46.7	10	0	1.51	.024	.03
August	11.4	7.2	0	.37	.0060	.007
September	14.4	6.2	0	.48	.0077	.009
Water year	-	-	-	-	-	-

* Winter discharge measurement made on this date.
Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 29.

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

Location.- Wire-weight gage, 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 milee upstream from mouth and 2⅔ miles southeast of Sebewaing.

Drainage area.- 38 square miles.

Records available.- January to September 1940.

Extremes.- Maximum discharge observed during period, 614 second-feet Mar. 29 (gage height, 4.53 feet), maximum gage height, 7.07 feet on Mar. 29, affected by ice; no flow during August and parts of January, February, July, and September.

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

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.5	0	1.4	12	2.6	173
.6	.01	1.6	24	3.0	250
.8	.1	1.8	45	3.5	358
1.0	1.5	2.0	74	4.0	480
1.2	5.2	2.3	121	4.5	614

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0	0.2	11	1.1	9.0	4.0		4.7
2				0	0	.2	7.5	2.7	11	2.8		1.5
3				0	0	.1	6.2	2.0	6.2	1.7		.4
4				0	0	.1	19	1.7	4.2	.8		.04
5				0	0	.3	11	1.2	3.2	.3		.01
6				0	0	*.8	6.5	.7	2.7	.04		.01
7				0	0	1.5	5.2	1.1	2.5	.01		.01
8				0	0	5.5	9.0	.6	155	.01		0
9				0	0	5.5	15	.4	55	.01		0
10				0	0	6.5	7.5	.3	26	0		.01
11				0	0	*4.9	6.8	.2	15	0		0
12				0	0	2.0	7.5	.1	11	0		.01
13				0	0	1.5	5.4	.03	13	0		0
14				1.0	0	*1.4	4.2	.03	14	0		.02
15				3.0	0	.8	3.0	.06	9.6	0		.1
16				2.0	0	.6	3.0	.1	5.2	0		.1
17				1.0	0	.5	2.7	.6	3.4	0		.06
18				.1	0	.5	6.8	.7	2.3	0		.03
19				0	0	*15	8.2	.7	2.3	0		.08
20				0	0	*28	4.7	1.5	1.4	0		.03
21				0	0	27	3.4	1.4	.9	0		.02
22				0	0	10	3.0	9.0	.8	0		.01
23				0	0	5.0	3.8	19	2.0	0		.01
24				0	.1	3.5	3.6	7.1	5.7	0		.2
25				0	.1	2.5	1.7	9.0	11	0		.02
26				0	.1	1.5	1.3	13	7.5	0		.02
27				0	.1	1.0	1.1	5.7	5.2	0		.01
28				0	.1	2.0	.7	3.0	4.7	0		.01
29				0	.1	*200	.6	2.1	6.2	0		.01
30				0	-	220	.7	2.0	6.8	0		.01
31				0	-	31	-	1.8	-	0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	7.1	3.0	0	0.23	0.0061	0.007
February	.6	.1	0	.02	.00053	.0006
March	579.4	220	.1	18.7	.492	.57
April	170.1	19	.6	5.67	.149	.17
May	88.92	19	.03	2.87	.076	.09
June	402.8	155	.8	13.4	.352	.39
July	9.67	4.0	0	.312	.0082	.009
August	0	0	0	0	0	0
September	7.43	4.7	0	.248	.0065	.007
Water year	-	-	-	-	-	-

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 29.

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 1940.

Extremes.- Maximum discharge observed during year, about 6,000 second-feet Mar. 31 (gage height, 21.30 feet, affected by ice); minimum observed, 12 second-feet Oct. 4; minimum gage height, 4.81 feet Sept. 30.
1931, 1932-40: Maximum discharge observed, 6,980 second-feet Feb. 7, 1938 (gage height, 19.29 feet), from rating curve extended above 5,000 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, and those for periods of shifting control, which are poor. Gage read once daily.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	23	30	18	17	28	5,900	104	127	362	27	a70
2	13	23	30	16	16	24	5,120	102	140	294	25	59
3	13	20	34	20	16	26	3,350	114	160	231	19	81
4	12	20	32	16	18	28	3,200	123	156	202	78	56
5	14	21	31	16	*17	30	2,750	127	114	152	328	50
6	15	22	31	16	19	32	1,340	140	94	125	162	39
7	14	20	27	15	20	31	943	136	81	104	118	33
8	18	23	27	15	20	30	817	140	84	89	118	31
9	20	23	28	*14	19	30	1,070	131	127	93	102	28
10	75	25	26	15	20	28	859	120	a200	94	84	30
11	49	21	26	15	19	25	651	102	a700	106	58	28
12	28	20	34	20	20	26	530	91	a1,000	88	50	26
13	23	22	35	25	22	32	453	81	a700	72	66	26
14	18	27	35	40	18	34	202	78	a600	36	41	188
15	14	22	54	50	19	38	345	74	a500	38	26	41
16	16	20	33	35	19	36	311	72	453	32	21	31
17	17	20	30	25	20	32	262	74	345	24	a25	31
18	16	48	25	23	19	30	278	78	692	24	28	31
19	15	52	28	20	18	36	278	88	651	33	50	32
20	14	21	28	15	20	42	294	98	986	36	34	30
21	15	20	27	17	20	50	a250	84	610	30	27	25
22	14	21	30	21	16	60	216	81	491	28	24	22
23	15	23	26	20	20	60	175	72	362	30	22	21
24	16	23	24	20	19	58	160	78	570	30	20	27
25	20	19	22	19	20	55	136	127	1,420	33	24	28
26	22	22	23	19	21	48	123	160	1,070	33	39	21
27	31	23	19	18	22	44	116	148	817	39	33	18
28	27	22	18	18	23	40	106	160	570	a43	42	17
29	23	25	20	16	23	50	100	143	434	47	34	17
30	20	25	19	18	-	4,000	98	118	398	40	72	16
31	19	-	19	18	-	6,000	-	94	-	34	143	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	642	75	12	20.7	0.033	0.04
November	716	52	19	23.9	.038	.04
December	974	54	18	28.2	.044	.05
Calendar year 1939	80,346	2,380	11	220	.347	4.71
January	633	50	14	20.4	.032	.04
February	560	23	16	19.3	.030	.03
March	11,076	6,000	22	357	.563	.65
April	30,423	5,900	98	1,014	1.60	1.78
May	3,338	160	72	108	.170	.20
June	14,631	1,420	81	488	.770	.86
July	2,621	362	24	84.6	.133	.15
August	1,940	328	19	62.6	.099	.11
September	1,153	188	16	38.4	.061	.07
Water year 1939-40	68,607	6,000	12	187	.295	4.02

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Clinton River at Mt. Clemens.
Note.- Stage-discharge relation affected by ice Dec. 22 to Mar. 31. Shifting-control method used Oct. 1 to Dec. 21, and July 4 to Sept. 10.

Clinton River at Pontiac, Mich.

Location.- Staff gage, lat. 42°38'45", long. 83°16'10", in sec. 27, T. 3 N., R. 10 E., at municipal sewage-treatment plant near east limits of Pontiac. Datum of gage is 876.01 feet above mean sea level.

Drainage area.- 123 square miles.

Records available.- May 1935 to June 1939, February to September 1940 (discontinued).

Extremes.- Maximum discharge observed during year, 498 second-feet Mar. 26 (gage height, 3.31 feet), from rating curve extended above 200 second-feet, minimum observed, 17 second-feet Aug. 24, 25 (gage height, -0.66 foot).

1935-40: Maximum discharge observed, 716 second-feet Feb. 12, 1938 (gage height, 5.10 feet), from rating curve extended above 150 second-feet; minimum observed, 4.8 second-feet Sept. 4, 1936.

Remarks. Records fair except those above 200 second-feet and for periods of doubtful or no gage-height record, which are poor. Gage read twice daily.

Cooperation.- Gage-height record furnished by city of Pontiac.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Feb. 7-17)

-0.7	15	0	63	1.5	246
-.5	25	.5	119	2.0	316
-.3	38	1.0	181	3.3	498

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						44	101	119	68	68	23	56
2						43	113	107	68	56	23	63
3						84	131	84	68	54	24	62
4					a35	48	143	63	61	50	20	78
5						49	143	168	56	50	29	78
6						73	149	62	61	49	33	78
7					35	46	155	62	46	41	25	73
8					34	50	181	68	37	41	23	73
9					37	42	168	68	37	44	20	68
10					38	d43	181	58	39	45	20	68
11					37	44	181	73	51	44	20	63
12					37	44	181	73	49	42	20	63
13					37	43	181	73	56	50	20	58
14					39	42	181	73	51	46	22	52
15					39	39	181	73	61	50	20	41
16					40	44	161	73	63	30	20	36
17					40	39	168	73	61	29	21	35
18					42	73	181	73	60	24	35	34
19					44	62	168	101	58	24	22	37
20					51	49	155	73	59	24	22	37
21					50	49	149	73	50	22	22	50
22					40	48	143	73	59	22	24	50
23					47	52	125	73	58	22	18	50
24					42	49	125	78	44	24	17	68
25					39	53	125	73	58	26	48	50
26					49	256	119	68	55	22	36	51
27					45	63	113	68	57	23	101	51
28					46	78	113	68	57	23	42	51
29					44	143	107	63	60	23	37	48
30					-	125	113	68	63	24	44	45
31					-	101	-	90	-	23	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	-	-	-	-	-	-
February	1,159	51	34	40.0	.325	.35
March	2,020	258	39	65.2	.530	.61
April	4,455	161	101	148	1.20	1.35
May	2,412	168	62	77.8	.633	.73
June	1,651	68	37	55.0	.447	.50
July	1,105	58	22	35.6	.289	.33
August	892	101	17	28.8	.234	.27
September	1,667	76	34	55.6	.452	.50
Water year	-	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for station at Mount Clemens.
d Gage height record doubtful; discharge interpolated.

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 570.92 feet above mean sea level.

Drainage area.- 733 square miles.

Records available.- May 1934 to September 1940.

Extremes.- Maximum discharge during year, 4,940 second-feet Mar. 30 (gage height, 13.24 feet); minimum daily, 65 second-feet Dec. 28; minimum gage height, 3.28 feet Dec. 22. 1934-40: Maximum discharge observed, 11,100 second-feet Feb. 14, 1938 (gage height, 19.64 feet); minimum observed, 24 second-feet July 31, 1934; minimum gage height, 2.90 feet Oct. 15, 1934.

Remarks.- Records good above 200 second-feet, fair below, 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.

Revisions.- Revised figure of discharge, in second-feet, for Mar. 25, 1938, superseding that published in Water-Supply Paper 854, are given herein.

Mar. 25.....3,820

Month	Mean	Per square mile	Run-off in inches
March.....	1,416	1.93	2.23
Water year 1937-38.....	528	.720	9.77

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	a85	104	70		140	2,620	250	375	757	129	296
2	91	90	121	65		140	1,590	357	362	433	136	291
3	84	110	152	68		200	1,100	398	284	354	132	250
4	81	80	140	70		600	1,210	351	232	300	128	212
5	74	94	a120	70	80	700	954	279	194	245	205	185
6	73	88	99	70		900	725	385	187	204	336	185
7	77	78	111	76		1,200	639	382	166	203	215	178
8	98	91	107	78		900	895	294	165	173	170	291
9	86	98	85	#76		600	1,110	292	248	163	145	210
10	105	121	a100	80		400	831	257	581	152	138	190
11	173	98	a90	85	90	300	685	192	2,800	195	130	166
12	113	119	a100	90		250	854	208	2,410	182	121	152
13	75	123	a90	100		200	776	222	1,270	195	121	174
14	80	115	a90	200		230	687	231	870	165	121	150
15	79	119	a100	400	85	200	639	220	586	162	128	152
16	90	110	a100	250		200	557	235	383	331	128	130
17	75	94	a90	200	90	200	515	219	288	212	128	141
18	94	96	a90	150		200	596	223	464	154	123	149
19	78	108	a100	110		300	582	275	1,220	145	123	117
20	81	100	a90		150	500	506	349	1,120	120	174	123
21	79	113	a100		300	612	445	304	835	120	155	129
22	75	98	222	90	250	356	385	245	350	134	128	134
23	87	82	144		200	470	362	229	336	116	130	122
24	105	97	117		160	400	331	200	1,250	116	123	132
25	76	72	87		150	350	319	241	1,030	137	167	182
26	94	82	90		140	280	302	224	721	133	433	180
27	83	81	75		140	350	288	218	668	115	567	154
28	120	84	65	80	140	327	271	204	571	136	981	149
29	114	88	70		150	745	252	208	1,900	129	468	138
30	88	94	80		-	4,150	252	204	1,620	136	498	135
31	83	-	70		-	4,040	-	238	-	121	428	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	2,825	173	73	91.1	0.124	0.14
November.....	2,908	121	72	96.9	.132	.15
December.....	3,199	222	85	103	.141	.16
Calendar year 1939	155,861	6,970	55	427	.583	7.90
January.....	3,326	400	65	107	.146	.17
February.....	3,415	300	-	118	.161	.17
March.....	20,400	4,150	140	658	.898	1.04
April.....	21,258	2,320	252	709	.967	1.08
May.....	8,134	398	192	262	.357	.41
June.....	23,466	2,800	165	782	1.07	1.19
July.....	6,258	757	115	201	.274	.32
August.....	7,107	981	121	229	.312	.36
September.....	5,177	296	117	173	.236	.26
Water year 1939-40	107,453	4,150	55	294	.401	5.45

Peak discharge.- Mar. 30 (10 p.m.) 4,940 second-feet.
Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Raisin River at Monroe.
Note.- Stage-discharge relation affected by ice Dec. 26 to Mar. 20, Mar. 23-27.

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, 3 miles upstream from 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 1940.

Average discharge.- 10 years, 82.8 eecond-feet.

Extremes.- Maximum discharge observed during year, 850 second-feet Mar. 30 (gage height, 12.65 feet, affected by ice); minimum observed, 9.4 second-feet Oct. 5 (gage height, 3.85 feet).

1930-40: 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 good except those for periods of backwater from leaves, which are fair, and periods of backwater from ice and no gage-height record, all of which are poor. Gage read once daily.

Rating tables, water year 1939-40, except periods of ice effect and backwater from leaves (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31						Apr. 1 to Sept. 30			
3.9	11	4.8	62	6.5	245	4.0	19	5.3	120
4.0	15	5.0	78	7.0	315	4.2	28	5.6	153
4.2	23	5.3	104	8.0	460	4.4	39	6.0	199
4.4	34	5.6	133	9.0	615	4.6	54	7.0	322
4.6	47	6.0	179	10.0	781	4.8	70	8.0	460
						5.0	89		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a14	22	11	a11	16	50	335	58	a90	70	17	a300
2	14	22	9.8	11	17	45	223	79	a90	52	15	211
3	11	21	a25	11	17	a100	322	114	89	38	17	131
4	11	19	29	11	a17	475	271	94	a64	34	a19	89
5	9.4	a19	24	11	17	275	211	a80	48	31	21	58
6	11	19	21	12	16	150	153	74	38	26	259	52
7	11	19	19	a12	16	200	a225	164	a36	a24	84	45
8	a12	26	17	12	17	225	335	153	35	23	37	a39
9	30	22	17	13	18	150	375	131	a35	26	21	34
10	16	22	a19	*13	19	a100	259	109	49	20	22	32
11	17	23	21	13	a19	65	164	79	490	21	a20	30
12	18	a24	17	14	19	45	211	a60	a400	19	17	27
13	19	26	19	15	20	45	187	58	211	21	54	23
14	19	22	18	a30	20	30	a190	58	235	a24	120	26
15	a18	21	17	200	20	40	199	62	120	26	33	a32
16	17	21	17	65	20	30	153	70	a90	22	16	42
17	17	20	a18	50	20	a45	120	a70	62	20	19	32
18	17	19	18	45	a21	60	142	58	58	23	a28	30
19	17	a18	21	30	22	150	187	a60	52	22	43	24
20	17	17	21	15	35	225	114	74	48	19	24	22
21	17	18	17	a16	70	160	a90	104	40	a18	17	20
22	a17	19	16	17	110	110	79	79	28	17	15	a19
23	17	19	17	16	170	90	70	58	a70	15	14	19
24	18	19	a12	15	100	a60	66	52	199	15	16	19
25	19	19	a11	16	a70	40	66	58	175	16	a80	19
26	19	a20	10	16	50	30	66	a60	89	18	322	19
27	20	20	10	16	45	35	62	54	70	16	490	21
28	21	22	10	a16	45	45	a54	49	52	a20	431	22
29	a22	15	11	16	45	120	48	58	70	23	375	a23
30	22	18	11	16	-	850	49	a60	a70	22	199	24
31	23	-	a11	16	-	a500	-	84	-	21	403	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	530.4	30	9.4	17.1	0.088	0.10
November	611	26	15	20.4	.105	.12
December	514.8	29	9.8	16.6	.086	.10
Calendar year 1939	42,939.2	3,630	6.0	118	.608	8.23
January	770	200	11	24.8	.128	.15
February	1,091	170	16	37.6	.194	.21
March	4,535	850	30	146	.753	.87
April	5,026	375	48	168	.866	.96
May	2,421	164	49	78.1	.403	.46
June	3,203	490	28	107	.552	.61
July	762	70	15	24.6	.127	.15
August	3,248	490	14	105	.541	.62
September	1,484	300	19	49.5	.256	.28
Water year 1939-40	24,196.2	850	9.4	66.1	.341	4.68

* Winter discharge measurement made on this day.

a No gage-height record; discharge interpolated or computed on basis of records for stations at Barton and Monroe.

Note.- Stage-discharge relation affected by ice Dec. 26 to Mar. 30. Stage-discharge relation affected by backwater from leaves Nov. 6 to Dec. 25; discharge computed on basis of one discharge measurement and records for stations at Barton and Monroe.

Huron River at Barton, Mich.

Location.- Lat. 42°17'25", long. 83°44'40", in sec. 20, T. 2 S., R. 6 E., at dam and power plant of Eastern Michigan Edison Co. at Barton, near Ann Arbor.

Drainage area.- 723 square miles.

Records available.- January 1914 to September 1940.

Average discharge.- 26 years, 377 second-feet.

Extremes.- Maximum daily discharge during year, 1,280 second-feet Apr. 4; minimum daily, 57 second-feet Aug. 16.
1914-40: Maximum daily discharge, 5,840 second-feet Mar. 14, 1918; minimum daily, 4 second-feet Sept. 11, 1931.

Remarks.- Discharge computed on basis of power-plant records.

Cooperation.- Records of daily discharge furnished by Ayres, Lewis, Norris and May, consulting engineers, Ann Arbor, Mich.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	169	139	122	214	154	931	355	367	375	73	270
2	100	160	160	133	105	185	945	402	382	353	72	318
3	96	161	170	124	94	320	1,200	451	332	317	79	334
4	86	155	166	113	132	154	1,280	523	315	277	92	335
5	86	163	179	130	143	201	1,200	274	272	277	78	322
6	102	157	175	108	160	353	1,060	397	282	215	100	287
7	85	159	172	119	127	372	1,030	363	217	278	64	275
8	89	157	173	115	187	367	1,150	355	296	183	57	235
9	81	142	152	120	104	353	1,110	374	264	213	93	247
10	136	147	177	123	158	279	890	306	183	199	63	205
11	111	150	164	126	144	277	932	345	293	200	79	211
12	116	159	158	114	149	223	900	333	368	233	74	222
13	130	159	159	145	158	271	890	277	399	111	72	158
14	136	154	158	295	132	185	863	323	406	157	74	195
15	126	155	146	183	144	233	786	320	393	188	67	179
16	136	144	151	183	159	240	804	277	373	145	57	155
17	130	163	155	204	138	279	711	277	373	152	79	175
18	122	162	162	187	144	371	740	284	398	149	81	165
19	123	155	152	175	142	478	670	393	339	138	86	180
20	126	155	146	175	170	454	642	373	281	121	67	151
21	162	151	147	156	144	439	628	361	224	131	71	158
22	195	155	134	171	160	354	556	343	288	114	75	153
23	176	150	170	166	161	355	553	335	304	112	75	157
24	158	129	108	145	169	343	505	321	388	104	79	187
25	141	166	146	144	175	317	471	330	404	132	147	179
26	152	144	142	143	141	279	418	285	388	92	147	159
27	171	140	99	156	159	352	388	327	351	108	235	169
28	178	142	124	136	162	312	393	311	416	77	258	177
29	181	120	125	137	159	1,120	377	321	356	81	339	171
30	184	130	100	163	-	1,110	369	338	364	120	267	159
31	177	-	109	128	-	859	-	355	-	81	301	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,091	195	81	132	0.183	0.21
November	4,553	169	120	152	.210	.23
December	4,618	179	99	149	.206	.24
Calendar year 1939	126,470	1,920	39	346	.479	6.50
January	4,629	295	108	149	.205	.24
February	4,344	214	94	150	.207	.22
March	11,589	1,120	164	374	.517	.60
April	23,392	1,280	369	780	1.08	1.20
May	10,629	523	274	343	.474	.55
June	10,015	416	183	334	.462	.52
July	5,431	375	77	175	.242	.28
August	3,482	339	57	112	.155	.18
September	6,300	335	151	210	.290	.32
Water year 1939-40	93,074	1,280	57	254	.351	4.79

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.

Drainage area.- 1,020 square miles.

Records available.- September 1937 to September 1940.

Extremes.- Maximum discharge during year, 1,870 second-feet Mar. 31 (gage height, 7.07 feet); minimum, 15 second-feet Aug. 3 (gage height, 5.53 feet).
1937-40: Maximum discharge, 5,330 second-feet, Feb. 20, 1939 (gage height, 8.87 feet); minimum, that of Aug. 3, 1940; minimum gage height, 3.73 feet June 23, 1938 (gates in dam open).

Remarks.- Records good except those below 100 second-feet, which are fair and those for periods of ice effect, which are poor. Regulation by power plants above station.

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

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

5.6	37	6.0	325	6.8	1,440
5.7	84	6.2	582	7.0	1,760
5.8	146	6.4	858		
5.9	222	6.6	1,140		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	86	93	89	78	183	1,740	249	198	333	68	233
2	47	108	125	100	111	152	1,500	263	205	271	66	173
3	119	103	100	108	95	b200	1,120	252	280	280	37	165
4	86	132	117	79	68	b300	940	293	250	236	31	166
5	70	68	147	79	100	b450	835	343	240	205	32	139
6	64	102	133	92	111	b600	702	400	236	187	56	117
7	74	96	119	51	100	b700	580	396	188	169	49	76
8	56	70	115	86	103	b750	799	323	142	167	49	57
9	50	72	133	95	104	b710	1,270	306	72	238	51	86
10	93	74	109	78	106	b670	1,380	258	153	167	68	146
11	63	110	137	76	99	b570	1,260	256	163	173	56	123
12	58	56	157	72	106	b470	1,090	283	174	197	43	81
13	74	93	95	106	122	b410	1,020	291	240	158	58	84
14	108	113	114	111	109	b360	984	273	282	95	51	93
15	45	100	115	154	105	b330	939	267	372	156	49	85
16	66	93	126	234	120	b320	852	259	427	148	51	63
17	64	92	89	321	115	b310	754	245	380	100	86	106
18	54	110	144	315	78	b380	698	167	299	100	62	75
19	40	78	125	297	142	b500	700	196	267	89	45	74
20	58	104	106	b250	151	b800	687	240	256	81	60	58
21	58	119	100	b200	b180	b850	610	248	250	43	38	35
22	54	108	154	b160	b240	b700	534	218	242	74	41	68
23	74	115	176	b140	b300	b500	458	222	315	81	66	38
24	78	86	76	b120	b330	398	390	258	313	66	51	86
25	75	121	37	106	b320	336	381	203	319	58	43	86
26	72	86	78	93	b300	341	315	208	398	53	39	93
27	84	54	102	70	b230	262	258	269	420	74	104	77
28	89	113	70	49	206	321	291	238	411	77	106	76
29	64	106	91	99	201	579	307	159	361	51	158	72
30	112	96	93	115	-	1,480	291	191	378	67	234	74
31	111	-	89	108	-	1,740	-	207	-	89	221	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,207	119	37	71.2	0.070	0.08
November	2,862	132	54	95.4	.094	.10
December	3,444	176	37	111	.109	.13
Calendar year 1939	197,368	4,910	-	541	.530	7.19
January	4,053	321	49	131	.128	.15
February	4,430	330	68	153	.150	.16
March	16,672	1,740	152	538	.527	.61
April	23,685	1,740	258	790	.775	.86
May	7,981	400	159	257	.252	.29
June	8,211	427	72	274	.269	.30
July	4,283	333	43	138	.135	.16
August	2,163	234	31	69.8	.068	.08
September	2,955	233	38	98.5	.097	.11
Water year 1939-40	82,946	1,740	31	227	.223	3.03

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 (general adjustment of 1912).

Drainage area.- 2,049 square miles.

Records available.- September 1921 to December 1935, April 1939 to September 1940.

Average discharge.- 15 years, 1,526 second-feet.

Extremes.- Maximum discharge during year, 15,300 second-feet, Mar. 4 (gage height, 15.87 feet); minimum, 75 second-feet Sept. 24 (gage height, 0.62 foot).
1921-35, 1939-40: Maximum discharge, 22,000 second-feet Jan. 16, 1930 (gage height, 19.4 feet); minimum, 24 second-feet Oct. 17, 1930, June 21, 22, 1933 (gage height, 0.32 foot).

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

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

0.8	106	2.5	645	10.0	6,500
1.0	148	3.0	879	12.0	9,120
1.2	197	4.0	1,420	13.0	10,500
1.4	251	5.0	2,060	14.0	12,000
1.6	312	6.0	2,740	15.0	13,700
2.0	446	8.0	4,320		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	443	174	150	195	600	1,860	830	2,810	1,260	207	486
2	88	328	231	190	194	700	1,990	879	2,880	1,010	220	450
3	85	513	218	170	194	800	2,250	904	2,460	879	162	482
4	182	245	202	160	194	13,500	2,390	954	1,990	758	177	394
5	165	172	240	160	e194	11,400	2,180	929	1,660	581	174	364
6	108	122	229	140	194	9,540	1,800	904	1,360	446	272	281
7	99	247	245	137	193	7,520	1,600	854	1,030	422	177	226
8	133	190	243	134	193	6,760	3,620	758	808	344	130	210
9	133	220	240	130	193	4,680	4,800	689	782	322	124	118
10	130	167	237	128	192	3,260	3,960	1,410	1,660	202	136	160
11	148	167	210	126	192	2,460	3,100	1,300	2,530	326	144	160
12	141	155	251	122	192	1,990	3,260	1,030	3,260	275	139	146
13	130	113	231	120	200	1,660	3,560	830	2,530	244	126	150
14	126	203	226	180	1,800	1,600	3,400	735	2,060	218	116	146
15	126	181	215	500	1,500	1,600	3,180	645	1,460	237	95	135
16	122	153	220	1,500	1,200	1,360	4,200	602	1,030	284	120	130
17	116	240	205	1,400	1,000	1,360	5,110	540	1,180	266	90	126
18	122	174	200	1,250	1,050	1,660	5,110	520	939	245	114	120
19	122	174	202	1,100	1,100	1,920	4,900	516	602	202	116	120
20	122	153	197	1,000	1,400	2,060	4,500	540	758	200	168	118
21	120	174	182	780	3,480	1,990	4,600	624	892	177	124	110
22	118	177	187	600	3,000	1,920	5,110	602	1,640	148	120	164
23	112	187	194	440	1,800	1,660	5,550	602	1,800	158	116	128
24	108	139	220	380	1,600	1,400	5,330	560	1,540	112	110	83
25	120	192	188	260	1,500	1,010	4,700	540	1,360	146	116	83
26	148	174	207	220	1,250	854	3,640	478	1,520	180	153	112
27	194	139	207	205	1,000	758	2,280	486	1,480	130	139	116
28	773	184	215	196	850	758	1,520	493	1,720	257	153	108
29	782	172	248	195	700	758	1,170	560	2,670	367	148	92
30	471	165	215	195	-	830	954	1,360	2,020	251	122	108
31	411	-	210	195	-	1,360	-	2,060	-	281	303	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,843	782	85	188	0.092	0.11
November	5,863	443	113	195	.095	.11
December	6,657	251	158	215	.105	.12
Calendar year	-	-	-	-	-	-
January	12,453	1,500	120	402	.196	.23
February	26,750	3,480	192	922	.450	.48
March	89,718	13,500	600	2,894	1.41	1.63
April	101,824	5,550	954	3,387	1.65	1.84
May	24,734	2,060	478	798	.389	.45
June	50,329	3,260	602	1,678	.819	.91
July	10,928	1,260	112	353	.172	.20
August	4,660	303	90	150	.073	.08
September	5,626	486	83	188	.092	.10
Water year 1939-40	345,185	13,500	83	943	.460	6.26

Peak discharge.- Mar. 4 (12 m.) 15,300 sec.-ft.; Apr. 17 (3 a.m.) 5,780 sec.-ft.
e Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 4.

Maumee River near Defiance, Ohio

Location.- Water-stage recorder above spillway of dam, lat. 41°17'31", long. 84°16'49", in NW¼ sec. 22, T. 4 N., R. 5 E., 75 feet upstream from Independence Dam, 150 feet downstream from point of diversion to Miami & Erie Canal, 4 miles downstream from mouth of Auglaize River, and 4½ 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 1940.

Average discharge.- 11 years (1925-35, 1939-40), 3,607 second-feet (not including flow in Miami & Erie Canal).

Extremes.- Maximum discharge during year, 42,500 second-feet Mar. 5 (gage height, 8.78 feet, ice jam); minimum, 95 second-feet Aug. 19 (gage height, 1.44 feet).
1924-35, 1939-40: 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 & Erie Canal above station not included in records; for miscellaneous measurements of this canal, see page 209.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.4	70	1.8	673	2.7	3,190	4.5	12,800	S.O	44,100
1.5	154	2.0	1,110	3.0	4,360	5.0	16,200		
1.6	304	2.2	1,620	3.5	6,650	6.0	24,600		
1.7	480	2.4	2,190	4.0	9,720	7.0	34,100		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	178	1,160	304	288	271	1,210	4,810	2,320	6,050	5,440	288	374
2	166	673	322	288	312	1,440	5,290	2,740	6,260	3,870	271	576
3	143	480	357	339	322	7,970	5,740	3,020	5,540	2,410	271	557
4	143	480	427	304	255	27,300	5,740	3,050	3,790	2,160	239	576
5	192	714	445	222	339	b40,300	6,210	1,730	2,880	1,410	271	538
6	410	480	488	206	384	37,200	5,340	1,980	2,380	995	357	462
7	222	288	519	192	255	25,500	5,050	1,860	1,760	735	374	427
8	192	255	392	206	255	16,900	10,900	2,100	1,570	839	288	339
9	206	339	456	206	357	11,500	15,200	2,510	2,040	756	239	304
10	222	339	427	166	357	7,980	13,800	2,010	2,910	480	222	357
11	192	339	339	246	255	6,150	10,600	2,350	5,190	374	154	255
12	178	271	392	239	499	3,560	9,420	1,730	6,850	538	178	206
13	192	358	392	206	1,180	3,560	10,900	1,520	9,420	462	255	206
14	166	271	322	1,880	2,380	3,870	11,800	1,390	8,260	576	239	192
15	166	239	339	2,480	3,490	5,240	11,200	1,310	6,310	634	154	178
16	178	446	467	2,300	3,720	4,680	12,400	1,310	4,280	615	132	178
17	166	288	357	3,360	2,940	4,450	19,400	1,180	2,910	427	122	166
18	166	322	374	2,670	2,610	5,340	23,700	1,090	2,290	538	143	166
19	166	304	462	2,070	3,680	5,890	28,200	903	1,950	499	122	166
20	166	339	427	1,540	4,540	6,050	29,200	1,090	1,650	339	132	154
21	178	288	374	1,280	7,240	5,690	26,400	1,260	1,730	410	143	143
22	166	357	271	1,160	8,840	5,050	24,600	1,390	1,520	339	206	132
23	154	304	271	926	6,850	3,490	19,100	1,210	1,950	445	271	132
24	166	447	271	870	4,810	2,220	13,100	1,340	3,160	427	166	206
25	288	374	255	798	2,440	2,040	10,600	1,310	3,410	206	206	166
26	322	271	339	410	2,290	1,760	7,700	1,110	3,560	178	178	143
27	1,010	288	271	288	1,950	2,350	5,690	1,210	2,480	612	357	113
28	2,190	271	206	322	1,590	2,100	3,160	1,280	2,910	357	357	132
29	2,190	271	255	288	1,440	2,320	2,610	1,570	5,240	528	392	143
30	1,920	304	322	339	-	3,760	2,640	1,740	6,850	694	462	143
31	1,460	-	304	322	-	4,360	-	5,100	-	445	374	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13,854	2,190	143	447		
November	11,560	1,160	239	385		
December	11,147	519	206	360		
Calendar year	-	-	-	-		
January	26,411	3,360	166	852		
February	65,851	8,840	255	2,271		
March	261,230	40,300	1,210	8,427		
April	360,500	29,200	2,610	12,020		
May	55,713	5,100	903	1,797		
June	117,100	9,420	1,520	3,903		
July	28,738	5,440	178	927		
August	7,563	462	122	244		
September	7,830	576	113	261		
Water year 1939-40	967,497	40,300	113	2,643		

Peak discharge.- Apr. 9 (10 p.m.) 17,800 sec.-ft.
b Stage-discharge relation affected by ice.

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 (general adjustment of 1912). Prior to Mar. 12, 1940, chain gage at same site and datum.

Drainage area.- 6,314 square miles.

Records available.- November 1898 to December 1901, August 1921 to December 1935, March 1939 to September 1940.

Average discharge.- 15 years (1921-35, 1939-40), 4,233 second-feet (not including flow in Miami & Erie Canal).

Extremes.- 1939: Maximum discharge during period, 59,500 second-feet Mar. 14 (gage height, 12.0 feet); minimum, 67 second-feet Sept. 24-29.
1939-40: Maximum discharge during water year, 65,200 second-feet Mar. 5 (gage height, 12.6 feet); minimum, 67 second-feet Oct. 11-25.
1921-35, 1939-40: Maximum discharge recorded, 75,000 second-feet (revised, figure published in Water-Supply Paper 804 in error) Jan. 16, 1930 (gage height, 13.60 feet); minimum, 39 second-feet Aug. 2, 1934 (gage height, 1.32 feet).

Remarks.- Records fair above and poor below 1,000 second-feet Mar. 14, 1939 to Mar. 12, 1940, good Mar. 13 to Sept. 30, 1940. Low flow slightly affected by power plants above station. Chain gage read twice daily, oftener during floods, Mar. 14, 1939 to Mar. 12, 1940.

Rating table, Mar. 14, 1939, to Sept. 30, 1940, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 7 to June 22, Aug. 7 to Dec. 10, 1939, and Aug. 10 to Sept. 30, 1940)

1.5	70	2.6	1,460	7.0	20,200
1.6	115	3.0	2,320	8.0	26,900
1.7	180	3.5	3,670	9.0	34,300
1.8	264	4.0	5,350	10.0	42,200
2.0	500	5.0	9,350	11.0	50,700
2.3	950	6.0	14,300	12.0	59,500

Discharge, in second-feet, 1939-40

1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	3,130	4,080	361	3,730	2,670	141
2						-	4,300	3,130	462	3,210	2,080	128
3						-	3,130	2,400	3,100	1,820	1,650	128
4						-	2,600	1,950	2,960	1,570	1,110	141
5						-	2,940	1,760	1,610	2,740	950	264
6						-	2,800	1,670	1,300	4,640	830	423
7						-	2,150	1,140	1,060	2,650	650	436
8						-	2,010	998	1,300	1,590	1,050	276
9						-	1,840	955	1,200	982	1,350	197
10						-	1,930	905	2,680	650	1,080	122
11						-	12,200	815	5,540	500	740	110
12						-	14,900	905	5,540	410	590	106
13						-	12,400	1,150	4,990	423	462	106
14						55,900	11,500	990	4,640	350	230	106
16						57,700	11,900	755	3,050	197	286	106
16						45,100	11,200	740	1,880	148	307	106
17						30,100	13,500	665	1,460	318	214	106
18						22,800	24,100	545	1,200	462	148	102
19						17,200	29,500	665	1,230	966	154	102
20						12,400	28,300	665	1,060	665	545	102
21						7,450	25,500	665	650	474	361	102
22						5,170	23,400	695	4,290	398	286	102
23						3,890	22,100	635	8,480	487	286	102
24						3,210	18,400	575	8,060	500	436	70
25						2,730	14,300	710	6,860	462	318	67
26						2,670	11,200	650	4,990	530	247	67
27						2,420	9,350	680	3,550	590	307	67
28						3,350	8,060	590	2,830	449	286	67
29						2,800	6,860	423	2,910	966	264	67
30						2,960	5,350	350	2,910	2,860	197	128
31						2,940	-	296	-	3,240	154	-

Peak discharge.- Mar. 14 (11 p.m.) 59,500 sec.-ft.; Apr. 11 (12 p.m.) 16,000 sec.-ft.

Discharge, in second-feet, of Maumee River at Waterville, Ohio, 1939-40--Continued

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	1,440	214	320	330	1,100	5,540	2,620	6,860	6,290	329	318
2	110	1,130	214	310	350	1,320	5,350	2,780	7,060	4,470	256	340
3	92	800	436	350	360	4,820	6,860	3,130	6,670	3,020	264	487
4	79	500	350	320	290	27,700	7,650	3,610	4,990	2,300	296	500
5	74	307	340	250	340	47,600	7,060	2,600	3,180	1,520	275	487
6	74	423	372	210	400	48,000	6,290	1,860	2,620	1,250	350	436
7	74	307	500	200	350	33,600	5,350	1,860	2,270	875	286	462
8	74	256	340	210	260	23,400	13,300	2,870	1,590	740	329	398
9	74	134	256	210	370	16,000	17,800	3,550	1,800	725	247	318
10	74	160	256	190	360	11,000	16,600	2,670	3,070	680	197	350
11	67	256	247	260	300	7,860	12,700	2,320	5,540	436	188	286
12	67	174	230	250	600	4,820	11,500	2,320	7,860	296	167	222
13	67	148	340	230	1,500	4,010	12,200	1,500	10,700	474	167	205
14	67	148	340	1,000	2,750	5,910	13,200	1,500	9,350	545	180	214
15	67	180	264	2,500	4,000	6,100	13,200	1,330	7,250	500	205	214
16	67	188	385	2,400	4,500	5,910	12,200	1,260	5,170	605	167	167
17	67	222	487	4,000	3,500	5,350	19,000	1,250	3,500	456	148	174
18	67	286	296	3,000	3,250	6,670	24,800	1,060	2,300	372	148	174
19	67	205	318	2,500	4,500	7,650	29,000	1,320	2,940	530	174	180
20	67	160	474	2,000	6,500	7,450	30,600	850	2,010	423	102	188
21	67	122	500	1,500	9,000	6,860	29,000	1,080	1,860	318	88	197
22	67	222	318	1,300	11,700	6,100	26,200	1,260	1,500	318	115	154
23	67	318	167	1,100	10,000	4,820	22,100	1,230	1,760	372	167	122
24	67	296	329	900	7,060	2,700	15,500	1,210	3,220	605	188	167
25	74	275	385	840	4,470	2,200	11,700	1,320	4,640	372	188	230
26	167	275	239	750	2,860	1,970	8,700	1,250	4,470	214	318	205
27	436	275	449	400	2,620	1,820	6,480	1,060	2,730	237	398	180
28	2,400	275	300	350	2,150	2,880	4,300	1,090	2,570	560	423	134
29	2,880	247	350	310	1,700	3,610	2,250	1,300	4,940	410	423	122
30	2,250	222	400	350	-	4,990	2,780	1,780	7,060	530	398	141
31	1,800	-	350	340	-	6,100	-	3,560	-	530	372	-

Peak discharge.- Mar. 5 (8:30 p.m.) 65,200 sec.-ft.; Apr. 10 (4 a.m.) 18,400 sec.-ft.
Note.- Stage-discharge relation affected by ice, Dec. 28 to Feb. 21, Feb. 29 and Mar. 1.

Monthly discharge, in second-feet, 1939-40

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
March 14-31, 1939	280,690	57,700	2,420	15,590	2.47	1.65
April	341,150	29,800	1,840	11,370	1.80	2.01
May	33,012	4,080	296	1,065	.169	.19
June	92,153	8,480	361	3,072	.487	.54
July	38,979	4,640	148	1,257	.199	.23
August	20,238	2,670	148	653	.103	.12
September	4,146	436	67	138	.022	.02
Water year	-	-	-	-	-	-
October 1939	11,811	2,880	67	381	.060	.07
November	9,961	1,440	122	332	.053	.06
December	10,446	500	167	337	.053	.06
Calendar year	-	-	-	-	-	-
January 1940	28,850	4,000	190	931	.147	.17
February	86,370	11,700	260	2,978	.472	.51
March	320,320	48,000	1,100	10,330	1.64	1.89
April	399,210	30,600	2,250	13,310	2.11	2.35
May	58,410	3,610	860	1,884	.298	.34
June	131,480	10,700	1,600	4,383	.694	.77
July	30,953	6,290	214	998	.158	.18
August	7,553	423	88	244	.039	.04
September	7,772	500	122	259	.041	.05
Water year 1939-40	1,103,126	48,000	67	3,014	.477	6.49

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 1940, 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, 4,960 second-feet Apr. 22, from rating curve extended above 4,000 second-feet; maximum gage height, 14.26 feet Mar. 4 (affected by ice); minimum discharge, 11 second-feet Oct. 18, 20; minimum gage height, 0.54 foot Sept. 15.
1930-40: 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 below 40 second-feet, which are fair, and those for periods of ice effect, backwater from debris, or no gage-height record, which are poor.

Rating tables, water year 1939-40, except periods of ice effect, or backwater from debris
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 9-26, Nov. 4-27, Dec. 1-12, Aug. 18 to Sept. 30)

Oct. 1 to Mar. 4						Mar. 5 to Sept. 30					
0.5	9.8	2.0	166	6.0	1,080	0.6	18	2.0	180	6.0	1,180
.7	19	3.0	328	8.0	1,960	.8	29	3.0	374	8.0	2,080
1.0	42	4.0	540	10.0	3,150	1.0	46	4.0	606	10.0	3,300
1.5	99	5.0	790	12.0	4,550	1.5	106	5.0	874	13.0	5,520

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	111	33	43	50	200	341	a310	710	462	40	27
2	26	81	38	44	50	1,000	330	a360	658	451	35	27
3	29	57	46	44	50	3,600	429	a370	594	320	31	27
4	21	41	53	44	55	4,600	510	a330	570	191	28	27
5	17	31	57	45	55	4,200	396	a290	522	126	27	25
6	14	27	59	47	55	3,600	396	a250	396	92	31	24
7	14	23	62	47	60	3,000	576	a230	260	73	28	24
8	16	21	63	48	60	2,470	1,730	200	212	58	31	25
9	15	19	60	48	70	1,260	1,450	193	936	49	34	20
10	14	18	57	45	90	736	990	178	1,380	68	34	21
11	15	18	54	45	130	498	874	167	1,370	58	29	20
12	18	18	52	46	600	363	1,180	156	930	47	27	20
13	18	17	53	47	750	310	1,370	148	736	48	25	22
14	17	16	53	400	630	451	1,220	144	534	130	25	24
15	14	16	53	800	480	363	1,260	145	352	119	26	20
16	13	16	50	600	450	310	2,640	146	260	97	31	18
17	12	14	43	500	450	320	1,980	146	182	74	34	20
18	11	14	39	400	470	330	2,550	134	146	57	43	20
19	12	14	38	340	600	385	2,910	138	164	52	45	18
20	11	15	37	260	1,300	396	3,300	146	330	49	43	18
21	12	16	36	170	1,200	374	4,000	146	451	46	39	18
22	14	16	40	140	900	330	4,300	142	474	42	36	18
23	18	16	38	100	800	290	4,800	133	396	38	38	18
24	18	17	40	70	700	250	4,280	126	270	38	43	20
25	21	16	42	60	550	212	3,300	123	486	41	36	23
26	34	15	37	55	400	182	1,680	120	429	45	32	25
27	533	14	38	55	250	150	902	112	462	43	35	24
28	424	c14	42	55	160	183	606	105	814	40	34	24
29	224	c15	40	50	120	209	a420	119	1,050	35	31	23
30	166	c16	42	50	-	290	a330	312	546	33	35	22
31	136	-	45	50	-	341	-	558	-	39	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,920	533	11	61.9	0.082	0.09
November	742	111	14	24.7	.033	.04
December	1,440	63	33	46.5	.062	.07
Calendar year 1939	171,726	8,110	11	470	.624	8.46
January	4,737	800	43	153	.203	.23
February	11,626	1,300	50	397	.527	.57
March	30,903	4,600	150	997	1.32	1.53
April	51,450	4,800	330	1,715	2.28	2.54
May	6,165	558	105	199	.264	.30
June	16,599	1,380	146	553	.734	.82
July	3,063	462	33	98.8	.131	.15
August	1,038	45	25	33.5	.044	.05
September	662	27	18	22.1	.029	.03
Water year 1939-40	130,244	4,800	11	356	.473	6.42

Peak discharge.- Apr. 22 (12 p.m.) 4,960 sec.-ft.
a No gage-height record; discharge computed on basis of records for Wabash River at Bluffton and Weather Bureau gage readings at Stellhorn Bridge, 2 miles downstream.
c Stage-discharge relation affected by backwater from debris, discharge computed on basis of records for Wabash River at Bluffton.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 7.

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 (general adjustment of 1912). Oct. 17 to Nov. 30, 1939, wire-weight gage at same site and datum.

Drainage area.- 433 square miles.

Records available.- July 1928 to December 1935, October 1939 to September 1940.

Extremes.- Maximum discharge during year, 4,930 second-feet Apr. 19 (gage height, 9.77 feet); minimum daily, 1.5 second-feet (estimated) Jan. 7.

1928-35, 1939-40: Maximum discharge, 9,150 second-feet (revised) Jan. 15, 1930 (gage height, 12.96 feet); minimum observed, 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 (discharge not determined).

Remarks.- Records good except those for periods of shifting control, which are fair, and of no gage-height record or ice effect, which are poor. Wire-weight gage read twice daily.

Revisions.- Revised figures of discharge for high-water periods in the water years 1929 and 1930 are given herein. They supersede those published in Water-Supply Paper 714.

Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)
1928-29		1929-30	
Jan. 19.....	4,490	Dec. 19.....	5,050
20.....	4,820	Jan. 2.....	4,930
Feb. 26.....	3,850	3.....	5,650
27.....	6,780	8.....	5,530
May 3.....	3,950	9.....	7,360
July 6.....	4,380	10.....	3,950
7.....	3,950	13.....	3,450
		14.....	5,770
1929-30		15.....	8,580
Dec. 18.....	3,850	16.....	5,050

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a6.5	119	10	4.0	10	99	528	246	140	232	6.4	21
2	a5.5	95	13	3.8	10	120	341	428	128	440	4.8	13
3	a5.0	84	18	3.6	10	700	387	698	88	256	3.3	8.6
4	a4.5	41	27	3.0	10	2,000	820	524	55	142	5.0	6.8
5	a4.5	31	51	2.5	11	3,500	608	304	36	86	50	6.0
6	a4.5	26	46	2.0	12	1,500	324	212	26	58	91	5.2
7	a4.5	22	39	1.6	*12	950	241	154	23	44	57	4.8
8	a4.5	20	30	1.5	12	770	1,720	424	20	35	22	9.2
9	a4.0	20	25	1.5	12	540	1,770	498	71	29	12	12
10	a4.0	20	21	1.8	13	400	820	244	345	25	8.6	8.6
11	a4.0	20	19	2.0	14	280	492	144	565	24	6.8	7.8
12	a4.5	20	19	2.5	20	200	1,310	97	675	17	5.6	7.6
13	a4.5	23	18	3.5	25	170	1,640	71	366	17	4.4	7.2
14	a3.5	21	18	8.0	65	950	1,210	61	174	16	3.1	7.2
15	a3.3	20	16	200	328	652	1,680	59	97	13	2.4	6.8
16	a3.3	20	15	350	291	376	1,200	65	58	10	1.7	6.0
17	3.3	19	13	125	262	402	2,280	62	36	7.2	1.6	4.4
18	3.3	19	13	75	307	675	3,460	50	31	6.4	2.4	4.0
19	3.3	18	13	260	307	960	4,010	57	56	6.4	3.1	4.0
20	3.4	16	12	100	997	770	2,360	144	124	6.4	3.1	4.4
21	3.8	16	11	60	1,890	585	3,150	156	59	6.0	3.3	5.6
22	4.0	15	9.6	45	1,240	402	1,450	119	30	5.2	4.4	6.0
23	4.2	14	10	*33	820	253	745	130	30	5.6	3.5	6.0
24	4.2	13	9.6	22	562	120	484	159	1,410	5.2	3.1	6.4
25	5.5	13	7.6	18	409	60	317	147	1,690	7.2	4.0	27
26	8.5	13	8.5	15	281	35	232	156	778	7.6	7.6	82
27	64	12	6.2	14	182	40	171	156	394	6.4	36	38
28	722	12	6.6	13	133	75	133	117	304	5.7	53	20
29	331	11	6.2	12	109	630	109	94	532	41	39	13
30	156	11	5.1	11	-	870	105	111	352	21	34	9.9
31	95	-	4.8	10	-	720	-	107	-	10	24	-

Peak discharge.- Mar. 5 (12:30 a.m.) 4,160 sec.-ft.; Apr. 8 (10 p.m.) 2,440 sec.-ft.; Apr. 17 (8 a.m.) 2,600 sec.-ft.; Apr. 19 (6 a.m.) 4,930 sec.-ft.; Apr. 21 (7 a.m.) 3,650 sec.-ft.; June 24 (9 p.m.) 2,120 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for Maumee River at Waterville and Sandusky River near Fremont.

Note.- Stage-discharge relation affected by ice Jan. 4 to Feb. 14, Mar. 3-14, 24-28. Shifting-control method used Oct. 11-27 and Apr. 25 to June 24.

Discharge, in second-feet, of Portage River at Woodville, Ohio, 1928-30, 1939-40

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October 1928	258.9	16	3.6	8.35	0.019	0.02
November	434.8	30	6.6	14.5	.033	.04
December	3,702	1,060	10	119	.275	.32
Calendar year	-	-	-	-	-	-
January 1929	19,926	4,820	20	643	1.48	1.71
February	13,595	6,780	-	486	1.12	1.17
March	26,301	3,170	131	848	1.96	2.26
April	28,916	3,800	131	964	2.23	2.49
May	22,061	3,950	80	712	1.64	1.89
June	1,364	114	17	45.5	.105	.12
July	14,318	4,380	14	462	1.07	1.23
August	287.2	28	3.1	9.26	.021	.02
September	250.6	19	4.2	8.35	.019	.02
Water year 1928-29	131,414.5	6,780	3.1	360	.831	11.29
October 1929	6,179.3	1,870	4.8	199	.460	.53
November	21,835	3,170	65	728	1.68	1.87
December	21,435	5,050	-	691	1.60	1.84
Calendar year 1929	176,468.1	6,780	3.1	483	1.12	15.15
January 1930	65,815	8,580	-	2,123	4.90	5.65
February	16,500	2,220	-	589	1.36	1.42
March	16,554	2,580	87	534	1.23	1.42
April	14,629	3,270	85	488	1.13	1.26
May	1,999	138	14	64.5	.149	.17
June	712.2	118	6.6	23.7	.055	.06
July	87.2	5.8	.6	2.81	.006	.01
August	120.6	9.1	.5	3.89	.009	.01
September	289.5	44	1.8	9.65	.022	.02
Water year 1929-30	166,155.8	8,580	.5	455	1.05	14.26
October 1939	1,482.1	722	3.3	47.8	.110	.13
November	783	119	11	26.1	.060	.07
December	521.2	51	4.8	16.8	.039	.04
Calendar year	-	-	-	-	-	-
January 1940	1,404.3	350	1.5	45.3	.105	.12
February	8,344	1,890	10	288	.665	.72
March	19,824	3,500	35	639	1.48	1.71
April	33,997	4,010	105	1,133	2.62	2.92
May	5,992	698	50	193	.446	.51
June	8,693	1,690	20	290	.670	.75
July	1,641.3	440	5.2	52.9	.122	.14
August	506.2	91	1.6	16.3	.038	.04
September	368.3	82	4.0	12.3	.028	.03
Water year 1939-40	83,556.4	4,010	1.5	228	.527	7.18

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. Prior to May 10 chain gage at same site and datum.

Drainage area.- 89.8 square miles.

Records available.- August 1925 to November 1935, July 1938 to September 1940.

Average discharge.- 12 years, 78.6 second-feet.

Extremes.- Maximum discharge during year, 3,280 second-feet Mar. 3 (gage height, 7.90 feet, from graph based on gage readings); minimum observed, 0.8 second-foot Oct. 16.
1925-35, 1938-40: Maximum discharge observed, 6,900 second-feet Dec. 14, 1927 (gage height, 9.15 feet); minimum observed, 0.6 second-foot Aug. 13-14, 1933, Oct. 24, 1934.
Flood of Mar. 23, 1913, reached a stage of 14.5 feet, from floodmarks (discharge not determined).

Remarks.- Records good except those for periods of ice effect and those below 10 second-feet, which are fair. Gage read twice daily prior to May 10.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	3.4	1.6	1.7	2.5	42	83	25	88	288	3.5	30
2	10	2.2	2.8	2.0	3	188	52	27	97	176	3.3	14
3	4.6	1.6	3.4	2.5	3	2,400	108	26	51	79	3.0	9.4
4	3.0	1.5	2.0	2.0	2.5	945	535	23	32	50	2.8	7.0
5	2.2	1.1	2.5	1.5	3.5	320	140	21	23	35	2.8	5.8
6	1.2	2.0	1.8	1.7	8.7	140	73	20	19	26	6.5	4.6
7	1.2	2.0	5.4	1.1	6.7	100	58	17	23	20	3.7	4.2
8	1.1	1.5	4.4	1.2	6.4	78	244	16	50	17	3.0	17
9	1.6	1.2	2.3	1.5	8.4	56	180	14	325	15	2.8	7.2
10	2.3	2.3	1.6	1.4	31	34	100	14	286	13	3.5	6.5
11	2.0	2.6	1.9	2.0	275	29	94	13	170	25	3.3	5.8
12	1.8	2.5	1.6	4.8	450	20	422	12	170	37	3.9	4.6
13	1.6	1.9	2.6	4.4	605	35	275	12	79	30	4.6	4.2
14	1.8	1.4	2.3	52	147	38	206	12	45	17	3.5	3.7
15	1.4	1.0	2.3	73	58	36	234	13	32	15	2.5	3.1
16	1.2	1.9	2.0	29	51	35	264	12	24	18	2.0	3.0
17	1.4	2.8	2.2	15	44	54	244	12	19	14	2.6	3.1
18	1.2	1.9	4.0	10	73	206	395	11	60	10	3.4	3.5
19	1.5	1.4	2.6	6	395	320	206	11	470	9.1	2.6	3.3
20	1.4	1.4	2.3	3	297	132	1,160	10	185	7.8	1.9	3.5
21	1.4	2.6	2.2	5	118	94	930	10	61	6.8	1.9	3.9
22	1.2	3.4	3.8	4	68	73	244	8.5	36	6.5	2.2	3.5
23	1.5	2.0	2.2	3.5	50	46	132	9.4	36	7.1	2.6	4.0
24	1.6	1.9	1.5	3.5	37	35	78	18	197	9.6	2.4	6.1
25	3.8	2.3	1.5	4	30	25	59	74	155	9.1	2.6	6.2
26	4.2	1.8	1.9	3.5	25	20	47	62	66	7.8	3.3	5.1
27	19	1.5	2.2	4	22	24	38	35	43	6.5	4.8	2.8
28	97	3.0	2.0	4	21	48	32	26	698	7.0	7.0	4.2
29	27	1.9	1.8	3	23	94	31	21	1,420	6.0	4.0	3.1
30	11	1.8	1.8	3	-	115	27	24	254	5.2	93	3.3
31	5.4	-	1.8	2.5	-	132	-	48	-	4.2	50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	217.7	97	1.1	7.02	0.078	0.09
November	89.8	3.4	1.0	1.99	.022	.02
December	74.3	5.4	1.5	2.40	.027	.03
Calendar year 1939	23,910.0	2,870	1.0	65.5	.729	9.88
January	255.8	73	1.1	8.25	.092	.11
February	2,864.7	605	2.5	98.8	1.10	1.19
March	5,917	2,400	20	191	2.13	2.46
April	6,691	1,160	27	223	2.48	2.77
May	656.9	74	8.5	21.2	.236	.27
June	5,214	1,420	19	174	1.94	2.16
July	977.7	288	4.2	31.5	.351	.40
August	239.0	93	1.9	7.71	.086	.10
September	183.7	30	2.8	6.12	.068	.08
Water year 1939-40	23,351.6	2,400	1.0	63.8	.710	9.68

Note.- Stage-discharge relation affected by ice Jan. 1-11, Jan. 18 to Feb. 5, Feb. 23-26, Mar. 24, 25.

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 1940.

Average discharge.- 16 years, 249 second-feet.

Extremes.- Maximum discharge during year, 5,630 second-feet Mar. 4 (gage height, 9.28 feet); minimum, 1.4 second-feet Aug. 22 (gage height, 0.91 foot).
1921-35, 1938-40: 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 (discharge not determined).

Remarks.- Records good except those below 20 second-feet, which are fair, and those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	22	7.4	5	8	108	255	96	111	734	13	179
2	11	15	9.5	4.5	7	500	169	90	152	744	13	96
3	14	11	12	4.5	7	3,500	216	89	132	365	12	62
4	9.5	9.0	12	4	7	4,870	1,040	86	89	208	9.5	40
5	8.5	7.9	12	4	8	1,580	733	78	65	138	9.5	29
6	9.5	6.9	12	3.5	10	687	321	70	52	101	8.5	23
7	5.3	6.4	9.0	3.5	20	448	205	66	44	79	7.9	19
8	4.8	4.8	9.0	3.5	17	333	427	60	130	66	6.9	17
9	4.8	4.0	7.9	3.5	*19	255	841	55	193	55	9.0	16
10	4.0	4.0	8.5	3.5	50	180	425	50	787	49	7.4	25
11	8.5	6.4	9.5	4	200	132	289	49	895	54	6.9	16
12	6.9	6.4	8.5	5	800	105	756	47	614	90	5.3	13
13	4.0	7.4	9.0	8	2,000	120	976	42	367	84	4.0	11
14	5.3	8.5	7.4	50	1,000	166	734	437	189	78	2.6	9.5
15	4.8	9.0	7.4	150	500	150	734	169	120	57	2.6	9.0
16	4.3	6.9	6.4	200	250	128	734	84	105	50	3.2	8.5
17	6.9	7.4	7.4	100	200	150	1,060	71	79	55	3.2	7.4
18	8.5	5.9	8.6	70	250	474	1,490	62	114	46	6.0	7.4
19	11	7.4	6.9	50	1,230	708	1,140	54	558	40	4.0	6.4
20	11	8.5	7.4	35	1,760	539	1,780	46	579	30	2.1	6.4
21	12	7.9	6.9	25	1,150	342	3,350	41	231	25	2.1	5.9
22	11	10	6.5	20	559	245	1,560	35	120	23	2.1	5.3
23	11	8.5	6.5	17	300	165	656	30	90	18	3.7	4.8
24	11	8.5	6	14	200	110	411	35	275	16	2.6	3.7
25	13	7.4	6	12	150	90	278	58	452	16	3.7	7.9
26	16	7.9	5.9	11	120	80	205	111	241	17	4.8	5.9
27	30	8.5	6.5	10	100	80	158	105	140	17	4.3	15
28	49	6.4	6	10	90	90	126	73	1,010	14	39	11
29	74	6.4	5.5	9	96	160	108	58	2,540	15	34	8.5
30	65	6.4	5.5	9	-	281	99	52	1,250	14	734	6.9
31	36	-	5	8	-	281	-	55	-	16	413	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	483.6	74	4.0	15.6	0.052	0.06
November	242.7	22	4.0	8.09	.027	.03
December	244.0	12	5	7.87	.026	.03
Calendar year 1939	69,553.0	7,370	1.0	191	.639	8.65
January	866.5	200	3.5	28.0	.094	.11
February	11,108	2,000	7	383	1.28	1.38
March	17,055	4,870	80	550	1.84	2.12
April	21,276	3,350	99	709	2.37	2.64
May	2,455	437	30	79.2	.265	.31
June	11,724	2,540	44	391	1.31	1.46
July	3,312	744	14	107	.358	.41
August	1,379.9	734	2.1	44.5	.149	.17
September	675.5	179	3.7	22.5	.075	.08
Water year 1939-40	70,822.2	4,870	2.1	194	.649	8.80

Peak discharge.- Mar. 4 (8 a.m.) 5,630 sec.-ft.; Apr. 4 (6 p.m.) 1,400 sec.-ft.; Apr. 18 (6 p.m.) 1,680 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice, Dec. 22 to Feb. 18, Feb. 23-28, Mar. 2, 3, 24-27.

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 4¼ miles north of Mexico.

Drainage area.- 776 square miles.

Records available.- March 1923 to December 1935; July 1938 to September 1940.

Average discharge.- 14 years, 567 second-feet.

Extremes.- Maximum discharge during year, 11,100 second-feet Mar. 5 (gage height, 17.1 feet); minimum, 5.8 second-feet Aug. 23-25 (gage height, 1.53 feet).
1923-35, 1938-40: Maximum discharge observed, 15,200 second-feet Mar. 22, 1927 (gage height, 19.9 feet); minimum observed, 4 second-feet Aug. 25, 1928.
Flood in June 1937 reached a stage of 22.5 feet, according to information furnished by local residents (discharge not determined).

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

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	68	22	16	21	260	537	258	137	2,400	41	1,160
2	19	51	24	15	20	674	422	238	281	1,830	33	835
3	17	42	27	14	19	5,000	390	234	378	1,340	28	315
4	17	33	36	13	18	9,080	2,040	222	260	684	27	174
5	15	31	34	13	18	10,200	2,100	193	170	407	27	120
6	14	27	33	12	25	5,410	1,060	168	127	278	25	88
7	15	23	33	12	40	1,770	572	146	102	204	23	72
8	15	22	30	11	40	1,020	1,040	132	96	156	20	60
9	17	22	28	11	*45	737	1,780	120	222	129	19	53
10	16	22	25	10	60	537	1,440	110	537	112	19	48
11	12	22	23	10	154	392	815	101	1,960	97	17	42
12	11	21	22	10	668	285	1,270	94	2,160	146	19	40
13	11	22	24	10	3,300	276	2,160	89	1,580	218	19	37
14	14	22	26	50	3,440	438	1,980	124	779	152	17	30
15	16	21	28	150	a2,500	470	1,880	422	407	129	17	30
16	16	22	25	258	a1,500	353	2,480	204	265	102	17	29
17	14	22	22	300	a700	378	3,300	134	222	105	17	24
18	11	22	22	230	a600	835	5,410	115	185	94	16	24
19	11	24	22	180	2,220	1,340	4,840	104	520	97	11	18
20	10	22	22	140	3,880	1,340	4,760	96	935	82	10	17
21	9.3	22	22	110	3,510	935	5,860	83	694	67	10	16
22	8.8	22	21	*90	2,820	680	6,130	74	326	53	6.7	15
23	8.8	24	20	70	1,730	470	4,040	67	213	49	5.8	15
24	11	26	19	60	998	268	1,540	71	215	45	5.8	17
25	16	26	18	50	680	a220	895	86	550	44	5.8	19
26	19	25	18	40	470	a200	625	105	718	37	8.2	20
27	27	24	19	35	350	198	454	166	392	37	8.2	21
28	45	22	20	30	300	231	364	156	434	36	8.8	22
29	83	22	19	26	270	308	300	125	2,740	39	21	20
30	94	22	18	24	-	520	262	110	3,370	60	452	20
31	96	-	17	22	-	607	-	113	-	55	1,290	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	705.9	96	8.8	22.8	0.029	0.03
November	796	68	21	26.5	.034	.04
December	739	36	17	23.8	.031	.04
Calendar year 1939	167,701.8	12,500	5.8	459	.591	8.02
January	2,022	300	10	65.2	.084	.10
February	30,396	3,880	18	1,048	1.35	1.46
March	45,434	10,200	198	1,466	1.89	2.18
April	60,746	6,130	262	2,025	2.61	2.91
May	4,460	422	67	144	.186	.21
June	20,975	3,370	96	699	.901	1.01
July	9,284	2,400	36	299	.385	.44
August	2,244.3	1,290	5.8	72.4	.093	.11
September	3,401	1,160	15	113	.146	.16
Water year 1939-40	181,203.2	10,200	5.8	495	.638	8.69

Peak discharge.- Feb. 13 (11 p.m.) 3,720 sec.-ft.; Mar. 5 (6 a.m.) 11,100 sec.-ft.; Apr. 16 (10 p.m.) 3,370 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for other stations on Sandusky River.

Note.- Stage-discharge relation affected by ice Dec. 22-25, Dec. 30 to Jan. 15, Jan. 17 to Feb. 10, Feb. 27-29, Mar. 3.

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, 2¾ miles downstream from Wolf Creek and 3¾ miles southwest of Fremont.

Drainage area.- 1,248 square miles.

Records available.- November 1923 to December 1935, July 1938 to September 1940. November 1898 to March 1901, at site 4 miles downstream.

Average discharge.- 14 years (1923-35, 1938-40), 876 second-feet.

Extremes.- Maximum daily discharge during year, 15,100 second-feet Mar. 4; maximum gage height, 11.4 feet (ice jam) Mar. 3; minimum daily discharge, 13 second-feet Oct. 10. 1923-35, 1938-40: Maximum discharge (not determined) occurred Jan. 15, 1930 (gage height, 11.1 feet); maximum gage height, that of Mar. 3, 1940; minimum discharge, 7 second-feet (estimated) Dec. 24, 1934 (gage height, 0.85 foot) caused by ice jam above gage; minimum daily, 11 second-feet July 31, Oct. 25, 1934, Oct. 8, 1935, Sept. 25-27, 1939.

Remarks.- Records good except those for period of no gage-height record, and those below 300 second-feet after May 1, which are fair, and those for period of ice effect, which are poor.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 7 to Sept. 30)

0.9	14.7	1.8	470	4.0	5,000
1.0	39	2.0	665	4.5	6,650
1.1	66	2.2	920	5.0	8,300
1.2	98	2.5	1,400	5.5	9,750
1.4	155	3.0	2,380	6.0	11,300
1.6	306	3.5	3,560	7.0	14,600

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	118	42	29	35	500	893	542	336	3,170	66	1,400
2	36	92	49	28	33	1,000	701	498	a450	2,560	57	1,150
3	34	76	49	26	31	7,000	564	498	a650	1,890	42	576
4	36	66	46	25	30	15,100	2,300	479	a500	1,070	39	275
5	32	63	49	24	30	*14,000	3,140	382	a350	614	39	176
6	29	49	54	23	35	*8,500	1,970	321	a250	417	44	122
7	34	44	54	22	50	3,000	1,040	273	a220	293	44	93
8	29	52	54	21	*70	2,150	1,850	266	a200	224	36	88
9	22	44	52	20	70	1,400	2,850	240	a250	180	32	76
10	13	42	42	19	90	906	2,380	207	459	157	26	66
11	32	44	39	19	200	655	1,420	185	2,570	134	26	57
12	36	36	*46	18	800	536	2,070	166	4,130	130	24	54
13	29	36	46	18	4,000	452	3,140	157	3,220	185	19	54
14	22	36	39	70	5,000	584	3,050	152	1,790	224	24	52
15	19	52	44	200	4,000	785	3,320	308	980	176	24	42
16	15	42	36	400	3,000	564	4,680	461	545	152	24	39
17	15	39	44	500	2,000	536	8,590	253	374	134	22	44
18	24	42	32	450	1,300	1,340	13,400	212	314	134	22	46
19	26	39	36	350	3,000	1,990	9,290	196	515	130	91	36
20	22	36	42	280	5,000	2,050	8,810	190	1,200	138	60	39
21	26	39	39	220	6,000	1,560	10,400	180	1,090	126	39	39
22	24	44	34	180	5,000	1,120	8,300	176	584	114	29	34
23	19	42	33	150	4,000	785	6,250	171	352	102	19	29
24	15	36	32	120	3,000	555	2,760	176	501	98	15	36
25	19	36	32	100	2,000	352	1,440	218	761	88	15	52
26	26	46	35	80	1,300	299	995	240	1,090	76	19	63
27	60	36	40	70	900	293	737	306	785	66	39	54
28	92	36	40	60	700	391	584	400	526	63	39	44
29	85	44	35	50	600	655	470	359	2,350	54	130	39
30	88	42	32	45	-	950	408	329	3,850	66	615	36
31	114	-	30	40	-	1,060	-	314	-	72	1,530	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,117	114	13	36.0	0.029	0.03
November	1,449	118	36	48.3	.039	.04
December	1,277	54	30	41.2	.033	.04
Calendar year 1939	281,336	14,100	11	771	.618	8.37
January	3,657	500	18	118	.095	.11
February	52,274	6,000	30	1,803	1.44	1.55
March	71,068	15,100	293	2,293	1.84	2.12
April	107,602	13,400	408	3,587	2.87	3.20
May	8,655	542	152	286	.229	.26
June	31,192	4,130	200	1,040	.833	.93
July	13,037	3,170	54	421	.337	.39
August	3,250	1,530	15	105	.084	.10
September	4,911	1,400	29	164	.131	.15
Water year 1939-40	299,689	15,100	13	819	.656	8.92

Peak discharge.- Apr. 16 (1 p.m.) 15,300 sec.-ft.; Apr. 21 (1 a.m.) 12,000 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station near Mexico.
Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 7.

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 1940.

Average discharge.- 15 years (1921-35, 1939-40), 434 second-feet.

Extremes.- Maximum discharge during year, 2,940 second-feet Apr. 20 (gage height, 8.37 feet); minimum, 28 second-feet Oct. 23 (gage height, 0.45 foot).
1921-35, 1939-40: 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 diversion of 36 second-feet was made for municipal supply of city of Akron. Sewage returned to river below station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	317	103	106	126	349	2,120	447	1,190	513	197	406
2	63	242	133	128	100	407	2,250	400	1,230	574	86	359
3	65	194	60	152	97	951	2,160	362	1,190	591	100	352
4	113	190	44	109	111	1,940	2,350	367	1,070	558	46	242
5	73	174	109	108	128	1,680	1,850	315	835	528	121	215
6	64	160	131	121	237	1,640	1,640	361	657	468	230	158
7	121	181	134	90	174	1,390	1,470	315	571	396	65	118
8	46	180	118	144	128	1,110	1,270	308	551	368	53	133
9	110	145	125	107	137	912	1,070	291	1,420	296	149	132
10	127	136	125	136	538	780	873	296	1,520	269	62	135
11	117	136	160	136	762	690	834	298	1,680	277	53	131
12	99	134	140	95	657	591	1,230	248	1,310	194	93	137
13	96	138	166	143	1,150	556	1,190	281	1,070	162	117	126
14	62	149	180	312	1,150	513	1,150	193	816	125	80	121
15	85	162	153	410	854	468	1,310	162	640	159	61	114
16	47	132	168	259	798	453	1,390	154	528	178	84	128
17	132	137	157	266	780	453	1,190	136	453	143	55	136
18	99	112	155	234	708	597	1,310	134	531	139	134	116
19	74	100	155	196	726	1,230	1,310	127	468	140	135	131
20	42	151	148	176	674	1,270	2,440	170	424	147	121	140
21	37	131	133	153	558	1,150	2,830	155	361	118	124	118
22	36	128	130	220	483	1,190	2,630	145	226	135	86	87
23	94	94	122	272	429	1,150	2,540	133	179	168	91	140
24	108	147	103	262	389	970	2,030	482	318	147	58	153
25	115	92	118	173	354	798	1,470	873	462	131	52	194
26	447	113	149	101	316	657	1,110	762	490	197	129	96
27	683	148	127	116	313	608	854	798	442	211	576	114
28	888	110	132	127	328	674	674	1,010	454	130	168	93
29	562	71	109	157	316	873	574	990	485	171	396	86
30	482	126	104	117	-	1,230	483	1,070	453	166	721	67
31	402	-	113	127	-	1,640	-	1,190	-	87	505	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,596	888	36	181		
November	4,430	317	71	148		
December	4,004	180	44	129		
Calendar year	-	-	-	-		
January	5,255	410	90	170		
February	13,521	1,150	97	466		
March	28,922	1,940	349	933		
April	45,602	2,830	483	1,520		
May	12,973	1,190	127	418		
June	22,024	1,680	179	734		
July	7,906	591	87	255		
August	4,937	721	46	159		
September	4,678	406	67	156		
Water year 1939-40	159,848	2,830	36	437		

Peak discharge.- Mar. 4 (8 a.m.) 2,250 sec.-ft.; Apr. 20 (5 p.m.) 2,940 sec.-ft.; June 9 (1 a.m.) 2,160 sec.-ft.; (10 p.m.) 2,350 sec.-ft.; June 10 (11 p.m.) 2,070 sec.-ft.; Aug. 27 (5 a.m.) 2,120 sec.-ft.

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 to September 1940.

Extremes.- Maximum discharge during period, 10,700 second-feet Apr. 20 (gage height, 18.8 feet); minimum, 69 second-feet Aug. 5 (gage height, 2.78 feet).
1921-23, 1927-35, 1940: Maximum discharge, 10,800 second-feet (revised) 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. Water is diverted 6 miles above station, at Brecksville, into the Ohio Canal and carried past station; measurements of canal made as follows: Aug. 10, 45.4 second-feet, Sept. 2, 35.9 second-feet, and Sept. 25, 54.1 second-feet. A small amount of water from Tuscarawas River is diverted into this basin at Portage Lakes.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					-	-	2,680	768	2,400	1,160	104	584
2					-	-	2,620	696	2,350	866	140	485
3					-	-	3,280	672	1,840	793	106	418
4					-	†5,580	4,800	649	1,590	720	106	355
5					-	3,160	2,800	626	1,260	649	74	297
6					-	2,570	2,680	570	1,040	579	198	240
7					-	2,190	1,340	570	842	490	264	196
8					-	1,890	2,040	552	793	410	112	191
9					-	1,440	1,790	529	3,360	363	98	168
10					†274	1,160	1,440	481	2,240	340	163	182
11					-	891	1,440	455	2,240	389	96	179
12					†1,830	744	2,860	485	1,840	265	83	179
13					-	696	2,300	374	1,590	232	127	175
14					-	649	2,350	451	1,220	175	140	166
15					-	570	2,860	318	965	157	114	157
16					-	556	2,350	359	818	210	97	140
17					-	593	1,940	301	672	178	115	161
18					-	1,280	2,300	284	672	172	165	170
19					-	2,920	2,040	262	793	175	246	152
20					†1,610	2,350	7,460	294	602	157	159	166
21					-	1,890	7,460	345	520	148	137	161
22					-	1,540	4,270	294	418	127	120	138
23					-	1,340	3,280	291	343	172	120	115
24					-	1,160	2,620	1,920	507	184	114	166
25					-	1,020	1,990	2,340	584	157	89	325
26					-	818	1,590	1,640	990	148	117	193
27					-	793	1,290	1,290	720	240	760	144
28					-	1,520	1,090	1,260	990	161	493	150
29					-	2,400	940	1,260	965	129	318	129
30					-	2,740	818	2,080	940	152	937	110
31					-	2,860	-	2,620	-	155	962	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	-	-	-	-		
February	-	-	-	-		
March 5-31	41,740	3,160	556	1,546		
April	78,718	7,460	818	2,624		
May	25,034	2,620	262	808		
June	36,104	3,360	343	1,203		
July	10,224	1,160	127	330		
August	6,874	962	74	222		
September	6,392	584	110	213		
Water year	-	-	-	-		

Peak discharge.- Mar. 19 (3 a.m.) 3,670 sec.-ft.; Apr. 4 (1 a.m.) 6,240 sec.-ft.; Apr. 15 (12:30 a.m.) 3,540 sec.-ft.; Apr. 20 (5 p.m.) 10,700 sec.-ft.; May 24 (9 p.m.) 4,200 sec.-ft.; June 9 (10 a.m.) 4,800 sec.-ft.
† Discharge measurement.

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 1940.

Average discharge.- 16 years, 34.7 second-feet.

Extremes.- Maximum discharge during year, 938 second-feet Mar. 4 (gage height, 3.75 feet); minimum, 6.1 second-feet Oct. 8, Dec. 22, Aug. 18 (gage height, 0.13 foot).
1920-35, 1939-40: Maximum discharge not known; no flow June 24, July 14, 1923, because of regulation above station.

Remarks.- Records fair. No water diverted into this basin during year from city of Akron municipal water supply. About 30 second-foot-days are pumped each month from below station and returned to stream above station.

Cooperation.- Gage-height record furnished by Goodyear Tire & Rubber Co.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

0.2	10.6	0.8	85.4	2.5	487
.3	19.2	1.0	120	3.0	652
.4	29.7	1.5	222	3.5	838
.6	55.2	2.0	343		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	36	17	16	15	22	36	30	57	23	15	87
2	16	33	26	14	15	40	29	29	46	20	17	84
3	15	33	24	12	15	312	103	30	38	18	18	84
4	12	32	23	12	15	396	95	30	33	17	18	82
5	15	29	18	16	16	67	46	26	29	17	27	67
6	14	30	17	16	29	46	33	23	22	17	44	16
7	11	31	17	15	26	38	29	22	23	16	21	16
8	11	26	16	16	17	36	40	23	24	19	17	16
9	19	22	16	15	17	27	42	22	89	19	19	20
10	21	19	17	16	95	20	33	20	90	27	19	20
11	19	20	19	16	104	20	53	19	110	22	18	20
12	17	17	15	17	68	20	100	18	74	17	20	20
13	16	17	23	19	55	22	71	18	60	15	21	20
14	14	19	20	56	31	23	71	18	40	15	20	17
15	10	18	17	38	31	17	73	20	34	17	19	15
16	11	18	17	22	28	18	117	20	22	19	19	16
17	11	24	17	19	27	34	73	18	20	18	18	16
18	11	17	16	18	24	57	97	17	46	17	25	15
19	14	16	16	a18	38	63	68	17	34	17	24	15
20	14	15	17	a18	36	39	362	16	23	12	29	15
21	13	17	15	a18	29	30	157	15	20	12	28	15
22	12	17	14	a18	18	27	90	14	18	16	16	12
23	17	16	14	18	16	22	74	16	20	17	16	15
24	17	16	12	a19	14	22	64	80	35	17	24	22
25	20	15	18	19	12	23	58	59	29	17	16	30
26	93	14	18	19	14	20	54	34	36	30	34	18
27	181	17	18	18	14	27	50	26	26	23	117	17
28	108	17	18	17	14	43	46	21	35	14	38	17
29	46	17	17	17	14	44	43	24	31	15	42	17
30	39	17	16	17	-	66	29	79	27	16	159	19
31	38	-	12	16	-	55	-	90	-	15	104	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	877	181	10	28.3		
November	635	36	14	21.2		
December	540	26	12	17.4		
Calendar year	-	-	-	-		
January	585	56	12	18.9		
February	847	104	12	29.2		
March	1,696	396	17	54.7		
April	2,236	362	29	74.5		
May	894	90	14	28.8		
June	1,191	110	18	39.7		
July	554	30	12	17.9		
August	1,022	159	15	33.0		
September	843	87	12	28.1		
Water year 1939-40	11,920	396	10	32.6		

Peak discharge.- Oct. 23 (1 a.m.) 282 sec.-ft.; Oct. 27 (5 p.m.) 487 sec.-ft.; Feb. 10 (9 p.m.) 292 sec.-ft.; Mar. 4 (1 a.m.) 938 sec.-ft.; Apr. 20 (9 a.m.) 518 sec.-ft.; Aug. 27 (4 a.m.) 487 sec.-ft.

a No gage-height record; discharge interpolated.

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. Prior to Dec. 20, 1939, staff gage 150 feet upstream.
Drainage area.- 251 square miles.
Records available.- July 1925 to November 1935, October 1939 to September 1940.
Average discharge.- 11 years, 288 second-feet (not including diversion).
Extremes.- Maximum discharge during year, 6,850 second-feet Apr. 20 (gage height, 9.10 feet); minimum daily, 18 second-feet Aug. 16, 17.
1925-35, 1940: 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 March 23, 1913, reached a stage of 17.3 feet, present datum, from floodmarks (discharge not determined).
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Water is diverted above dam for municipal water supply of city of Willoughby.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Mar. 4-11, 17-28, Apr. 3, 4)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30					
0.25	20	0.5	88	1.7	26	3.0	412	6.0	2,870
.3	29	.6	128	1.8	42	3.5	680	7.0	3,980
.4	55	.7	175	2.0	81	4.0	1,020	8.0	5,260
				2.3	158	4.5	1,440	9.0	6,700
				2.6	252	5.0	1,920		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a27	62	45	45	65	150	984	138	1,630	1,350	25	147
2	a27	152	65	44	64	180	609	161	964	511	23	93
3	a27	186	112	*44	62	900	1,600	181	460	288	22	75
4	a26	133	350	43	61	2,480	2,060	181	296	203	22	58
5	a25	88	*186	42	60	1,400	768	164	213	150	23	51
6	a24	75	137	41	70	842	436	150	181	120	40	46
7	a23	78	104	41	90	609	332	147	155	103	47	42
8	a22	88	100	40	120	559	630	141	213	88	39	49
9	a20	88	78	40	180	*403	586	152	3,990	79	31	55
10	a25	75	81	39	350	300	426	130	1,070	77	26	49
11	34	75	270	39	800	252	358	112	465	81	23	60
12	50	72	170	50	2,000	220	1,200	103	320	81	22	75
13	34	68	128	90	1,700	200	829	100	348	70	23	60
14	27	58	180	500	700	190	848	125	213	58	20	51
15	29	55	137	1,130	450	185	1,360	150	155	68	20	46
16	27	52	112	403	340	180	795	161	125	242	18	44
17	25	50	137	185	260	242	470	152	110	138	18	40
18	25	45	128	143	200	947	782	133	533	95	22	39
19	25	50	120	120	475	1,960	603	125	553	70	118	37
20	29	45	104	110	768	1,490	3,580	155	239	53	70	34
21	29	45	98	100	548	730	2,660	158	150	55	44	34
22	29	52	95	93	403	603	742	120	120	53	34	34
23	29	68	91	88	316	316	441	110	86	46	32	34
24	29	58	75	84	239	328	328	2,780	219	34	29	39
25	29	55	64	80	180	292	263	2,490	259	36	29	141
26	52	50	57	77	150	249	219	818	870	21	51	108
27	92	39	53	75	130	184	187	460	441	32	110	68
28	180	47	50	73	130	728	167	328	1,370	34	136	53
29	142	39	48	71	130	5,260	147	274	1,670	34	75	45
30	88	45	47	69	-	2,880	136	1,660	1,190	31	81	42
31	68	-	45	*67	-	1,770	-	2,050	-	29	259	-

Month	Observed				Mean diversion†	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	1,318	180	20	42.5	1.56	44.1	0.176	0.20
November	2,093	186	39	69.8	1.47	71.3	.284	.32
December	3,467	350	45	112	1.43	113	.450	.52
Calendar year	-	-	-	-	-	-	-	-
January	4,066	1,130	39	131	1.43	132	.526	.61
February	11,041	2,000	60	381	1.45	382	1.52	1.64
March	25,029	3,260	150	807	1.38	808	3.22	3.71
April	24,546	3,580	136	818	1.42	819	3.26	3.64
May	14,109	2,780	100	455	1.47	456	1.82	2.10
June	18,608	3,990	86	620	1.48	621	2.47	2.76
July	4,330	1,350	21	140	1.64	142	.566	.65
August	1,532	259	18	49.4	1.76	51.2	.204	.24
September	1,750	147	34	58.3	1.55	59.8	.238	.27
Water year 1939-40	111,889	3,990	18	306	1.50	308	1.23	16.66

Peak discharge.- Mar. 29 (8 p.m.) 4,870 sec.-ft.; Apr. 3 (9 p.m.) 4,220 sec.-ft.; Apr. 20 (11 p.m.) 6,850 sec.-ft.; May 24 (4 p.m.) 5,540 sec.-ft.; June 9 (3:30 a.m.) 5,960 sec.-ft.; June 28 (4:30 p.m.) 3,290 sec.-ft.
* Winter discharge measurement made on this day.
† Diversion of municipal supply of city of Willoughby.
a No gage-height record; discharge computed on basis of records for Ashtabula, Cuyahoga, and Grand Rivers.
Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 14, Jan. 17 to Feb. 18, Feb. 25 to Mar. 3, and Mar. 12-16.

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 (general adjustment of 1912).

Drainage area.- 587 square miles.

Records available.- July 1922 to December 1935, February 1938 to September 1940.

Average discharge.- 15 years, 618 second-feet.

Extremes.- Maximum discharge during year, 8,520 second-feet Mar. 30; maximum gage height, 10.8 feet (ice jam) Feb. 13; minimum discharge, 3.7 second-feet Oct. 19 (gage height, 0.63 foot).

1922-35, 1938-40: 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 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 29				Mar. 30 to Sept. 30					
0.7	5.5	2.0	158	1.0	13.2	2.0	135	5.5	2,090
.8	8.7	2.5	304	1.1	17.7	2.5	274	6.0	2,660
1.0	17	3.0	496	1.2	23.6	3.0	458	7.0	4,070
1.2	29.5	3.5	728	1.4	39.5	3.5	688	8.0	5,900
1.4	49	4.0	1,010	1.6	62	4.0	968	9.0	8,050
1.6	77	5.0	1,650	1.8	94	5.0	1,640		
1.8	115								

Note.- Same as succeeding table above 5.1 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	54	17	b28	b40	308	5,120	219	4,740	740	12	252
2	25	62	18	b27	b40	339	3,450	252	2,720	636	12	213
3	24	66	27	b26	b40	486	3,410	243	2,090	600	12	126
4	19	49	89	*b25	b35	b2,500	6,300	243	1,500	487	11	81
5	15	38	113	b24	b35	*b3,600	3,360	222	831	321	12	41
6	15	31	105	b23	b40	b3,000	1,720	207	418	185	20	34
7	13	28	77	b22	b45	2,420	1,260	199	268	113	13	27
8	12	25	62	b22	b60	2,200	1,130	191	372	86	11	24
9	9.1	26	56	b21	b100	1,940	999	191	2,690	65	11	20
10	8.4	25	54	b21	b200	1,550	767	175	1,460	46	11	20
11	12	25	111	b20	b500	1,260	602	142	938	60	11	20
12	7.7	26	156	b25	b1,500	1,130	1,660	122	1,010	57	11	20
13	6.5	25	109	b25	3,380	807	2,540	104	1,320	52	11	17
14	6.8	23	109	b200	2,720	570	2,720	91	968	49	11	17
15	5.8	21	111	b1,700	1,520	530	2,480	91	572	24	11	17
16	5.2	19	94	1,320	b1,200	526	1,800	98	324	110	11	16
17	5.2	19	104	890	b1,000	570	b1,260	117	193	167	10	14
18	4.7	18	111	b600	b850	904	1,500	124	182	142	11	13
19	4.2	17	109	b400	b750	b3,500	1,800	122	372	109	14	13
20	5.2	16	105	b300	b700	*b5,300	3,170	117	314	80	11	12
21	5.0	16	92	b200	1,220	4,070	7,150	104	177	34	9.9	12
22	5.2	16	82	b150	1,320	3,310	5,500	87	142	36	9.9	11
23	5.0	16	78	b100	1,160	2,420	4,230	94	120	29	11	11
24	5.0	17	46	b80	862	1,550	2,480	1,860	117	24	10	12
25	5.5	17	b42	b70	b700	834	1,180	4,750	120	21	12	22
26	5.8	17	b39	b60	b500	526	537	2,800	287	19	32	40
27	16	19	b36	b55	b400	418	338	1,800	281	18	49	52
28	19	19	b34	b50	b350	354	258	1,460	757	16	58	56
29	20	19	b32	b50	339	3,280	207	1,030	1,640	15	79	46
30	30	17	b31	b45	-	8,050	182	1,560	999	13	104	35
31	49	-	b30	*b45	-	6,510	-	4,790	-	12	128	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	389.3	49	4.2	12.6	0.021	0.02
November	786	66	16	26.2	.045	.05
December	2,279	156	17	73.5	.126	.14
Calendar year 1939	183,774.4	7,110	.2	503	.857	11.63
January	6,624	1,700	20	214	.365	.42
February	21,606	3,380	35	745	1.27	1.37
March	64,762	8,050	308	2,089	3.56	4.10
April	69,110	7,150	182	2,304	3.93	4.38
May	23,605	4,790	87	761	1.30	1.50
June	27,922	4,740	117	931	1.59	1.77
July	4,376	740	12	141	.240	.28
August	739.8	128	9.9	23.9	.041	.05
September	1,294	252	11	43.1	.073	.08
Water year 1939-40	223,493.1	8,050	4.2	611	1.04	14.16

Peak discharge.- Mar. 30 (6 a.m.) 8,520 sec.-ft.; Apr. 4 (10 a.m.) 6,720 sec.-ft.; Apr. 21 (9 a.m.) 7,590 sec.-ft.; May 25 (10 a.m.) 5,120 sec.-ft.; May 31 (10 p.m.) 6,100 sec.-ft.

* Winter discharge measurement made on this day.

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, 1¾ 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 1940.

Average discharge.- 12 years, 135 second-feet.

Extremes.- Maximum discharge during year, 4,470 second-feet Mar. 30; maximum gage height, 9.16 feet (ice jam) Feb. 13; no flow Aug. 5.
1924-35, 1939-40: Maximum discharge, 6,270 second-feet Jan. 19, 1929; maximum gage height that of Feb. 13, 1940; no flow at times during 1925-35, 1939, 1940.

Remarks.- Records good except those below 5 second-feet, which are fair, and those for periods of ice effect, which are poor.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 4 to Nov. 26, Sept. 28-30)

Oct. 1 to Mar. 29

0.5	2.1	1.0	68	0.5	0.82	1.0	49.5	3.0	1,105
.6	7.5	1.2	124	.6	3.6	1.3	143	4.0	1,845
.7	15.7	1.5	232	.7	9.7	1.6	263	5.0	2,620
.8	29	1.9	400	.8	16.9	2.0	450		
				.9	31.3	2.5	755		

Mar. 30 to Sept. 30

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	5.0	3.3	b5	*b15	b50	782	23	864	189	0.1	71
2	.8	13	4.4	b4	b14	b65	395	33	276	97	.1	30
3	.4	12	8.3	b4	b13	b250	894	46	139	42	.1	20
4	.2	6.8	12	*b4	b12	b1,600	2,010	44	70	23	.1	12
5	.1	5.5	24	b4	b12	b1,320	508	37	42	26	0	7.5
6	.1	4.9	20	b4	b13	670	234	35	28	11	.5	4.1
7	.1	4.9	14	b4	b15	382	136	31	21	8.2	.4	3.2
8	.3	5.5	10	b4	b20	280	185	33	51	6.2	11	2.0
9	.6	4.9	7.0	b4	b30	197	298	31	540	5.6	12	1.3
10	.8	4.9	10	b4	b50	b130	213	37	221	4.5	5.6	1.8
11	2.8	6.1	52	b4	b100	b100	129	30	97	5.6	3.2	1.5
12	.9	5.5	92	b4	b400	b80	630	21	126	11	1.3	1.8
13	.6	5.5	38	b5	b1,400	b70	742	17	151	19	.8	2.7
14	.6	6.1	36	b50	710	b65	664	15	54	16	.7	1.8
15	.4	5.5	52	b1,000	b225	b60	553	93	31	11	.5	1.5
16	.3	4.9	34	525	b150	b60	456	107	21	14	.3	1.5
17	.3	4.4	21	264	b120	b65	263	75	16	101	.2	1.1
18	.2	4.4	26	b150	b100	b170	400	57	15	44	.2	1.3
19	.2	4.4	26	b90	b90	1,460	459	42	172	21	.7	1.1
20	.3	3.8	26	b70	224	1,640	960	30	166	12	.8	1.1
21	.3	2.8	61	b55	396	767	1,510	24	62	7.5	.5	1.1
22	.3	3.8	40	b45	355	461	346	17	31	4.5	.4	.8
23	.2	3.8	b30	b35	228	248	166	19	21	3.2	.3	.5
24	.3	3.3	b20	b30	140	b140	101	1,390	18	3.2	.2	1.0
25	.3	2.8	b15	b27	b80	b80	67	1,750	20	1.5	.3	5.6
26	1.1	2.1	b11	b24	b60	b60	49	422	30	1.0	3.6	25
27	4.4	2.4	b9	b22	b55	*b55	a40	189	30	.7	4.5	31
28	6.8	3.3	b7	b20	b55	b80	a31	125	70	.6	25	16
29	5.3	2.4	b6	b18	b50	1,260	a26	72	482	.4	31	8.9
30	1.6	2.4	b5	b17	-	2,650	23	490	158	.3	25	6.2
31	1.3	-	b5	b16	-	1,340	-	2,100	-	.2	26	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	31.6	6.8	0.1	1.02	0.0086	0.01
November	147.1	13	2.1	4.90	.042	.05
December	725.0	92	3.3	23.4	.198	.23
Calendar year	-	-	-	-	-	-
January	2,512	1,000	4	81.0	.686	.79
February	5,132	1,400	12	177	1.50	1.62
March	16,855	2,650	50	511	4.33	4.99
April	13,250	2,010	23	442	3.75	4.18
May	7,416	2,100	15	239	2.03	2.34
June	4,023	864	15	134	1.14	1.27
July	690.1	189	.2	22.3	.189	.22
August	155.4	31	0	5.01	.042	.05
September	264.4	71	.5	8.81	.075	.08
Water year 1939-40	50,200.6	2,650	0	137	1.16	15.83

Peak discharge.- Mar. 4 (5 p.m.) 2,000 sec.-ft.; Mar. 30 (1 a.m.) 4,470 sec.-ft.; Apr. 4 (4 a.m.) 3,290 sec.-ft.; Apr. 20 (11:30 p.m.) 2,940 sec.-ft.; May 24 (10 p.m.) 4,130 sec.-ft.; May 31 (3:30 p.m.) 3,290 sec.-ft.

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge affected by ice.

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, about 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 1940.

Extremes (regulated).- Maximum discharge during period, 15,300 second-feet Apr. 4 (gage height, 8.80 feet); minimum, 16 second-feet Sept. 13 (gage height, 1.15 feet); minimum daily, 108 second-feet Aug. 12.

Remarks.- Records good for periods of open water, and fair for periods of ice effect or faulty gage heights. Flow regulated by operation of municipal power plant and several industrial plants above station. Diurnal fluctuation at low and medium stages.

Rating table, Nov. 9, 1939, to Sept. 30, 1940, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.6	106	3.0	851	5.5	4,360
1.8	171	3.5	1,300	6.0	5,480
2.0	250	4.0	1,850	6.9	7,930
2.3	394	4.5	2,560	7.9	11,400
2.6	568	5.0	3,400		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	175	270	230	290	6,710	754	501	929	154	388
2		-	197	260	225	280	4,500	978	738	572	142	245
3		-	a4,570	250	220	350	5,650	846	476	463	139	221
4		-	2,300	245	215	1,180	11,300	850	380	450	130	180
5		-	962	235	210	1,610	7,330	746	356	418	152	150
6		-	647	230	240	1,220	3,550	658	307	350	231	134
7		-	546	220	350	950	3,420	593	410	298	186	125
8		-	901	215	*440	780	4,740	548	926	293	147	137
9		976	559	210	380	604	7,120	570	474	365	132	287
10		716	639	210	420	560	2,570	502	432	389	119	252
11		821	1,350	215	1,200	500	2,270	458	2,080	408	113	208
12		568	*540	300	1,440	450	6,730	426	1,990	348	108	189
13		a461	740	480	1,660	460	2,510	502	1,390	294	178	200
14		410	780	860	1,060	490	1,790	450	750	255	379	194
15		360	360	1,300	717	480	1,780	434	540	241	182	204
16		378	480	775	710	457	2,110	488	468	593	142	375
17		313	520	607	620	452	1,580	473	398	406	136	256
18		299	820	620	600	622	1,960	450	2,120	280	136	202
19		280	500	519	626	2,800	1,600	444	2,450	254	262	172
20		274	1,650	475	692	1,790	1,890	806	973	224	214	172
21		240	1,040	430	587	1,300	2,990	537	602	204	160	190
22		233	560	390	508	1,120	2,510	504	458	212	132	310
23		225	680	360	460	776	1,680	572	462	196	132	206
24		204	520	330	420	658	1,410	2,150	6,240	259	130	238
25		190	460	310	380	560	1,200	920	2,090	194	120	2,610
26		186	410	290	350	490	1,120	721	1,150	183	169	804
27		182	370	280	330	440	936	888	750	174	154	460
28		182	340	260	310	480	824	638	818	164	412	342
29		178	320	250	300	3,280	764	508	941	173	374	275
30		175	300	240	-	6,910	710	437	636	179	190	248
31		-	a280	235	-	8,520	-	430	-	160	206	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	-	-	-	-	-	-
November 9-30	7,851	976	175	357	0.834	0.68
December	24,516	4,570	175	791	1.85	2.13
Calendar year	-	-	-	-	-	-
January	11,871	1,300	210	383	.895	1.03
February	15,900	1,680	210	548	1.28	1.38
March	40,895	8,520	280	1,319	3.08	3.55
April	95,254	11,300	710	3,175	7.42	8.28
May	20,291	2,160	426	655	1.53	1.76
June	32,286	6,240	307	1,076	2.51	2.80
July	9,928	929	160	320	.748	.86
August	5,561	412	108	179	.418	.48
September	9,994	2,610	125	333	.778	.87
Water year	-	-	-	-	-	-

Peak discharge.- Apr. 4 (11:30 p.m.) 15,300 sec.-ft.
* Winter discharge measurement made on this day.
a No or doubtful gage-height record; discharge computed on basis of records for nearby streams.
Note.- Stage-discharge relation affected by ice Dec. 11 to Jan. 15, Jan. 21 to Feb. 11, Feb. 17, 18, Feb. 23 to Mar. 4, Mar. 8-14, 19, 25-28.

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.
Drainage area.- 145 square miles.
Records available.- September 1938 to September 1940.
Extremes.- Maximum discharge during year, 8,420 second-feet Mar. 31 (gage height, 6.90 feet); maximum gage height, 8.98 feet (ice jam) Mar. 30; minimum discharge, 5.6 second-feet (regulated), Nov. 28 (gage height, 0.84 foot).
1938-40: Maximum discharge, 10,700 second-feet Feb. 20, 1939 (gage height, 7.62 feet); maximum gage height, that of Mar. 30, 1940; minimum discharge, 1.4 second-feet (regulated), Sept. 3 and 22, 1939; minimum gage height observed, 0.70 foot Aug. 28, 31, and Sept. 3, 1939.
Remarks.- Records good except those for periods of ice effect or backwater from leaves and trash and aquatic growth on control, which are fair.

Rating tables, water year 1939-40, except periods of ice effect and backwater from leaves and trash (gage height, in feet, and discharge, in second-feet)

Oct. 1 to June 24

0.85	6.01	1.3	60	2.5	560
.90	8.31	1.4	80	2.8	770
.95	11.0	1.5	105	3.3	1,210
1.00	14.9	1.6	135	3.8	1,770
1.05	20.0	1.8	207	4.5	2,800
1.10	26.7	2.1	342	5.3	4,310

June 25 to Sept. 30

0.90	9.10	1.05	22.6
.95	12.85	1.10	28.4
1.00	17.4	1.2	42.7

Note.- Same as preceding table above 1.2 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	37	19	41	34	92	3,370	122	78	197	18	42
2	33	50	27	39	33	90	1,800	233	171	105	15	39
3	16	54	240	38	32	110	1,960	181	97	72	14	25
4	12	36	434	37	31	400	3,850	189	63	66	13	19
5	9.4	31	148	36	33	600	1,710	152	50	58	13	16
6	8.8	42	85	35	41	410	934	127	46	50	37	14
7	7.4	60	66	35	52	320	910	104	37	43	34	12
8	8.8	86	153	34	*68	260	1,240	91	35	37	21	13
9	21	172	96	33	56	220	1,640	87	49	37	15	36
10	41	77	75	33	80	190	577	64	462	57	13	55
11	143	60	215	36	155	170	502	60	719	48	11	45
12	71	67	88	*49	450	155	1,980	62	332	54	12	35
13	36	44	*111	64	480	160	647	62	221	48	13	26
14	27	35	192	98	370	165	464	64	111	36	42	23
15	21	33	65	260	260	185	479	64	71	31	29	26
16	18	31	84	170	205	175	556	66	56	55	18	83
17	15	30	94	118	165	160	344	70	48	82	15	66
18	12	27	152	82	140	180	770	62	42	43	13	38
19	11	24	92	68	165	720	424	66	250	32	30	27
20	11	21	301	60	270	640	271	152	146	30	28	23
21	9.9	21	290	54	260	400	470	103	67	27	22	27
22	12	23	90	49	190	300	730	72	52	26	19	27
23	13	21	120	46	160	240	428	147	51	24	25	28
24	14	20	86	43	140	205	277	661	1,200	21	16	32
25	14	19	68	41	125	185	210	249	536	20	16	441
26	18	14	58	39	114	170	341	184	258	18	16	148
27	37	15	50	38	106	160	205	140	131	18	16	66
28	48	20	44	37	100	175	157	111	93	17	21	44
29	57	21	50	36	96	1,250	132	80	153	18	28	34
30	40	18	46	35	-	2,450	117	72	105	20	28	28
31	28	-	43	35	-	*4,300	-	69	-	27	22	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	877.3	143	7.4	28.3	0.196	0.22
November	1,209	172	14	40.3	.278	.31
December	3,682	434	19	119	.821	.95
Calendar year 1939	57,950.0	6,490	2.6	159	1.10	14.88
January	1,819	260	33	58.7	.405	.47
February	4,401	480	31	152	1.05	1.13
March	15,237	4,300	90	492	3.39	3.91
April	27,495	3,850	117	916	6.32	7.05
May	3,966	661	60	128	.883	1.02
June	5,730	1,200	35	191	1.32	1.47
July	1,417	197	17	45.7	.315	.36
August	633	42	11	20.4	.141	.16
September	1,537	441	12	51.2	.353	.39
Water year 1939-40	68,003.3	4,300	7.4	186	1.28	17.44

Peak discharge.- Mar. 31 (7:20 p.m.) 8,420 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by backwater from weeds and trash Oct. 1-10 and May 13-19; affected by ice Dec. 23 to Mar. 31.

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, 80 feet downstream from Little Buffalo Creek, 700 feet downstream from bridge on Bowen Road, and 2 miles southeast of Lancaster, Erie County. Datum of gage is 672.80 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 93.3 square miles.

Records available.- September 1938 to September 1940.

Extremes.- Maximum daily discharge during year, 3,000 second-feet Mar. 31; maximum gage height, 8.95 feet (ice jam) Mar. 31; minimum discharge, 1.3 second-feet Aug. 5 (gage height, 3.58 feet).
1938-40: Maximum discharge, 6,720 second-feet Feb. 20, 1939 (gage height, 8.60 feet); maximum gage height, 10.78 feet (ice jam) Feb. 28, 1939; practically no flow Aug. 8, 9, 1939, when permanent stop-logs were installed in dam.

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

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	15	9.6	24	18	56	2,300	65	44	55	2.4	9.6
2	14	27	15	23	17	54	*1,560	146	62	36	2.4	8.1
3	8.1	25	227	22	17	66	1,460	102	43	25	2.2	6.6
4	5.1	17	196	21	17	240	2,960	125	27	38	1.8	5.2
5	3.8	17	78	21	18	370	1,210	92	21	22	1.6	4.5
6	2.9	29	52	20	19	250	701	70	19	17	6.0	3.8
7	2.4	35	42	20	*22	190	588	60	16	13	12	3.4
8	3.4	38	61	19	34	155	920	51	15	10	7.5	3.3
9	6.8	48	44	19	28	130	1,040	50	15	10	5.2	6.1
10	9.7	29	40	19	43	114	304	40	77	9.0	3.9	7.3
11	48	22	108	20	86	104	344	38	150	11	2.9	6.2
12	26	21	45	24	270	96	1,300	34	44	31	1.9	5.4
13	15	19	*65	*34	300	98	554	35	34	19	30	4.9
14	11	15	87	64	220	100	240	36	22	12	27	4.3
15	9.0	13	32	160	170	110	296	36	16	9.8	11	5.4
16	7.4	16	43	104	130	104	282	38	12	16	6.9	9.8
17	6.1	15	45	72	100	98	178	47	10	14	5.4	11
18	5.2	14	62	52	82	108	539	43	9.6	10	4.2	8.0
19	4.1	13	45	43	100	450	220	40	12	8.5	31	6.0
20	3.2	11	125	37	160	400	144	85	21	8.2	14	5.3
21	3.3	8.0	130	33	150	250	358	52	11	8.7	8.4	6.0
22	3.4	9.5	60	29	118	185	453	35	10	8.2	7.5	10
23	3.8	11	74	27	96	150	244	60	10	7.2	21	8.8
24	3.9	9.0	56	25	84	130	165	511	448	6.2	9.3	12
25	3.8	8.4	43	23	76	114	121	164	255	5.6	7.4	104
26	8.4	5.8	38	22	66	106	121	150	96	5.2	7.2	43
27	15	5.9	34	21	62	100	96	96	65	4.5	6.5	19
28	17	7.7	31	20	60	104	78	67	43	4.3	7.8	13
29	15	8.6	29	19	58	809	66	48	68	3.4	10	10
30	13	9.0	27	19	-	1,650	62	40	43	3.8	7.8	8.7
31	11	-	25	18	-	3,000	-	35	-	3.2	8.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	320.8	48	2.4	10.3	0.110	0.13
November	521.9	48	5.8	17.4	.186	.21
December	1,966.6	227	9.6	63.4	.680	.78
Calendar year 1939	38,554.9	5,100	.1	106	1.14	15.37
January	1,074	160	18	34.6	.371	.43
February	2,623	300	17	90.4	.969	1.05
March	9,882	3,000	54	319	3.42	3.94
April	18,704	2,960	62	623	6.68	7.45
May	2,491	511	34	80.4	.862	.99
June	1,718.6	448	9.6	57.3	.614	.68
July	434.8	55	3.2	14.0	.150	.17
August	280.4	31	1.6	9.05	.097	.11
September	358.7	104	3.3	12.0	.129	.14
Water year 1939-40	40,375.8	3,000	1.6	110	1.18	16.08

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 21 to Apr. 1.

Cazenovia Creek at Ebenezer, N. Y.

Location.- Water-stage recorder, lat. 42°49'45", long. 78°46'40", 40 feet upstream from steel 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 (subject to correction for general adjustment of 1929).

Drainage area.- 136 square miles.

Records available.- June 24 to September 1940.

Extremes.- Maximum discharge during period, 1,960 second-feet Sept. 25 (gage height, 4.99 feet); minimum, 11 second-feet Aug. 18 (gage height, 0.63 foot).

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

Rating table, period June 24 to Sept. 30, 1940 (gage height, in feet, and discharge, in second-feet)

0.6	9.5	1.1	56	2.6	504
.7	15.5	1.3	90	3.2	791
.8	22.5	1.5	132	3.7	1,075
.9	31.5	1.8	210		
1.0	42.5	2.1	306		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	295	22	81
2									-	a130	17	45
3									-	a80	15	29
4									-	a74	14	22
5									-	a66	15	19
6									-	a54	58	17
7									-	a47	49	16
8									-	a40	28	28
9									-	a35	20	17
10									-	a47	18	23
11									-	38	15	28
12									-	42	14	24
13									-	45	30	21
14									-	47	55	22
15									-	41	33	24
16									-	82	22	57
17									-	91	18	42
18									-	55	16	28
19									-	39	60	22
20									-	36	45	20
21									-	38	29	22
22									-	35	25	32
23									-	30	25	28
24									1,040	30	18	29
25									372	26	18	967
26									a150	20	20	156
27									a102	23	18	63
28									a82	24	22	44
29									a165	23	39	35
30									a82	35	30	31
31									-	37	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June 24-30	1,993	1,040	82	285	2.10	0.55
July	1,705	295	20	55.0	.404	.47
August	831	60	14	26.8	.197	.23
September	1,982	967	16	66.1	.486	.54
Water year	-	-	-	-	-	-

a Faulty or no gage-height record; discharge computed on basis of weather records and records for Buffalo Creek at Gardenville and Cayuga Creek near Lancaster.

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 1940.
Average discharge.- 27 years (1912-19, 1920-40), 26.7 second-feet.
Extremes.- Maximum discharge observed during year, 1,180 second-feet Apr. 4 (gage height, 8.9 feet); minimum discharge, 0.6 second-foot Oct. 7 (gage height, 0.27 foot).
1912-40: 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, which are fair. Gage read twice daily.

Rating tables, water year 1939-40, except periods of ice effect, (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31						Apr. 1 to Sept. 30			
0.25	0.53	0.6	4.39	2.3	95	0.25	0.53	0.6	4.33
.3	.81	.7	6.44	3.0	164	.3	.81	.7	6.33
.35	1.18	.8	8.99	4.0	284	.35	1.16	.8	8.80
.4	1.65	1.0	15.3	5.0	425	.4	1.58	1.0	14.75
.45	2.20	1.3	27	6.0	585	.45	2.11	1.2	22.6
.5	2.83	1.6	43	6.2	619	.5	2.75	1.4	31.5
.55	3.55	1.9	63			.55	3.49		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.9	2.2	5.2	4.9	9.0	495	29	13	13	1.6	1.2
2	.8	2.7	2.7	5.0	4.8	9.0	333	32	23	11	1.6	1.1
3	.8	2.8	18	5.0	4.8	15	311	31	14	8.8	1.4	.9
4	.7	2.3	23	5.0	4.8	47	678	35	9.9	7.8	1.4	.9
5	.7	2.8	13	4.9	5.0	104	426	28	8.3	6.6	2.1	.8
6	.8	3.4	9.6	4.9	*5.4	82	289	23	7.0	5.7	2.4	.8
7	.6	5.6	8.4	4.9	9.0	60	246	21	6.1	5.1	2.5	.8
8	.8	9.6	15	4.9	9.8	46	379	18	6.3	4.7	2.2	.9
9	.9	11	8.7	4.8	8.8	37	364	19	6.3	4.2	1.6	2.8
10	1.1	6.0	9.0	4.8	10	32	126	15	44	4.0	1.5	1.6
11	2.1	5.2	12	4.8	25	28	119	13	23	5.9	1.4	1.2
12	1.3	5.0	6.0	5.0	36	25	237	12	12	8.8	1.2	1.2
13	1.1	4.4	*11	*5.6	43	26	104	13	14	5.1	1.6	1.1
14	1.0	3.9	13	7.4	29	28	74	12	9.9	4.3	1.5	1.1
15	1.0	3.4	6.7	22	25	28	96	12	7.8	3.6	1.2	2.6
16	1.0	3.7	7.6	16	22	28	95	12	6.3	5.3	1.2	2.0
17	.9	3.6	10	12	21	27	74	11	5.5	4.3	1.2	1.4
18	.8	3.4	12	9.8	19	28	141	11	5.9	3.6	1.1	1.3
19	.8	3.1	9.3	8.6	18	77	79	12	15	3.0	1.6	1.4
20	.8	2.7	18	7.8	17	74	52	25	9.1	2.9	1.4	1.3
21	.8	2.6	19	7.2	15	53	91	15	6.6	2.9	1.2	1.4
22	.8	2.6	9.0	6.8	14	43	100	21	5.5	2.9	1.1	1.4
23	1.1	2.6	9.6	6.4	13	35	127	20	6.8	2.8	1.2	1.2
24	1.0	2.4	8.6	6.0	12	30	101	31	120	2.8	1.1	1.4
25	.9	2.3	7.6	5.8	11	27	63	21	55	2.5	1.1	6.3
26	1.1	2.3	6.8	5.6	10	25	49	29	23	2.2	1.1	3.8
27	1.3	2.1	6.2	5.4	9.8	24	37	22	15	2.0	1.1	2.5
28	2.2	2.1	5.8	5.4	9.6	25	33	17	14	2.0	1.2	2.1
29	2.1	2.2	5.6	5.2	9.2	60	30	13	15	2.0	1.2	1.8
30	1.9	2.2	5.4	5.2	-	276	28	12	11	1.8	1.1	1.6
31	1.6	-	5.2	5.0	-	*617	-	11	-	1.6	1.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	34.2	2.2	0.6	1.10	0.050	0.06
November	109.9	11	1.9	3.66	.166	.19
December	304.0	23	2.2	9.81	.446	.51
Calendar year 1939	9,100.2	692	.4	24.9	1.13	15.41
January	212.4	22	4.8	6.85	.311	.36
February	425.9	43	4.8	14.7	.668	.72
March	2,025.0	617	9.0	65.3	2.97	3.42
April	5,377	678	28	179	8.14	9.08
May	596	35	11	19.2	.873	1.01
June	518.3	120	5.5	17.3	.786	.88
July	143.2	13	1.6	4.62	.210	.24
August	44.3	2.5	1.1	1.43	.065	.07
September	49.9	6.3	.8	1.66	.075	.08
Water year 1939-40	9,840.1	678	.6	26.9	1.22	16.62

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 23 to Jan. 12, Jan. 16 to Feb. 10, Feb. 16, 17, Feb. 23 to Mar. 3, Mar. 12, 23, 26, 27.

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 1940.

Average discharge.- 24 years, 372 second-feet.

Extremes.- Maximum discharge during year, 8,530 second-feet Mar. 31 (gage height, 9.22 feet), from rating curve extended above 3,600 second-feet by logarithmic plotting; minimum, 24 second-feet Aug. 12, 13; minimum gage height, 1.06 feet Oct. 5.
1916-40: Maximum discharge observed, 10,600 second-feet May 22, 1919 (gage height, 10.1 feet from staff gage, present datum), from rating curve extended above 3,800 second-feet by logarithmic plotting; minimum discharge, 5.8 second-feet Sept. 4, 1939 (gage height, 0.71 foot).

Remarks.- Records good.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 3				Dec. 4 to Sept. 30					
1.0	21	2.1	196	1.1	22	2.3	264	5.5	2,590
1.1	29	2.4	280	1.2	31	2.6	364	6.2	3,450
1.2	39	2.8	424	1.3	45	3.1	580	7.0	4,580
1.3	50	3.3	660	1.5	78	3.6	840	8.0	6,210
1.6	92	3.6	834	1.7	116	4.1	1,190	8.8	7,670
1.8	128			2.0	183	4.8	1,820		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	217	82	135	55	102	6,200	450	200	296	39	64
2	49	174	88	135	52	104	3,620	540	244	198	35	58
3	36	147	452	130	50	110	3,590	454	186	289	34	50
4	32	124	764	118	48	234	7,610	441	157	553	31	44
5	28	138	403	110	47	395	5,900	384	150	280	30	41
6	28	154	308	102	58	364	3,450	328	133	213	31	37
7	30	237	326	94	73	302	2,790	298	120	178	34	34
8	54	794	727	88	76	267	3,590	280	131	157	33	32
9	247	624	454	86	*73	240	4,000	305	116	141	30	54
10	225	445	*509	*82	78	210	2,200	252	106	137	27	50
11	99	488	816	78	153	190	1,710	230	106	124	25	44
12	89	369	438	76	198	175	5,490	211	141	148	24	39
13	69	316	494	74	342	185	2,660	206	106	126	51	38
14	65	*283	468	88	175	188	1,590	190	91	102	90	37
15	58	247	350	230	145	171	1,160	186	82	91	47	38
16	53	256	339	210	175	171	1,050	193	76	87	36	95
17	49	228	360	175	160	166	864	178	68	80	34	77
18	46	199	384	150	145	232	1,640	169	66	73	31	55
19	43	182	346	135	150	1,690	1,320	164	83	68	37	48
20	46	160	753	122	140	1,320	1,570	324	76	63	42	42
21	46	145	727	108	141	961	1,740	476	64	58	34	44
22	48	a132	476	104	129	700	1,400	387	61	56	30	58
23	54	a122	400	96	131	500	1,250	342	63	58	29	55
24	58	a113	340	91	124	400	1,200	312	311	75	27	51
25	53	a104	300	85	118	350	986	305	251	59	26	530
26	69	88	260	80	108	330	876	298	169	51	30	249
27	100	87	220	76	110	310	741	255	200	48	37	157
28	485	92	200	71	106	321	620	224	209	47	125	131
29	320	86	185	66	104	880	535	211	352	45	128	112
30	219	84	165	63	-	3,760	468	188	213	56	76	98
31	182	-	150	59	-	6,670	-	186	-	45	66	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,064	485	28	98.8	0.320	0.37
November	6,835	794	84	228	.738	.82
December	12,284	816	82	396	1.28	1.48
Calendar year 1939	111,221.4	6,080	6.9	305	.987	13.37
January	3,317	230	59	107	.346	.40
February	3,454	342	a47	119	.385	.42
March	21,998	6,670	102	710	2.30	2.65
April	71,820	7,610	468	2,394	7.75	8.65
May	9,467	824	164	305	.987	1.14
June	4,331	352	61	144	.466	.52
July	4,002	553	45	129	.417	.48
August	1,347	128	24	43.5	.141	.16
September	2,462	530	32	82.1	.266	.30
Water year 1939-40	144,391	7,610	24	395	1.28	17.39

Peak discharge.- Mar. 31 (10:30 p.m.) 8,530 sec.-ft.; Apr. 9 (12:30 a.m.) 5,310 sec.-ft.; Apr. 12 (8 a.m.) 7,380 sec.-ft.

* Winter discharge measurement made on this day.

a Faulty or no gage-height record; discharge estimated.

Note.- Stage-discharge relation affected by ice Dec. 23 to Jan. 21, Feb. 2-6, 14-20, Feb. 25 to Mar. 1, Mar. 9-13, 22-27.

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 mouth of Wolf Creek.

Drainage area.- 1,017 square miles.

Records available.- August 1908 to September 1940.

Average discharge.- 32 years, 1,200 second-feet.

Extremes.- Maximum discharge during year, 26,500 second-feet Apr. 5 (gage height, 10.78 feet); minimum, 72 second-feet Oct. 8 (gage height, 2.28 feet).
1908-40: 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 or obstructed intake, which are fair. Some diurnal fluctuation during low stages caused by power operations. Flow slightly regulated by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

Rating table, water year 1939-40, except periods of ice effect and obstructed intake (gage height, in feet, and discharge, in second-feet)

2.3	77	3.2	560	6.5	5,750
2.4	106	3.4	760	7.3	8,150
2.5	139	3.7	1,060	8.0	10,900
2.6	177	4.2	1,580	9.0	15,500
2.8	271	5.0	2,600	10.2	22,400
3.0	394	5.7	3,840		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	396	633	196	350	195	330	21,500	1,660	580	1,220	143	388
2	430	646	348	330	185	410	12,200	1,830	780	1,070	132	312
3	248	549	956	320	175	560	*10,000	1,800	834	818	142	248
4	178	446	3,320	310	165	480	20,000	1,800	662	1,250	179	256
5	102	412	1,730	300	160	1,060	22,100	1,670	580	1,210	180	193
6	86	418	1,070	480	180	1,350	11,500	1,310	540	906	230	168
7	77	520	814	470	215	1,140	9,230	1,100	515	702	222	224
8	232	1,510	1,140	460	210	960	10,200	978	512	613	192	318
9	386	2,290	*1,300	460	205	820	14,800	970	788	616	124	440
10	566	1,480	1,010	450	*215	700	7,510	948	676	611	141	382
11	392	1,270	2,140	245	440	620	5,500	770	2,470	456	202	374
12	422	1,200	1,640	240	600	560	14,600	680	2,100	397	180	268
13	321	914	1,270	440	1,100	540	9,200	620	1,170	366	272	190
14	418	765	1,370	430	1,000	600	5,280	600	714	352	330	242
15	465	678	1,040	520	580	580	4,050	620	628	300	315	324
16	432	644	1,130	800	620	560	4,140	640	558	347	205	336
17	419	624	1,170	660	780	540	3,410	640	518	356	254	357
18	396	734	1,360	560	460	640	4,230	580	478	284	295	384
19	265	528	1,310	500	580	1,950	5,010	540	530	240	302	266
20	148	445	1,620	660	660	4,300	3,470	1,040	445	260	340	176
21	229	397	3,030	620	560	3,490	6,610	1,830	316	294	347	233
22	368	356	1,540	580	490	2,860	5,490	1,180	268	293	198	348
23	390	336	1,100	540	450	2,030	4,340	1,080	272	309	97	380
24	336	308	1,160	500	720	1,450	4,800	1,070	2,360	332	122	388
25	410	452	980	300	700	1,120	3,530	948	2,610	311	236	2,170
26	316	522	860	280	680	1,000	2,910	968	1,270	199	248	1,870
27	229	502	700	260	660	900	2,380	944	900	173	253	934
28	1,480	467	460	245	640	860	1,980	766	856	160	308	598
29	1,750	437	420	230	340	2,700	1,700	620	1,440	155	1,030	470
30	972	294	390	215	-	9,200	1,740	580	1,200	163	540	380
31	682	-	660	205	-	17,000	-	540	-	147	393	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13,589	1,750	77	438	0.431	0.50
November	20,777	2,290	294	693	.681	.76
December	37,234	3,320	196	1,201	1.18	1.36
Calendar year 1939	410,928	17,300	32	1,126	1.11	15.03
January	12,960	800	205	418	.411	.47
February	13,965	1,100	160	482	.474	.51
March	61,310	17,000	330	1,978	1.94	2.24
April	233,400	22,100	1,700	7,780	7.65	8.54
May	31,322	1,850	540	1,010	.993	1.14
June	27,570	2,610	268	919	.904	1.01
July	14,910	1,250	147	481	.473	.55
August	8,202	1,030	97	265	.261	.30
September	13,597	2,170	168	453	.445	.50
Water year 1939-40	488,836	22,100	77	1,336	1.31	17.88

Peak discharge.- Apr. 5 (3 a.m.) 26,500 sec.-ft.; Apr. 9 (10:30 a.m.) 17,100 sec.-ft.; Apr. 12 (9 p.m.) 18,200 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 20, Mar. 24 to Apr. 4. Discharge, May 12-19, May 29 to June 2, June 5, 6, determined from gage heights adjusted for effect of obstructed intake.

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 1940.

Average discharge.- 30 years (1908-13, 1915-40), 1,562 second-feet.

Extremes.- Maximum discharge during year, about 29,600 second-feet Apr. 1 (gage height, 24.33 feet); minimum, 46 second-feet (regulated) Oct. 7 (gage height, 0.26 foot); minimum daily, 110 second-feet Oct. 7.
1903-06, 1908-14, 1915-40: Maximum discharge, 55,100 second-feet May 17,1916 (gage height, 25.44 feet); minimum, 18 second-feet Aug. 29, 1909; minimum daily discharge, 30 second-feet Aug. 8, 1909.

Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low stages caused by operation of power plants. Slight seasonal regulation by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	359	666	281	640	270	460	28,500	2,180	838	1,370	266	468
2	422	708	294	410	260	460	20,400	2,280	1,240	1,310	252	432
3	417	614	566	390	250	640	*14,900	2,350	1,250	988	241	388
4	260	511	3,340	380	240	1,000	21,500	2,300	939	1,380	248	295
5	148	470	2,170	370	230	1,400	25,100	2,180	804	1,490	245	310
6	128	450	1,290	430	250	1,750	16,700	1,790	701	1,080	364	249
7	110	482	966	540	300	1,450	13,000	1,480	718	890	619	232
8	128	1,070	1,000	*540	290	1,200	11,900	1,310	1,610	719	366	328
9	372	2,510	*1,490	540	280	1,020	15,600	1,250	1,910	674	269	810
10	514	1,740	1,120	540	290	900	11,300	1,250	1,550	723	234	567
11	474	1,310	1,950	470	500	800	7,730	1,070	2,910	624	251	486
12	437	1,340	1,990	380	800	740	13,100	990	4,410	570	254	460
13	390	1,020	1,380	380	1,400	700	13,100	952	2,550	517	318	307
14	346	874	1,510	520	1,500	800	9,420	822	1,610	487	471	293
15	474	752	1,220	620	1,180	780	5,970	842	1,120	442	460	382
16	438	677	1,160	960	720	769	5,550	887	918	460	352	423
17	433	653	1,210	820	800	740	4,650	863	753	464	292	450
18	415	714	1,400	720	*900	900	4,570	860	676	446	338	457
19	393	689	1,420	640	780	3,000	5,950	788	692	363	348	439
20	210	490	1,450	660	920	5,600	4,000	1,100	688	300	386	288
21	194	450	3,340	740	780	4,700	7,130	2,070	582	336	406	260
22	322	419	1,970	700	680	3,800	7,080	1,470	461	356	362	362
23	394	386	1,310	660	600	3,200	5,650	1,280	445	1,010	211	424
24	412	372	1,160	620	640	2,000	5,840	1,220	1,790	1,880	118	436
25	426	364	1,180	520	800	1,550	4,840	1,140	3,440	1,460	270	1,710
26	429	440	1,060	380	780	1,350	4,130	1,160	1,750	1,030	290	2,510
27	264	508	980	360	780	1,250	3,390	1,160	1,130	734	322	1,190
28	814	497	820	340	760	1,200	2,800	1,020	1,050	576	358	752
29	2,130	462	560	320	680	2,700	2,390	871	1,500	491	821	596
30	1,160	432	520	300	-	12,000	2,220	975	1,470	424	688	501
31	806	-	580	280	-	21,500	-	744	-	320	466	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	14,219	2,130	110	459	0.323	0.37
November	22,070	2,510	364	736	.519	.58
December	40,689	3,340	281	1,313	.925	1.07
Calendar year 1939	500,252	24,000	46	1,371	.966	13.13
January	16,110	960	a280	520	.366	.42
February	18,660	1,500	230	643	.453	.49
March	80,350	21,500	460	2,592	1.83	2.11
April	297,410	28,500	2,220	9,914	6.99	7.80
May	40,654	2,350	744	1,311	.924	1.07
June	41,505	4,410	445	1,384	.975	1.09
July	23,914	1,880	300	771	.543	.63
August	10,876	821	118	351	.247	.28
September	16,765	2,510	232	559	.394	.44
Water year 1939-40	623,222	28,500	110	1,703	1.20	16.35

Peak discharge.- Apr. 13 (2 a.m.) 16,200 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 31

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 1940.

Average discharge.- 20 years (1920-40), 2,658 second-feet.

Extremes (regulated).- Maximum discharge during year, 33,500 second-feet Apr. 2 (gage height, 14.08 feet); minimum, 32 second-feet Jan. 5 (gage height, -2.24 feet); minimum daily discharge, 375 second-feet June 23.

1919-40: Maximum discharge, that of Apr. 2, 1940; minimum, less than 10 second-feet, occurred during low-water periods in some years when power plant was shut down; minimum daily discharge, 219 second-feet 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 for the canal. Additional regulation is provided by Caneadea Reservoir.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	743	1,420	1,130	1,130	802	955	22,700	3,490	1,880	2,570	990	1,080
2	968	1,250	1,010	1,130	825	698	29,800	3,790	2,420	2,460	947	1,070
3	1,070	1,370	1,070	1,060	828	776	31,500	3,830	2,790	2,280	932	1,030
4	1,030	1,320	1,820	913	752	916	28,200	3,960	2,440	1,970	756	992
5	853	1,150	3,380	944	865	1,940	26,800	3,600	2,020	2,380	938	932
6	849	1,170	2,850	934	820	2,780	27,500	3,610	1,760	2,270	910	928
7	761	1,110	2,000	816	852	3,100	25,900	3,350	1,540	1,690	1,050	848
8	726	1,330	1,780	1,020	871	3,040	22,200	3,110	1,830	1,680	1,300	832
9	796	2,070	1,800	1,030	846	2,500	19,500	2,800	2,400	1,560	946	1,020
10	1,020	3,000	2,390	1,200	961	1,900	18,400	2,690	3,160	1,510	894	1,370
11	1,190	2,430	2,220	1,120	1,030	1,780	16,400	2,720	3,200	1,570	763	1,110
12	1,160	1,880	2,550	1,130	1,720	1,570	13,700	2,380	4,260	1,490	872	1,130
13	1,080	2,000	2,940	1,090	2,310	1,410	15,600	2,290	5,030	1,480	918	1,140
14	1,120	1,650	1,920	874	2,980	1,400	15,800	2,170	3,690	1,430	912	926
15	933	1,520	2,160	1,250	2,680	1,380	12,000	1,950	2,920	1,380	1,020	828
16	1,170	1,550	2,030	1,310	1,840	1,450	8,160	2,060	2,280	1,390	1,090	1,030
17	1,140	1,320	1,630	1,360	1,370	1,060	6,940	2,060	1,960	1,370	990	1,020
18	1,100	1,420	1,760	1,540	1,430	1,310	6,080	2,130	1,880	1,260	849	1,070
19	1,110	1,360	1,940	1,160	1,690	1,730	6,540	1,870	1,740	1,300	1,040	1,070
20	1,020	1,320	2,410	1,140	1,620	3,200	6,880	2,060	1,500	1,140	1,010	1,090
21	920	1,070	2,470	946	1,590	6,470	6,710	2,430	522	1,070	982	936
22	814	1,120	3,340	1,170	1,550	5,800	10,600	3,180	544	1,240	1,020	854
23	980	1,130	2,650	1,150	1,510	4,730	9,780	2,790	375	1,190	1,000	896
24	1,000	1,060	1,470	1,110	1,400	3,350	7,900	2,530	1,560	2,190	886	1,160
25	1,010	1,060	1,290	1,170	1,230	2,830	7,280	2,530	3,270	2,570	684	1,210
26	1,090	956	1,880	1,140	1,580	2,300	5,240	2,450	4,050	2,100	742	2,330
27	1,060	1,230	1,650	1,140	1,500	2,160	4,560	2,690	2,900	1,680	872	2,650
28	1,100	1,240	1,450	742	1,180	2,040	4,480	2,720	2,270	1,410	860	1,680
29	1,670	1,210	1,500	854	1,020	2,110	4,020	2,530	2,230	1,260	900	1,300
30	2,440	1,180	1,200	828	-	5,780	3,590	1,920	2,540	1,220	1,560	1,240
31	1,800	-	1,120	827	-	14,100	-	2,040	-	1,110	1,330	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	33,725	2,440	728	1,088	-	-
November	42,896	3,000	956	1,430	-	-
December	60,810	3,380	1,010	1,962	-	-
Calendar year 1939	902,648	15,300	600	2,473	1.00	13.62
January	33,230	1,540	742	1,072	-	-
February	39,652	2,980	752	1,367	-	-
March	86,765	14,100	776	2,799	-	-
April	424,760	31,500	3,590	14,160	-	-
May	83,730	3,960	1,870	2,701	-	-
June	70,961	5,030	375	2,365	-	-
July	51,420	2,570	1,070	1,659	-	-
August	29,963	1,560	684	967	-	-
September	34,772	2,650	828	1,159	-	-
Water year 1939-40	992,684	31,500	375	2,712	1.10	14.95

Peak discharge.- Apr. 2 (8:40 p.m.) 33,500 sec.-ft.

Note.- Monthly figures of discharge in second-feet per square mile and run-off in inches not published because of diversion and regulation.

Canaseraga Creek near Dansville, N. Y.

Location.- Water-stage recorder, lat. 42°34'15", long. 77°43'35" (revised), 400 feet upstream from highway bridge in Cumminsville and 2 miles northwest of Dansville, Livingston County. Datum of gage is 637.15 feet above mean sea level (Corps of Engineers, U. S. Army bench mark).
Drainage area.- 155 square miles.
Records available.- October 1938 to September 1940. July 1910 to December 1912, July 1915 to June 1917, and March 1919 to September 1938, at site 1¼ miles upstream. October 1917 to September 1919 at site 400 feet downstream, published as Canaseraga Creek at Cumminsville, N. Y.
Average discharge.- 18 years (1920-38) 142 second-feet (at former site 1¼ miles upstream).
Extremes.- Maximum discharge during year, 9,110 second-feet July 23 (gage height, 9.93 feet), from rating curve extended above 2,040 second-feet by logarithmic plotting on basis of slope-area determination; minimum, 19 second-feet Oct. 7 (gage height, 0.93 foot).
1910-12, 1915-17, 1919-40: Maximum discharge, that of July 23, 1940; minimum, 10 second-feet Aug. 9, 1934.
Revisions.- The maximum discharge for water year 1934-35 has been revised to 8,390 second-feet July 8 (gage height, 13.71 feet), from rating curve extended above 2,300 second-feet by logarithmic plotting, superseding figure published in Water-Supply Papers 773-E, 784, 799, 804, 824, 847, 854, and 874.
Remarks.- Records good except those for periods of ice effect, and those after July 23, which are fair.
Revisions.- Revised figures of discharge, in second-feet, for the high-water period in the water year 1934-35, superseding those published in Water-Supply Papers 773-E, 784, and 804, are given herein.

July 8	4,310	July 10	1,490	July 12	484	July 26	451
9	1,950	11	735	25	935		

Month	Maximum	Mean	Per square mile	Run-off in inches
July	4,310	438	2.86	3.30
Water year 1934-35	4,310	149	.974	13.22
Calendar year 1935	4,310	155	1.01	13.79

Discharge, in second-feet, October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	40	31	b40	29	b46	1,970	224	182	118	57	45
2	23	37	32	b38	29	b45	1,110	271	233	91	55	43
3	22	32	183	b37	30	b50	1,200	250	148	87	52	43
4	22	30	186	b36	30	b116	2,250	270	121	99	50	42
5	21	35	104	b35	31	b195	1,350	240	107	83	54	40
6	21	41	80	b35	34	b150	958	205	95	73	58	37
7	20	49	68	b34	44	b116	878	185	125	66	54	37
8	25	94	78	b34	58	b100	1,080	175	192	63	50	52
9	35	102	65	*b33	b36	b98	1,140	170	156	61	42	100
10	25	71	*70	b33	*b50	b78	656	155	130	61	37	57
11	31	67	133	b32	b72	b70	549	140	360	59	34	47
12	25	60	83	32	b92	b62	1,770	135	576	63	33	45
13	24	53	91	35	b135	b56	884	135	279	53	58	43
14	24	48	102	46	b102	b60	472	130	182	47	53	42
15	26	41	62	84	b74	b66	398	145	146	50	47	40
16	25	44	73	b72	b84	b60	369	140	123	63	45	43
17	24	40	67	b64	b74	b58	331	135	105	53	43	40
18	25	39	71	b56	b70	b195	482	121	95	49	43	40
19	24	38	67	b52	b96	770	375	114	97	47	48	42
20	24	36	212	b45	119	484	380	201	85	46	45	42
21	22	b36	230	b41	93	345	599	156	80	43	45	43
22	23	b35	118	b41	76	272	575	130	73	51	43	42
23	31	b34	102	b39	66	198	635	121	73	1,230	42	40
24	28	b33	86	b37	62	169	673	114	214	199	42	42
25	26	32	84	b36	64	154	622	112	207	114	43	131
26	30	30	73	b35	62	134	547	133	125	91	43	77
27	30	30	44	b33	56	122	422	118	101	77	43	60
28	72	32	b52	b33	52	151	335	118	111	66	43	52
29	63	31	b52	b32	49	699	271	186	121	64	42	48
30	45	30	b46	b31	-	*2,000	238	128	101	62	42	45
31	39	-	b42	b31	-	3,140	-	123	-	57	47	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	903	72	20	29.1	0.188	0.22
November	1,320	102	30	44.0	.284	.32
December	2,786	230	31	89.9	.580	.67
Calendar year 1939	52,247	3,590	16	143	.923	12.56
January	1,262	84	31	40.7	.263	.30
February	1,851	135	29	63.8	.412	.44
March	10,249	3,140	45	331	2.14	2.47
April	23,339	2,250	238	778	5.02	5.60
May	4,979	271	112	161	1.04	1.20
June	4,743	576	73	158	1.02	1.14
July	3,386	1,230	43	109	.703	.81
August	1,433	58	33	46.2	.298	.34
September	1,500	131	37	50.0	.323	.36
Water year 1939-40	57,751	3,140	20	158	1.02	13.87

Peak discharge.- Mar. 31 (7:40 p.m.) 4,870 sec.-ft.; Apr. 4 (5:30 p.m.) 2,960 sec.-ft.; Apr. 9 (2 a.m.) 1,490 sec.-ft.; Apr. 12 (5:30 a.m.) 3,290 sec.-ft.; July 23 (1:15 p.m.) 9,110 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

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 1940.

Average discharge.- 37 years, 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 1939 to September 1940

	Mean elevation of lake above low-water mark (feet)	Discharge in second-feet		Run-off in inches
		Mean	Per square mile	
October	-0.121	6.095	0.484	0.558
November	-.610	3.567	.283	.316
December	-.675	2.869	.228	.263
Calendar year 1939	+1.620	11.591	.920	12.488
January	-.633	3.549	.282	.325
February	-.348	5.167	.410	.442
March	+.643	10.121	.803	.926
April	+3.900	63.431	5.034	5.616
May	+3.380	15.654	1.242	1.432
June	+3.323	12.548	.996	1.111
July	+3.173	4.513	.358	.413
August	+2.712	8.700	.690	.796
September	+1.783	7.488	.594	.663
Water year 1939-40	+1.377	11.905	.945	12.861

Note.- Water-surface elevation on Dec. 31, 1939, was 1.24 feet lower than on Dec. 31, 1938, corresponding to a decrease in storage of 35,058,620 cubic feet, or a discharge of 1.112 second-feet for the year. This adjustment applied to the figure for the calendar year gives a mean discharge for the year of 10.479 second-feet, 0.832 second-foot per square mile, and run-off of 11.294 inches from drainage area.

Water surface elevation on Sept. 30, 1940, was 1.20 feet higher than that on Sept. 30, 1939, corresponding to an increase in storage of 34,900,968 cubic feet, or a discharge of 1.104 second-feet for the year. This adjustment applied to the figure for the water year gives a mean discharge for the year of 13.009 second-feet, 1.032 second-feet per square mile, and run-off of 14.047 inches from drainage area. No allowance has been made for losses by evaporation.

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.- 5,121 square miles.
Records available.- November 1933 to September 1940. 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, 35,000 second-feet Apr. 10 (gage height, 13.46 feet), includes mean daily discharge of canals; minimum (river only), 97 second-feet (regulated) Dec. 16 (gage height, 1.23 feet); minimum daily, 753 second-feet Sept. 14.
1933-40: Maximum discharge, 37,500 second-feet Mar. 28, 1936 (gage height, 13.10 feet), includes mean daily 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 period of no river gage heights and those for period of probable backwater in river channel, which are fair. 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 the 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 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	962	1,430	2,290	3,090	3,740	3,620	12,800	21,200	7,700	7,300	3,100	1,250
2	1,410	f1,680	2,200	2,990	3,650	2,800	16,200	20,000	7,300	7,300	3,250	1,030
3	760	f1,830	2,010	3,300	3,490	2,510	18,200	18,600	7,700	7,300	3,000	1,680
4	982	f1,480	3,090	3,420	3,260	3,020	20,900	18,500	7,200	6,500	2,650	1,770
5	994	1,220	3,320	3,150	3,860	3,480	25,300	17,900	7,100	7,200	2,950	1,430
6	976	1,400	3,170	2,970	4,010	3,370	28,100	16,900	f6,900	7,200	3,100	1,190
7	1,060	1,580	2,670	2,040	3,760	2,970	30,100	14,500	f5,900	7,000	3,050	1,320
8	907	1,850	2,310	3,000	3,740	3,060	32,200	13,600	f5,500	6,800	2,900	1,190
9	1,030	1,560	2,500	3,720	3,650	3,290	33,700	13,600	f5,500	6,300	2,900	1,490
10	1,060	1,560	2,030	3,650	3,430	2,950	33,600	13,300	f7,200	5,700	2,440	1,520
11	1,150	1,940	2,680	3,710	3,210	3,110	33,000	12,500	8,400	5,700	2,280	1,240
12	1,080	1,700	3,350	4,130	3,820	3,630	32,400	11,500	8,500	5,200	2,850	1,240
13	1,070	1,330	2,980	4,060	4,060	3,590	31,200	11,800	8,800	4,700	2,850	1,020
14	1,100	1,460	2,910	4,220	3,930	3,810	30,300	11,400	9,200	4,150	2,300	753
15	1,100	1,790	2,640	4,780	3,450	4,050	29,500	11,200	9,400	f4,000	2,080	1,100
16	1,080	1,980	2,090	4,880	3,950	3,840	28,600	11,200	8,200	f4,250	2,040	1,320
17	1,360	2,130	2,180	4,890	3,330	3,770	27,800	11,100	7,500	f3,900	2,100	965
18	820	2,180	2,730	4,540	3,080	3,790	28,000	11,000	7,100	3,800	1,900	1,310
19	968	2,410	3,010	4,490	3,620	4,270	27,700	10,300	7,300	3,700	1,900	1,320
20	1,180	2,300	3,110	4,340	4,330	4,350	27,200	9,990	7,100	3,550	1,680	1,310
21	1,470	2,630	3,530	4,100	4,450	4,610	27,000	9,830	7,200	3,250	1,820	1,020
22	1,280	2,600	3,410	3,980	4,490	4,730	27,300	9,510	7,200	3,500	1,720	761
23	1,180	1,920	3,720	4,490	4,330	5,520	27,400	9,260	7,100	3,750	1,430	1,490
24	1,200	2,980	2,980	4,300	4,030	4,890	26,900	8,900	7,500	3,700	1,230	1,760
25	1,070	2,220	2,650	4,220	3,650	6,470	26,400	8,720	7,800	3,600	904	1,440
26	1,330	1,590	3,410	4,060	4,010	6,040	25,800	8,250	7,400	3,850	1,660	1,530
27	1,780	2,400	4,250	3,650	4,330	5,830	25,100	8,590	7,400	3,550	1,470	1,470
28	1,620	2,430	3,920	3,780	3,720	5,680	24,200	8,720	7,300	3,350	1,620	1,300
29	1,540	2,410	3,660	4,050	3,410	5,390	23,300	8,650	7,000	3,550	1,290	827
30	1,620	2,120	3,260	4,180	-	6,920	22,200	8,440	7,000	3,700	1,440	1,610
31	1,200	-	2,370	3,910	-	9,300	-	7,910	-	3,400	1,290	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	36,359	1,780	780	1,173	0.229	0.26
November	58,110	2,980	1,220	1,937	.378	.42
December	90,430	4,250	2,010	2,917	.570	.66
Calendar year 1939	1,785,434	18,200	699	4,886	.954	12.96
January	120,110	4,890	2,040	3,875	.757	.87
February	109,990	4,490	3,080	3,793	.741	.80
March	134,960	9,300	2,510	4,354	.850	.98
April	802,400	33,700	12,800	26,750	5.22	5.82
May	376,370	21,200	7,910	12,160	2.37	2.73
June	222,400	9,400	5,500	7,413	1.45	1.62
July	150,750	7,300	3,250	4,863	.950	1.10
August	67,194	3,250	904	2,168	.423	.49
September	38,656	1,770	753	1,289	.252	.28
Water year 1939-40	2,208,229	33,700	753	6,033	1.18	16.03

f Incomplete gage-height record; discharge estimated.
Note.- Probable backwater in river channel June 2 to Aug. 22.

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 (levels by Corps of Engineers, U. S. Army).
Drainage area.- 124 square miles.
Records available.- February 1925 to September 1940. July 1908 to June 1909, at site 1½ miles downstream.
Average discharge.- 15 years (1925-40) 184 second-feet.
Extremes.- Maximum discharge during year, 4,300 second feet Mar. 31 (gage height, 5.20 feet); minimum, 5.1 second-feet Nov. 26 (gage height, 0.19 foot).
1925-40: 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 no gage-height record, which are fair. Cornell University diverted 238,913,000 gallons about a mile above station for water supply and thus reduced the mean discharge at the station 1.01 second-feet for the year.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 7-13)

0.3	10.4	0.7	40	1.2	99	1.6	223	3.0	1,200
.4	16.5	.8	49	1.3	121	1.8	320	3.5	1,710
.5	23.5	.9	59	1.4	149	2.0	434	4.0	2,340
.6	31.5	1.0	70	1.5	183	2.5	775	4.6	3,240

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a16	47	17	42	27	45	2,330	260	203	a340	41	31
2	a15	52	20	44	27	44	1,280	304	203	a200	37	30
3	a15	38	45	43	26	46	1,260	260	138	a220	34	26
4	a15	31	73	*42	26	100	*2,200	366	112	a820	32	24
5	a14	25	57	40	27	210	*2,700	285	96	a450	63	23
6	a14	28	a40	38	29	*175	1,540	207	88	a300	388	21
7	13	37	34	37	32	135	1,440	173	79	a220	112	20
8	12	34	32	36	39	120	2,280	152	74	a165	69	20
9	13	34	24	34	38	110	2,720	146	213	a170	52	32
10	13	31	41	32	42	92	1,240	129	259	a220	42	37
11	13	*32	102	31	64	76	799	119	129	a140	37	38
12	13	a30	57	31	125	76	910	114	127	a135	32	31
13	13	28	60	32	*140	80	666	106	119	108	34	31
14	12	24	52	35	92	80	a520	99	93	88	37	30
15	12	24	26	66	76	84	a420	99	82	78	32	29
16	12	24	*43	100	68	110	a400	a110	82	78	28	56
17	11	21	42	72	64	108	a380	a175	69	74	28	43
18	12	20	51	58	62	96	a600	a150	62	66	27	33
19	11	19	65	52	66	205	635	a135	60	68	30	a28
20	12	20	207	50	84	340	640	a400	56	67	33	a24
21	14	18	*385	49	76	280	1,210	624	53	70	30	a28
22	16	18	138	44	64	220	989	263	51	93	27	a24
23	25	19	93	*40	58	145	736	183	49	71	25	a21
24	23	17	102	38	54	120	680	152	85	61	24	a20
25	19	15	86	36	50	114	516	141	417	57	24	a110
26	24	14	76	34	48	108	422	266	228	52	24	a98
27	32	17	56	33	46	104	348	211	230	48	26	a60
28	39	19	50	31	47	116	294	338	a120	44	28	a50
29	47	18	52	30	46	225	255	241	a175	40	37	a42
30	35	*17	52	29	-	1,400	223	207	a130	70	31	a36
31	32	-	49	28	-	3,240	-	169	-	63	28	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	567	47	11	18.3	0.148	0.17
November	771	52	14	25.7	.207	.23
December	2,227	385	17	71.8	.579	.67
Calendar year 1939	51,292.6	2,860	7.9	141	1.14	15.39
January	1,307	100	28	42.2	.340	.39
February	1,643	140	26	56.7	.457	.49
March	8,404	3,240	44	271	2.19	2.52
April	30,633	2,720	223	1,021	8.23	9.18
May	6,584	624	99	212	1.71	1.97
June	3,882	417	49	129	1.04	1.16
July	4,666	820	40	151	1.22	1.41
August	1,492	388	24	48.1	.388	.45
September	1,096	110	20	36.5	.294	.33
Water year 1939-40	63,272	3,240	11	173	1.40	18.97

Peak discharge.- Mar. 31 (2:15 p.m.) 4,300 sec.-ft.; Apr. 5 (1 a.m.) 3,860 sec.-ft.; Apr. 8 (11 p.m.) 3,750 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage, occasional readings by observer, and records for Oswego Creek near Oswego and Tioughnioga River at Cortland.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 30.

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 1940.
Extremes.- Maximum discharge during year, 2,110 second-feet Mar. 31 (gage height, 5.31 feet), from rating curve extended above 650 second-feet by logarithmic plotting; minimum, 3.7 second-feet Sept. 7, 8 (gage height, 0.52 foot).
1937-40: Maximum discharge, that of Mar. 31, 1940; minimum, 1.8 second-feet Aug. 30, 31, Sept. 1, 2, 1939 (gage height, 0.42 foot).
Remarks.- Records good except those for periods of ice effect, no gage-height record, or sluggish intake action, all of which are fair.

Rating tables, water year 1939-40, except periods of ice effect or sluggish intake action (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 29						Mar. 30 to Sept. 30					
0.5	3.3	0.9	23	1.4	78	0.5	3.1	0.9	23	1.6	117
.6	6.4	1.0	31	1.6	110	.6	6.0	1.0	32	1.8	157
.7	10.8	1.1	40	1.8	148	.7	10.3	1.2	54	2.0	205
.8	16	1.2	51			.8	16	1.4	82	2.3	287

Mar. 30 to Sept. 30			
2.6	384		
3.0	547		
3.5	805		
4.2	1,260		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar..	Apr.	May	June	July	Aug.	Sept.
1	a5.6	16	5.4	12	5.6	13	360	64	128	38	7.2	6.4
2	a5.5	12	6.0	11	5.4	12	240	67	121	24	6.8	5.4
3	a5.4	9.8	32	10	5.2	14	235	66	87	50	6.4	5.1
4	a5.3	8.4	25	*9.2	5.2	46	500	94	68	72	6.4	4.8
5	a5.2	8.4	16	8.4	5.4	42	330	72	57	39	7.4	4.8
6	a5.1	11	13	8.0	7.6	*32	220	59	47	28	17	4.2
7	a5.1	11	12	7.6	12	28	190	53	40	23	13	4.0
8	4.8	9.3	12	7.2	8.8	26	380	50	37	20	8.9	4.0
9	5.1	8.4	9.8	6.4	8.4	24	320	50	40	32	7.2	9.3
10	4.2	7.6	14	6.0	11	22	175	41	36	26	6.4	7.2
11	a4.5	8.4	23	5.8	20	17	135	38	33	20	5.4	6.0
12	a4.2	8.0	16	6.0	42	17	155	34	41	22	5.1	5.4
13	3.9	7.6	14	6.4	*41	18	108	30	29	19	5.1	5.1
14	4.2	6.8	14	8.8	16	21	84	30	25	16	5.1	4.8
15	4.2	6.4	11	28	18	24	72	28	22	14	5.1	6.0
16	4.2	6.4	*11	16	16	23	66	39	21	14	4.5	9.8
17	3.9	6.4	11	13	16	20	60	34	18	13	4.8	7.2
18	3.9	6.4	12	11	15	26	78	29	17	11	5.1	5.4
19	3.9	6.4	12	10	17	87	64	28	17	11	5.1	4.8
20	4.5	6.0	*52	9.8	20	71	138	93	16	10	4.8	5.1
21	4.5	5.7	49	9.4	19	60	231	79	15	11	4.8	4.8
22	6.0	6.0	29	8.8	17	50	188	57	14	10	4.2	4.8
23	8.0	6.0	22	8.4	16	39	181	47	14	10	4.2	4.5
24	8.7	5.7	16	*8.0	15	37	162	40	33	11	4.2	5.0
25	6.8	5.1	18	7.2	14	34	134	52	50	9.3	4.0	28
26	9.8	5.1	16	6.8	13	33	113	143	33	9.8	5.1	14
27	9.3	5.1	13	6.4	12	30	96	104	29	9.3	5.1	8.4
28	13	5.4	13	6.0	12	34	80	452	27	8.9	8.0	7.2
29	11	5.4	14	6.0	13	144	70	162	28	8.0	7.2	6.4
30	8.0	5.4	13	5.8	-	*780	64	112	30	8.4	5.7	6.0
31	10	-	11	5.6	-	*1,250	-	100	-	7.6	5.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	187.8	13	3.9	6.06	0.165	0.19
November	225.6	16	5.1	7.52	.205	.23
December	535.2	52	5.4	17.3	.471	.54
Calendar year 1939	11,020.7	897	2.2	30.2	.823	11.16
January	279.0	28	5.6	9.00	.245	.28
February	425.6	42	5.2	14.7	.401	.43
March	3,074	1,250	12	99.2	2.70	3.11
April	5,229	500	60	174	4.74	5.29
May	2,347	452	28	75.7	2.06	2.38
June	1,175	128	14	39.1	1.07	1.19
July	605.3	72	7.6	19.5	.531	.61
August	194.4	17	4.0	6.27	.171	.20
September	203.9	28	4.0	6.80	.185	.21
Water year 1939-40	14,479.8	1,250	3.9	39.6	1.08	14.66

Peak discharge.- Mar. 30 (10:30 p.m.) 1,940 sec.-ft.; Mar. 31 (5:45 p.m.) 2,110 sec.-ft.; Apr. 4 (4:30 p.m.) 829 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Note.- Stage-discharge relation affected by ice Dec. 12, 15, Dec. 24 to Feb. 12, Feb. 14 to Mar. 4, Mar. 11-13, 24-26. Discharge for period of sluggish intake action, Mar. 30 to Apr. 19, computed on basis of several sets of simultaneous inside and outside gage readings.

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 by Corps of Engineers, U. S. Army).

Drainage area.- 189 square miles.

Records available.- November 1939 to September 1940. Records previouely collected at same site by Oswego Watershed Commission of Fulton, N. Y.

Extremes.- Maximum gage height observed during period, 9.09 feet Apr. 12, 13; minimum observed, 4.65 feet Feb. 8.

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 permanent stop log 9.8 feet long with top at elevation 683.96 feet extending across masonry arch opening under roadway. East outlet is 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 Watershed Commission, Fulton, N. Y., by operation of stop logs at east outlet. Capacity of lake not determined. Area of water surface, about 16.57 square miles at elevation 686 feet. Staff gage read twice daily.

Gage height, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	4.80	4.88	4.68	5.25	7.58	8.21	6.94	7.37	6.66	5.98
2		-	4.80	4.84	4.67	5.23	7.86	8.13	7.09	7.33	6.68	6.00
3		-	4.90	4.82	4.66	5.21	8.08	8.08	7.08	7.29	6.68	5.98
4		-	4.90	4.79	a4.69	5.27	8.28	8.03	7.09	7.28	6.67	5.97
5		-	4.90	4.79	a4.72	5.33	8.61	7.99	7.07	7.27	6.60	5.90
6		-	4.90	4.78	4.74	5.37	8.67	7.99	7.08	7.22	6.56	5.88
7		-	4.90	4.78	4.69	5.39	8.73	7.87	7.09	7.18	6.56	5.89
8		-	4.90	4.78	4.66	5.41	8.77	7.85	7.18	7.16	6.54	5.88
9		-	4.90	4.78	4.68	5.44	8.81	7.78	7.79	7.09	6.52	5.87
10		-	4.90	4.78	4.70	5.45	8.81	7.71	8.14	7.07	6.48	5.84
11		-	4.90	4.78	4.83	5.43	8.83	7.66	8.17	7.05	6.45	5.85
12		-	4.90	4.79	4.83	5.43	9.06	7.58	8.17	7.02	6.44	5.83
13		-	4.95	4.78	4.89	5.41	9.04	7.50	8.17	7.01	6.44	5.82
14		-	4.92	4.82	a4.94	5.46	8.99	7.44	8.08	6.98	6.43	5.79
15		-	4.95	4.78	5.03	5.45	8.89	7.44	7.99	6.98	6.38	5.78
16		-	4.96	4.76	5.03	5.52	8.87	7.38	7.92	6.95	6.36	5.76
17		-	4.92	4.74	5.09	5.45	8.78	7.33	7.84	6.90	6.38	5.74
18		-	4.91	4.77	5.04	5.47	8.73	7.26	7.77	6.87	6.30	5.72
19		-	4.82	4.76	5.06	5.59	8.64	7.23	7.67	6.86	6.28	5.71
20		-	4.93	4.74	a5.10	5.61	8.54	7.27	7.58	6.86	6.28	5.70
21		4.91	4.98	4.76	a5.12	5.67	8.59	7.19	7.56	6.78	6.23	5.68
22		4.91	4.90	4.70	a5.15	5.73	8.68	7.18	7.54	6.79	6.21	5.66
23		4.90	4.92	4.68	a5.21	5.76	8.67	7.16	7.49	6.78	6.17	5.67
24		4.85	4.92	4.68	5.25	5.77	8.67	7.13	7.48	6.77	6.14	5.66
25		4.85	4.93	4.70	5.25	5.79	8.61	7.07	7.51	6.77	6.10	5.68
26		4.85	4.92	4.68	5.23	5.78	8.54	7.09	7.53	6.79	6.06	5.66
27		4.85	4.91	4.68	5.21	5.77	8.49	7.18	7.49	6.78	6.06	5.66
28		4.85	4.90	4.70	5.25	5.79	8.49	7.11	7.47	6.78	6.05	5.64
29		4.82	4.90	4.67	5.23	5.78	8.34	7.06	7.41	6.78	6.06	5.57
30		4.80	4.88	4.67	-	6.11	8.29	7.01	7.38	6.78	6.00	5.57
31		-	4.88	4.67	-	6.88	-	6.98	-	6.70	6.00	-

a Determined on basis of records for Canandaigua Lake outlet at Chapin.

Canandaigua Lake outlet at Chapin, N. Y.

Location.- Water-stage recorder, lat. 42°55'00", long. 77°14'00", in Chapin, Ontario County, about 500 feet upstream from highway bridge 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.- 199 square miles.

Records available.- November 1939 to September 1940.

Extremes.- Maximum discharge during period, 1,080 second-feet (regulated) Apr. 12 (gage height, 4.64 feet); minimum, 27 second-feet (regulated) Nov. 28 (gage height, 1.45 feet).

Remarks.- Records good except those for period of ice effect or backwater from weeds and aquatic growth, 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	29	30	29	44	430	652	283	286	106	70
2		-	29	30	29	43	520	645	190	266	108	68
3		-	34	30	29	42	614	621	170	257	104	70
4		-	30	30	29	45	753	606	160	252	100	68
5		-	30	30	29	49	791	584	160	243	98	66
6		-	29	30	30	49	843	561	155	243	96	66
7		-	30	30	29	50	860	536	155	240	94	64
8		-	30	30	29	50	899	514	180	235	94	66
9		-	29	30	29	52	947	494	365	229	94	66
10		-	29	30	31	52	947	473	369	229	94	64
11		-	30	30	34	50	943	452	504	232	92	62
12		-	31	30	32	50	1,040	435	518	232	92	62
13		-	30	30	30	50	1,020	418	508	216	92	60
14		-	30	30	31	52	1,010	402	480	186	90	60
15		-	30	30	32	52	912	389	459	168	90	62
16		-	30	30	32	54	899	382	435	166	90	62
17		-	30	29	32	52	895	366	408	158	90	60
18		-	30	30	32	52	895	356	395	154	90	60
19		-	31	30	32	56	851	344	376	151	88	60
20		-	35	29	33	56	825	369	350	151	86	58
21		-	36	30	36	56	895	344	328	147	82	58
22		-	33	29	38	60	890	331	313	144	80	58
23		30	32	29	41	60	864	325	298	142	78	56
24		29	31	29	44	60	847	319	319	147	74	56
25		28	31	29	44	62	830	319	319	144	74	58
26		28	30	29	43	60	800	363	301	142	72	56
27		28	30	29	42	60	770	331	289	140	74	56
28		28	30	29	44	62	745	325	283	125	74	56
29		28	30	29	43	64	712	313	277	116	76	56
30		28	30	29	-	100	676	310	277	112	74	56
31		-	30	29	-	250	-	307	-	110	70	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	-	-	-	-		
November 23-30	227	30	28	28.4		
December	949	36	29	30.6		
Calendar year	-	-	-	-		
January	918	30	29	29.6		
February	988	44	29	34.1		
March	1,894	250	42	61.1		
April	24,923	1,040	430	831		
May	13,186	652	307	425		
June	9,624	518	155	321		
July	5,762	286	110	186		
August	2,714	108	70	87.5		
September	1,840	70	56	61.3		
Water year	-	-	-	-		

Note.- Stage-discharge relation affected by backwater from weeds and aquatic growth Nov. 23 to Dec. 25, June 4-8, July 28 to Sept. 30; affected by backwater from ice Dec. 26 to Apr. 2.

Owasco Lake outlet near Auburn, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°56'45", long. 76°36'05", 2¾ 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 1940.
Average discharge.- 27 years, 283 second-feet.
Extremes (regulated).- Maximum discharge during year, 2,090 second-feet Apr. 9 (gage height, 4.88 feet); minimum, 6.3 second-feet Oct. 15 (gage height, 1.43 feet); minimum daily, 14 second-feet Oct. 9.
1912-40: 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 100 second-feet, which are good, and those for periods of no gage-height record, which are fair. Diurnal fluctuation 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 1939-40 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 16)

Oct. 1 to Nov. 15		Nov. 17 to Sept. 30					
1.5	14	1.5	18	2.2	181	4.0	1,580
1.6	27	1.6	33	2.4	265	4.5	1,890
1.7	43	1.7	50	2.7	445	4.8	2,050
		1.9	90	3.1	750		
		2.0	115	3.5	1,110		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	23	40	28	43	127	995	777	284	281	207	135
2	30	21	39	32	43	127	1,190	671	270	280	191	139
3	19	22	48	33	40	148	1,220	643	335	271	186	135
4	22	20	41	34	39	174	1,380	628	389	276	189	133
5	23	22	39	34	42	182	1,700	608	334	348	194	133
6	20	27	39	35	43	188	1,790	532	277	397	182	133
7	15	21	38	38	44	190	1,810	476	272	394	185	130
8	15	19	39	42	41	192	1,870	462	278	402	178	130
9	14	19	31	38	40	183	2,040	424	389	413	168	133
10	22	17	35	41	54	181	2,040	385	407	468	162	131
11	18	15	37	39	52	191	1,980	380	408	451	162	125
12	15	15	33	41	47	196	1,920	391	396	362	163	128
13	38	17	36	40	41	198	1,840	392	399	292	165	123
14	32	16	34	43	40	203	1,740	384	392	287	164	117
15	29	15	34	45	40	203	1,660	403	391	308	165	118
16	34	23	33	34	39	206	1,520	408	401	287	164	112
17	32	42	34	39	40	224	1,410	391	400	283	160	109
18	31	42	37	40	42	225	1,370	392	405	285	159	107
19	30	40	36	39	98	234	1,320	405	410	291	162	106
20	31	42	55	39	77	221	1,260	406	339	299	158	111
21	28	40	43	39	63	229	1,300	391	289	304	157	95
22	27	39	40	41	65	211	1,360	402	287	306	158	97
23	31	37	37	39	64	256	1,350	391	284	a310	157	100
24	26	42	34	40	62	300	1,330	384	309	a315	156	116
25	27	41	34	43	62	306	1,290	380	293	a310	151	108
26	35	42	35	44	69	316	1,250	384	297	a305	154	74
27	30	46	34	40	89	321	1,190	327	296	a300	149	100
28	29	41	34	45	114	340	1,140	269	299	a295	153	93
29	20	40	33	47	117	388	1,070	270	289	a270	148	84
30	22	40	32	44	-	461	960	273	279	a215	146	91
31	26	-	32	45	-	661	-	278	-	207	139	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	796	38	14	25.7	-	-
November	886	46	15	29.5	-	-
December	1,146	55	31	37.0	-	-
Calendar year 1939	77,109	929	14	211	1.01	13.79
January	1,221	47	28	39.4	-	-
February	1,650	117	39	56.9	-	-
March	7,582	661	127	245	-	-
April	44,295	2,040	960	1,476	-	-
May	13,307	777	269	429	-	-
June	10,098	410	270	337	-	-
July	9,812	468	207	317	-	-
August	5,132	207	139	166	-	-
September	3,446	139	74	115	-	-
Water year 1939-40	99,371	2,040	14	272	1.31	17.79

a No gage-height record; discharge determined on basis of known range of stage, observer's readings, weather and lake records.
Note.- Decrease in storage in Owasco Lake during calendar year 1939, about 643,210,500 cubic feet (equivalent mean discharge, 20.4 sec.-ft.; run-off, 1.33 inches); decrease in elevation, 2.24 ft. Increase during water year 1939-40, about 146,445,000 cubic feet (equivalent mean discharge, 4.63 sec.-ft.; run-off, 0.30 inch); increase in elevation, 0.51 ft.

Onondaga Creek at Syracuse, N. Y.

Location.- Water-stage recorder and steel plate weir, lat. 43°00'35", long. 76°09'00", about 75 feet upstream from end of channel improvement, 300 feet upstream from concrete highway bridge on Ballantyne Road and 2 miles south of the center of Syracuse, Onondaga County. Datum of gage is 401.25 feet above mean sea level (general adjustment of 1929).

Drainage area.- 92.2 square miles.

Records available.- November 1939 to September 1940.

Extremes.- Maximum discharge during period, 2,320 second-feet Apr. 1 (gage height, 7.45 feet); minimum, 3.5 second-feet (regulated) Nov. 22 (gage height, 1.78 feet); minimum daily discharge, 14 second-feet (regulated) Aug. 25, 26, Sept. 7, 20, 21.

Remarks.- Records good except those for periods of ice effect or no or faulty gage-height record, which are fair. Diurnal fluctuation at low and medium stages by mills.

Rating tables, period Nov. 8, 1939 to September 1940, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Nov. 8 to Dec. 3		Dec. 4 to Sept. 30					
2.1	14.7	2.1	10.0	2.7	77	5.1	778
2.2	20.1	2.2	16.5	2.9	110	5.8	1,140
2.3	27	2.3	24.7	3.2	176	6.4	1,510
2.4	36	2.4	35.3	3.8	335	6.9	1,870
2.5	48	2.5	47.7	4.5	544		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	a16	35	26	80	1,750	252	107	117	26	19
2		-	18	33	25	73	S05	295	95	a90	26	18
3		-	41	32	25	76	787	257	83	a96	25	17
4		-	64	31	25	180	1,040	253	76	a180	25	17
5		-	35	*30	26	221	1,720	236	68	a110	24	17
6		-	27	29	28	173	1,030	201	62	84	29	16
7		-	24	28	*35	145	971	178	57	73	27	14
8		23	28	28	38	128	1,110	161	57	a66	24	16
9		24	26	27	37	119	1,720	156	178	a64	22	19
10		21	27	26	40	103	937	142	164	a68	21	21
11		27	35	26	120	93	629	134	104	a64	21	20
12		33	23	26	125	*87	648	130	106	119	19	18
13		28	25	27	130	94	542	120	86	91	19	18
14		25	24	29	110	98	425	115	78	64	20	17
15		22	21	62	90	115	368	125	72	53	20	17
16		22	22	66	*78	121	368	154	59	53	19	17
17		21	*26	58	72	110	340	180	56	52	18	17
18		21	33	52	68	102	396	150	51	44	19	16
19		21	31	48	80	221	428	127	69	42	18	16
20		20	44	45	160	237	351	246	58	40	19	14
21		19	122	43	156	193	642	208	54	71	18	14
22		18	67	41	135	177	790	145	50	59	18	15
23		17	54	39	120	139	600	120	49	44	16	15
24		19	49	37	114	119	582	a104	71	41	15	15
25		a18	45	35	110	127	496	105	125	40	14	46
26		a18	42	33	96	116	430	a170	76	44	a14	32
27		a18	40	31	88	115	356	153	83	36	a15	22
28		a16	38	30	94	113	308	119	67	35	18	20
29		a17	36	29	89	173	274	a106	89	31	19	18
30		a16	36	28	-	746	248	a102	85	31	17	18
31		-	35	27	-	1,870	-	99	-	28	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	-	-	-	-	-	-
November S-30	484	33	16	21.0	0.228	0.20
December	1,154	122	16	37.2	.403	.46
Calendar year	-	-	-	-	-	-
January	1,111	66	26	35.8	.388	.45
February	2,339	160	25	80.7	.875	.94
March	6,464	1,870	73	209	2.27	2.62
April	21,089	1,750	248	703	7.62	8.50
May	5,043	295	99	163	1.77	2.04
June	2,435	178	49	81.2	.881	.98
July	2,030	180	28	65.5	.710	.82
August	622	29	14	20.1	.218	.25
September	559	46	14	18.6	.202	.23
Water year	-	-	-	-	-	-

Peak discharge.- Apr. 1 (2:10 a.m.) 2,320 sec.-ft.

* Winter discharge measurement made on this day.

a No or incomplete gage-height record; discharge computed on basis of recorded range of stage, and records for Limestone Creek at Fayetteville.

Note.- Stage-discharge relation affected by ice Dec. 12, 24-28, Dec. 30 to Feb. 28.

Limestone Creek at Fayetteville, N. Y.

Location.- Water-stage recorder, lat. 43°01'45", long. 76°00'50", in village of Fayetteville, Onondaga County, 100 feet downstream from bridge on Genesee Street and 8 miles upstream from mouth. Datum of gage is 427.62 feet above mean sea level (levels by Corps of Engineers, U. S. Army). Prior to Nov. 13, 1939, staff gage at same site and datum.

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 1940.

Extremes.- Maximum discharge during period, 3,470 second-feet Mar. 31 (gage height, 8.07 feet); maximum gage height, 8.5 feet Mar. 31 (ice jam); minimum discharge, 14 second-feet (regulated) Aug. 10 (gage height, 2.88 feet).

Remarks.- Records good except those for periods of ice effect or incomplete gage heights, which are fair. Staff gage read to hundredths Nov. 3-13. Discharge regulated by canal diverting water from Limestone Creek about 3 miles upstream and returning it to creek about 400 feet upstream from station, and by DeRuyter Reservoir, which takes water from 15.7 square miles of the Middle Branch of Tioughnioga Creek Basin and discharges it into head of Limestone Creek. Seasonal regulation also results from DeRuyter Reservoir.

Rating tables, for period Nov. 3 to Sept. 30, 1940, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Nov. 3 to Mar. 31						Apr. 1 to Sept. 30			
2.9	15	3.4	111	5.0	836	3.0	24.5	3.4	106
3.0	24.5	3.7	204	5.8	1,445	3.1	38	3.7	201
3.1	39	4.0	312	6.6	2,125	3.2	56	4.0	312
3.2	59	4.5	541	7.4	2,820	3.3	79		

Note.- Same as preceding table above 4.0 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.'	Apr.	May	June	July	Aug.	Sept.
1		-	f23	64	45	91	1,640	230	110	162	41	37
2		-	26	62	45	86	866	279	120	110	41	36
3		30	64	60	43	100	831	219	97	120	40	33
4		30	98	*57	43	220	1,530	216	94	335	36	31
5		32	59	56	45	255	1,500	190	84	195	44	31
6		36	49	54	*49	211	854	161	75	142	63	30
7		38	49	52	67	177	853	143	72	112	46	30
8		43	55	50	72	150	1,240	129	70	92	40	33
9		51	39	50	67	137	1,500	121	178	87	37	45
10		51	57	49	72	123	763	110	121	95	33	42
11		62	72	47	167	117	565	102	99	85	37	39
12		53	38	47	180	103	637	100	114	173	36	37
13		51	57	52	185	106	450	96	91	109	36	38
14		39	*55	53	165	115	362	108	86	81	37	37
15		29	39	109	145	140	336	115	76	71	35	36
16		33	43	116	130	169	331	148	76	74	34	37
17		32	51	100	118	154	306	182	64	71	34	36
18		30	64	86	*107	140	465	152	65	63	33	35
19		32	66	76	120	211	412	131	71	60	35	35
20		30	139	70	213	205	335	247	62	62	36	35
21		27	252	65	195	176	726	207	63	78	35	35
22		29	111	64	163	159	695	160	61	68	34	37
23		27	84	62	137	132	564	138	57	58	33	35
24		26	76	55	122	114	545	129	86	55	32	37
25		26	74	56	114	128	460	122	193	54	31	71
26		26	72	54	103	121	382	178	106	57	30	57
27		26	70	52	93	120	311	161	107	50	30	44
28		f22	66	50	101	120	266	136	88	47	33	41
29		24	66	49	91	170	240	124	146	46	38	37
30		f22	66	47	-	1,050	212	117	128	46	34	36
31		-	64	47	-	2,740	-	106	-	44	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	-	-	-	-		
November 3-30	957	62	a22	34.2		
December	2,146	252	a23	69.2		
Calendar year	-	-	-	-		
January	1,911	116	47	61.6		
February	3,197	213	43	110		
March	8,040	2,740	86	259		
April	20,177	1,640	212	673		
May	4,757	279	96	153		
June	2,862	193	57	95.4		
July	2,902	335	44	93.6		
August	1,137	63	30	36.7		
September	1,143	71	30	38.1		
Water year	-	-	-	-		

Peak discharge.- Mar. 31 (6:30 p.m.) 3,470 sec.-ft.

* Winter discharge measurement made on this day.

f Gage-height record incomplete; discharge computed from partly estimated gage heights.

Note.- Stage-discharge relation affected by ice Dec. 24-28, Dec. 31 to Jan. 3, Jan. 5, 8, 11, 12, 16-20, Jan. 26 to Feb. 6, Feb. 14-16.

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 1940.

Average discharge.- 17 years (1923-40), 541 second-feet.

Extremes.- Maximum discharge during year, 7,690 second-feet Apr. 18 (gage height, 6.63 feet); minimum, 21 second-feet (regulated) Aug. 17, 30 (gage height, 0.24 foot).
1923-40: 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, 10 second-feet (regulated) Sept. 30, 1937 (gage height, 0.05 foot).

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

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 4				Dec. 4 to Sept. 30					
0.5	39	1.4	215	0.2	18.5	1.1	138	3.4	1,500
.6	49	1.7	323	.3	24.5	1.3	194	4.0	2,200
.8	75	2.1	510	.4	32	1.6	302	4.7	3,240
1.0	110	2.5	760	.5	41	2.0	478	5.3	4,320
1.2	157	2.8	980	.7	64	2.4	698	5.9	5,700
				.9	95	2.9	1,050		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	153	307	86	150	90	118	756	2,710	286	485	80	67
2	122	292	118	145	90	116	801	4,230	297	318	63	100
3	82	225	558	135	88	120	852	2,850	286	226	59	68
4	61	171	929	130	88	230	1,240	2,020	219	244	48	51
5	49	147	497	124	88	321	1,560	1,600	172	215	55	47
6	45	154	353	120	92	337	1,550	1,390	138	157	75	39
7	49	174	307	114	118	312	1,740	1,170	116	129	57	34
8	54	283	490	110	160	260	2,750	1,040	122	96	61	30
9	54	578	383	106	155	230	4,160	818	377	99	45	76
10	56	379	394	102	155	205	3,090	674	320	78	42	108
11	398	514	409	100	240	185	2,770	586	205	89	34	99
12	344	462	205	98	290	170	3,400	509	187	175	29	79
13	246	327	230	96	330	160	2,230	439	174	134	29	70
14	340	186	*192	125	300	155	1,520	401	173	108	36	80
15	266	175	145	179	*270	220	1,260	412	131	75	25	60
16	185	190	169	*182	245	252	1,500	716	157	89	22	65
17	132	235	178	165	220	245	2,150	842	119	105	32	54
18	100	194	276	150	200	231	5,480	710	162	83	27	45
19	83	189	264	140	190	223	4,600	536	1,320	67	28	40
20	72	117	782	130	195	203	3,270	789	555	66	37	35
21	65	102	914	125	190	189	2,380	710	293	200	49	44
22	76	119	459	120	180	183	1,710	497	207	280	33	67
23	123	86	420	116	165	175	1,290	389	a146	160	30	59
24	119	78	326	112	150	170	1,170	329	a126	93	29	138
25	91	68	290	108	140	165	1,190	296	a226	112	28	924
26	129	64	250	104	130	165	1,290	721	a893	99	26	517
27	194	74	220	100	124	160	1,360	853	a588	77	25	257
28	320	89	200	96	122	160	1,740	575	a364	65	25	157
29	413	86	185	94	120	191	2,030	444	a447	57	23	114
30	280	80	170	92	-	302	2,400	351	466	122	21	88
31	218	-	160	92	-	573	-	290	-	124	39	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,919	413	45	159	0.841	0.97
November	6,145	578	64	205	1.08	1.20
December	10,559	929	86	341	1.80	2.08
Calendar year 1939	141,747	3,820	15	388	2.05	27.88
January	3,760	182	92	121	.640	.74
February	4,925	330	88	170	.899	.97
March	6,724	573	116	217	1.15	1.33
April	63,279	5,480	756	2,109	11.16	12.45
May	29,897	4,230	290	964	5.10	5.88
June	9,272	1,320	116	309	1.63	1.82
July	4,427	485	57	143	.757	.87
August	1,210	80	21	39.0	.206	.24
September	3,612	924	30	120	.635	.71
Water year 1939-40	148,729	5,480	21	406	2.15	29.26

Peak discharge.- Apr. 18 (7:15 p.m.) 7,690 sec.-ft.; May 2 (9 a.m.) 5,150 sec.-ft.
* Winterdischarge measurement made on this day.
a No gage-height record or record incomplete; discharge estimated.
Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 17 to Mar. 4, Mar. 8-15, and 23-27.

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 mouth of Sugar River and 2 miles northeast of Boonville, Oneida County.

Drainage area.- 295 square miles.

Records available.- February 1911 to September 1940.

Average discharge.- 29 years, 656 second-feet (not adjusted for storage).

Extremes.- Maximum discharge during year, 4,870 second-feet Apr. 19 (gage height, 8.90 feet); minimum discharge, 75 second-feet (regulated) Aug. 24 (gage height, 3.53 feet).
1911-40: 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 no gage-height record, which are fair. Flow partly regulated by storage in 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 table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

3.6	85	4.5	311	6.9	1,900
3.8	119	4.9	475	7.8	2,900
4.0	162	5.4	736	8.4	3,840
4.2	214	6.1	1,200	8.8	4,650

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	504	305	390	330	390	960	2,550	536	543	228	258
2	174	507	272	390	330	380	1,100	2,870	528	617	198	279
3	127	442	493	390	330	390	1,300	2,840	508	682	176	240
4	114	346	681	380	330	470	1,450	2,360	486	654	162	221
5	101	328	567	370	330	560	1,600	1,970	454	675	170	257
6	96	335	474	370	330	540	1,890	1,680	434	528	191	246
7	133	352	*468	360	350	520	1,920	1,180	380	403	222	237
8	137	411	481	360	400	460	2,160	915	228	339	197	232
9	134	540	456	360	420	*420	3,100	790	311	298	162	278
10	148	433	505	350	400	400	3,180	693	442	274	142	285
11	332	482	470	350	450	400	2,750	637	391	264	139	272
12	356	511	413	340	520	390	3,220	624	321	408	140	259
13	289	452	455	*340	500	390	2,900	597	302	438	125	250
14	271	387	406	360	480	390	2,150	582	272	321	122	205
15	262	483	333	400	460	420	1,640	579	259	249	188	186
16	251	471	366	430	450	440	1,590	576	255	228	152	173
17	246	474	352	430	440	440	1,980	593	234	231	125	184
18	239	450	338	420	430	420	3,220	594	244	216	117	218
19	236	448	331	400	420	400	4,540	554	945	191	118	212
20	229	418	500	390	*430	410	3,440	604	1,040	200	140	211
21	228	405	728	380	430	410	2,640	629	637	703	130	212
22	236	406	613	370	420	400	2,240	588	434	1,020	118	217
23	234	390	552	370	420	380	1,860	567	345	697	102	209
24	231	367	500	360	410	370	1,530	539	344	535	a99	235
25	222	366	470	360	410	360	1,440	527	558	618	a97	504
26	249	398	450	360	400	360	1,590	768	600	496	94	477
27	295	388	430	350	400	350	1,650	932	580	355	93	383
28	331	374	420	350	400	360	1,810	795	587	279	103	344
29	411	353	410	340	390	380	2,050	657	694	238	195	317
30	366	328	400	340	-	500	2,290	577	633	278	189	292
31	348	-	400	340	-	860	-	538	-	266	208	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,293	411	96	235	0.797	0.92
November	12,549	540	328	418	1.42	1.58
December	14,039	728	272	453	1.54	1.78
Calendar year 1939	204,111	3,760	78	559	1.89	25.73
January	11,500	430	340	371	1.26	1.45
February	11,810	520	330	407	1.38	1.49
March	13,360	860	350	431	1.46	1.68
April	65,190	4,540	960	2,173	7.37	8.22
May	30,905	2,870	527	997	3.38	3.90
June	13,982	1,040	228	466	1.58	1.76
July	13,244	1,020	191	427	1.45	1.67
August	4,642	228	93	150	.508	.59
September	7,893	504	173	263	.892	1.00
Water year 1939-40	206,407	4,540	93	564	1.91	26.04

Peak discharge.- Apr. 9 (11:30 p.m.) 3,430 sec.-ft.
* Winter discharge measurement made on this day.
a Gage-height record incomplete; discharge estimated.
Note.- Stage-discharge relation affected by ice Dec. 25 to Apr. 5.

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 1940.
Average discharge.- 20 years, 3,844 second-feet.
Extremes (regulated).- Maximum discharge during year, 19,300 second-feet Apr. 12 (gage height, 7.85 feet); minimum, 34 second-feet Aug. 11 (gage height, -0.09 foot); minimum daily discharge, 626 second-feet Aug. 25.
1920-40: 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 discharge, 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, which are good. Flow partly regulated by storage in 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 by mills and power plants in Watertown and above.

Rating tables, water year 1939-40, except periods of ice effect, (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 4				Dec. 4 to Sept. 30					
1.3	859	2.2	2,120	1.0	584	2.3	2,260	6.0	12,100
1.5	1,070	2.5	2,680	1.3	869	3.0	3,610	7.0	15,800
1.7	1,320			1.6	1,210	4.0	5,880	7.8	19,100
1.9	1,610			1.9	1,610	5.0	8,710		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,160	1,880	1,120	1,400	1,500	1,540	4,460	9,530	2,410	2,390	1,530	1,130
2	1,230	2,040	1,020	1,400	1,400	1,640	6,050	11,100	2,370	2,600	1,590	1,110
3	1,620	2,430	1,220	1,500	1,400	1,150	6,880	13,400	2,510	2,630	1,900	1,630
4	1,480	1,950	2,730	1,450	1,300	1,160	7,360	14,900	2,420	2,260	1,090	1,690
5	1,360	1,540	3,230	1,500	1,240	1,650	8,190	14,300	2,090	2,050	862	1,620
6	1,450	1,420	2,850	1,400	1,290	2,030	9,300	12,600	1,810	2,330	988	1,360
7	1,270	1,490	2,380	1,300	1,430	2,200	11,600	10,900	1,630	2,170	1,470	1,400
8	958	1,670	2,700	1,250	1,340	2,220	15,400	9,670	1,480	1,630	1,300	1,080
9	894	2,010	1,940	1,250	1,550	2,100	18,600	8,430	1,360	1,770	1,730	984
10	1,110	2,460	2,410	1,400	1,610	1,660	18,400	7,270	1,190	1,590	1,530	1,490
11	1,350	2,300	*2,740	1,250	1,340	1,800	18,400	6,100	1,500	2,480	644	1,040
12	1,740	2,450	2,070	1,300	1,460	1,930	19,100	5,060	1,910	2,180	948	1,440
13	1,970	2,620	2,020	1,300	1,800	1,980	18,100	4,320	1,850	1,880	802	1,540
14	1,920	2,250	1,960	1,200	2,100	1,690	16,500	4,060	2,010	1,860	1,000	1,280
15	1,510	1,600	1,640	1,250	2,150	1,710	14,500	3,420	2,700	1,560	1,000	958
16	1,350	1,670	1,490	*1,500	2,050	1,690	12,300	3,380	2,010	1,610	1,210	810
17	1,410	1,720	1,310	1,900	1,950	*1,560	11,700	3,760	1,620	1,480	1,340	1,080
18	1,420	1,820	1,560	1,850	1,900	*1,780	12,600	4,120	1,870	1,520	1,090	1,110
19	1,310	1,550	1,600	1,750	1,670	1,850	14,900	3,780	1,900	1,640	818	1,180
20	1,180	1,510	2,250	1,800	*1,860	1,860	16,900	3,500	2,600	1,660	935	1,170
21	1,140	1,350	3,690	1,800	1,930	1,810	17,600	3,500	2,970	1,230	1,070	1,200
22	935	1,450	3,200	1,650	2,040	1,860	16,000	3,550	2,280	2,720	1,020	1,320
23	904	1,360	2,600	1,900	1,790	1,870	13,900	3,330	1,770	3,880	1,200	1,220
24	936	1,240	2,100	1,750	1,780	1,590	11,800	2,620	1,740	3,700	1,280	1,470
25	1,060	1,080	1,700	1,650	1,420	1,470	9,960	2,590	1,750	2,910	626	1,450
26	1,100	962	1,550	1,600	1,500	1,490	8,840	2,510	2,460	2,700	1,060	2,120
27	1,180	984	1,550	1,550	1,720	1,590	7,930	3,630	3,050	2,660	924	2,490
28	1,270	1,000	1,750	1,450	1,570	1,620	7,640	3,670	2,990	2,140	1,140	2,180
29	1,370	1,060	1,750	1,200	1,610	1,650	7,670	3,440	2,880	1,680	1,210	1,510
30	1,490	1,170	1,700	1,300	-	2,200	8,360	3,040	2,280	1,740	1,050	1,340
31	1,720	-	1,550	1,500	-	2,710	-	2,690	-	2,020	1,110	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	40,817	1,970	894	1,317	-	-
November	50,036	2,620	962	1,668	-	-
December	63,580	3,690	1,020	2,051	-	-
Calendar year 1939	1,125,743	15,600	137	3,084	1.64	22.30
January	46,200	1,900	1,200	1,490	-	-
February	47,700	2,150	1,240	1,645	-	-
March	55,060	2,710	1,150	1,776	-	-
April	370,940	19,100	4,460	12,360	-	-
May	188,190	14,900	2,510	6,071	-	-
June	63,410	5,050	1,190	2,114	-	-
July	66,650	5,880	1,230	2,150	-	-
August	38,467	1,900	626	1,144	-	-
September	41,182	2,490	810	1,373	-	-
Water year 1939-40	1,069,232	19,100	626	2,921	1.56	21.22

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 22 to Jan. 12, Jan. 16 to Feb. 4 and Feb. 13-18.

Mill Creek sluiceway at Boonville, N. Y.

Location.- Water-stage recorder, lat. 43°29'10", long. 75°19'40", about 500 feet upstream from Schuyler Street, Boonville, Oneida County, and a quarter of a mile upstream from confluence with Mill Creek.

Records available.- October 1933 to September 1940 (discontinued).

Extremes.- Maximum discharge recorded during year, 39 second-feet Sept. 17 (gage height, 0.77 foot); minimum recorded, 0.1 second-foot Nov. 21, 23, 24, 25 (gage height, 0.03 foot) during period of no diversion.

1933-40: Maximum discharge, 146 second-feet Oct. 3, 1934; maximum gage height, 2.86 feet sometime during period Dec. 11-16, 1933 (ice jam); no flow during periods of no diversion.

Remarks.- Records good except those for periods of no or faulty gage-height record, which are fair. The sum of this record and that of Black River Canal (flowing south) represents the total diversion from Black River at Forestport through Forestport feeder and includes also the run-off from about 14 square miles tributary to the canal system and Mill Creek. This record shows the amount of water returned to Black River.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	0.9	0.2				-	7.1	1.9	1.6	1.9	2.0
2	1.8	26	-				-	8.9	2.9	1.5	1.9	2.1
3	1.8	5.3	-				-	6.7	2.7	1.5	1.9	1.9
4	1.8	1.3	-				-	7.7	2.7	a1.6	1.9	1.9
5	1.6	1.3	-				-	6.3	2.5	a1.6	1.9	3.0
6	1.6	1.3	-				-	5.1	2.3	a1.8	1.9	7.7
7	1.5	1.3	-				-	4.3	2.1	1.8	1.9	2.7
8	1.5	1.3	†.6				-	3.9	2.3	1.8	1.9	1.6
9	1.5	1.3	-				-	3.6	2.1	1.8	1.9	3.1
10	1.6	1.2	-				-	3.2	2.1	1.8	1.9	7.2
11	1.3	1.2	-				†14	3.2	1.8	1.8	1.9	6.4
12	1.1	1.2	-				-	3.2	1.6	a1.8	1.9	4.5
13	1.1	1.2	-	†0.2			-	2.8	1.5	a1.8	1.9	3.6
14	1.1	1.2	-				-	1.0	1.4	a1.8	2.1	3.6
15	1.1	1.2	-				-	.8	1.2	a1.8	2.1	2.2
16	1.0	8.1	-				-	.6	1.1	1.8	2.1	1.4
17	1.0	1.6	-				-	.6	1.1	1.8	2.1	21
18	1.0	1.0	-				-	12	1.5	1.8	2.1	19
19	.9	.6	-				-	18	1.3	1.8	2.1	3.2
20	.9	.2	-				-	18	1.0	1.9	2.1	1.5
21	.9	.2	-				26	14	a1.1	2.1	2.1	1.3
22	.8	.2	-				20	7.1	a1.6	1.9	2.1	1.3
23	.8	.1	-				11	6.3	a1.6	1.9	2.1	1.2
24	.8	.1	-				8.1	2.5	a1.6	1.9	a2.1	5.0
25	.8	.2	-				7.8	.6	a2.3	1.9	a2.1	15
26	.8	.2	-				7.8	.8	a1.6	1.9	a1.9	13
27	.8	.2	-				7.0	1.6	a1.6	1.9	a1.9	7.7
28	.8	.2	-				7.7	1.5	a1.8	1.9	1.9	7.7
29	.9	.2	-				6.9	1.4	a1.6	1.8	1.9	7.4
30	.9	.2	-				6.6	1.4	1.6	1.9	1.9	6.0
31	.9	-	-				-	1.2	-	1.9	1.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	36.3	1.9	0.8	1.17		
November	60.5	26	.1	2.02		
December	-	-	-	-		
Calendar year	-	-	-	-		
January	-	-	-	-		
February	-	-	-	-		
March	-	-	-	-		
April 21-30	108.9	26	6.6	10.9		
May	155.4	18	.6	5.01		
June	53.5	2.9	1.0	1.78		
July	55.9	2.1	1.5	1.80		
August	61.3	2.1	1.9	1.98		
September	165.2	21	1.2	5.51		
Water year	-	-	-	-		

† Discharge measurement.
a Ne or faulty gage-height record; discharge estimated.

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 1940 (canal seasons).

Remarks.- Records fair except those for periods of faulty or no gage-height record, which are poor. Record shows combined flow at gages 1 and 2 and represents total diversion from Black River at Forestport, through Forestport feeder, into Mohawk River Basin. During period Nov. 19 to Apr. 19, when no water was diverted, the 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a68	44					-	a0.5	16	48	35	a49
2	a64	7.4					-	a.5	15	46	35	a50
3	a62	14					-	a.5	14	46	35	a51
4	a61	32					-	.6	11	50	35	a52
5	a60	72					-	.6	9.8	47	35	a29
6	a58	77					-	a.6	8.6	42	37	a1.9
7	47	78					-	a.5	8.6	40	35	a1.2
8	29	85	†3.9				-	.4	18	39	40	1.2
9	27	66					-	.4	29	37	44	1.3
10	28	75					-	.4	29	38	45	1.3
11	35	89					-	.4	28	38	45	1.2
12	34	88					-	.4	26	39	44	1.1
13	31	84					-	.4	26	38	45	12
14	30	77					-	.5	26	40	44	a28
15	30	a42					-	.4	27	37	44	a45
16	30	a3.8					-	.4	27	37	44	a49
17	26	2.5					-	.9	26	36	44	a24
18	18	2.2					-	1.5	34	36	45	a1.7
19	18	-					-	1.4	62	36	45	a1.5
20	17	-					a0.6	1.4	45	36	46	a1.4
21	18	-					a.6	20	28	43	46	a1.4
22	19	-					a.6	12	41	37	46	a1.5
23	28	-					a.6	11	41	42	46	a1.6
24	29	-					a.6	6.5	42	40	45	a1.6
25	29	-					a.6	14	43	34	46	a1.8
26	32	-					a.5	24	44	35	45	1.5
27	65	-					a.5	33	46	38	45	2.0
28	77	-					a.5	23	46	36	47	a2.2
29	83	-					a.5	19	49	35	47	a1.9
30	80	-					a.5	1e	49	37	47	a8.2
31	79	-					-	17	-	37	a49	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,312	83	17	42.3		
November 1-18	938.9	89	2.2	52.2		
December	-	-	-	-		
Calendar year	-	-	-	-		
January	-	-	-	-		
February	-	-	-	-		
March	-	-	-	-		
April 20-30	6.1	.6	.5	.55		
May	210.2	33	.4	6.78		
June	915.0	62	8.6	30.5		
July	1,220	50	34	39.4		
August	1,331	49	35	42.9		
September	426.5	52	1.1	14.2		
Water year	-	-	-	-		

† Discharge measurement.
a No or faulty gage-height record; discharge estimated.

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 1940. June 1900 to December 1922 at site at Moose River 2¼ miles downstream.

Average discharge.- 32 years (1907-13, 1914-40), 835 second-feet (not adjusted for storage).

Extremes.- Maximum discharge during year, 7,120 second-feet May 2 (gage height, 10.31 feet); minimum, 125 second-feet Aug. 27, 28 (gage height, 1.69 feet).
1900-1940: Maximum discharge recorded, about 16,500 second-feet Mar. 27, 1913 (gage height, 16.2 feet, former site and datum, from floodmarks); minimum, about 42 second-feet July 21, 23, and 25-27, 1913.

Remarks.- Records good except those for periods of ice effect, 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 tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 1				May 2 to Sept. 30					
1.9	178	5.7	2,270	1.7	127	2.9	517	7.0	3,320
2.3	283	7.0	3,400	1.8	151	3.5	795	8.0	4,300
2.7	426	8.0	4,450	2.0	205	4.5	1,370	9.0	5,450
3.5	790	8.3	4,780	2.4	331	6.0	2,470	9.5	8,070
4.5	1,380								

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	438	658	224	340	300	200	600	4,780	496	636	355	368
2	501	770	230	330	290	200	660	6,060	501	641	351	505
3	418	591	396	320	290	205	720	5,410	492	526	318	472
4	376	471	827	310	290	215	760	4,300	492	556	298	396
5	340	414	*681	300	280	250	840	3,640	453	775	246	285
6	315	365	514	290	280	245	920	3,470	382	654	225	239
7	309	387	434	280	280	235	1,060	2,850	279	538	301	257
8	289	410	440	270	280	*225	1,200	2,650	260	393	211	226
9	277	532	460	270	270	220	1,560	2,110	194	321	199	202
10	274	510	450	260	270	220	1,780	1,850	395	1,380	238	205
11	380	604	430	260	270	215	1,790	1,640	411	825	185	208
12	493	676	410	250	280	210	2,430	1,440	390	780	159	208
13	446	586	380	340	270	205	2,590	1,160	1,060	830	149	208
14	410	467	350	420	260	205	2,140	1,030	1,050	662	199	199
15	395	438	330	430	250	240	1,850	847	755	480	238	194
16	365	418	320	480	250	235	1,650	1,080	574	433	188	188
17	329	414	300	450	245	230	1,670	1,080	501	407	164	211
18	299	380	286	430	240	225	2,490	963	390	382	151	226
19	266	376	277	410	*230	225	4,000	809	393	313	151	250
20	240	336	311	400	230	235	3,790	777	526	355	151	298
21	232	322	620	380	225	230	2,860	976	484	819	156	292
22	240	318	600	370	225	225	2,290	1,010	426	1,720	151	311
23	240	296	540	360	220	225	1,800	720	390	1,080	146	308
24	232	277	490	*350	215	220	1,500	695	338	830	139	407
25	235	263	450	340	215	220	1,340	659	434	825	137	592
26	263	246	420	330	210	215	1,310	564	820	805	132	760
27	289	243	400	330	210	215	1,430	682	795	659	127	564
28	348	232	390	320	205	225	1,760	690	720	529	132	564
29	501	224	370	310	205	250	2,530	672	682	488	202	229
30	510	224	360	310	-	320	3,280	700	668	426	226	241
31	442	-	350	300	-	500	-	569	-	368	244	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,692	510	232	345	-	-
November	12,478	770	224	416	-	-
December	13,040	827	224	421	-	-
Calendar year 1939	241,292	5,720	118	661	1.81	24.59
January	10,540	480	250	340	-	-
February	7,285	300	205	251	-	-
March	7,285	500	200	235	-	-
April	54,600	4,000	600	1,820	-	-
May	55,883	6,060	564	1,803	-	-
June	15,751	1,060	194	525	-	-
July	21,056	1,720	313	679	-	-
August	6,269	355	127	202	-	-
September	9,412	760	188	314	-	-
Water year 1939-40	224,291	6,060	127	613	1.68	22.86

Peak discharge.- May 1 (3:30 p.m.) 5,260 sec.-ft.; May 2 (8:45 a.m.) 7,120 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 8-17, Dec. 21 to Apr. 7.

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 1940.
Average discharge.- 28 years (1912-40), 104 second-feet (not adjusted for storage).
Extremes (regulated).- Maximum discharge observed during year, 314 second-feet Sept. 24 (gage height, 3.0 feet); minimum, 0.7 second-foot Dec. 15-17 (gage height, 0.10 foot), when gates in dam were closed.
1911-40: Maximum daily discharge, 862 second-feet Mar. 23, 1921, from rating curve extended above 450 second-feet by logarithmic plotting; minimum, about 0.1 second-foot many times during 1938-39 when gates in dam were closed.
Remarks.- Records good except those for periods of ice effect or backwater from North Branch, 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.

Rating tables, water year 1939-40, except periods of backwater (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 4

0.1	0.7	0.7	13	1.6	79
.2	1.6	.8	17	1.8	102
.3	2.9	.9	22	2.0	129
.4	4.6	1.0	28	2.4	191
.5	6.8	1.2	41	2.7	248
.6	9.6	1.4	58		

Dec. 5 to Sept. 30

0.8	17	1.2	39	2.2	152
.9	21	1.5	64	2.6	226
1.0	26	1.8	97	3.0	314

Note.- Same as preceding table below 0.8 foot.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	238	143	68	1.4	116	54		1.9		80	47	152
2	228	150	74	1.4	116	58				80	47	152
3	228	143	46	1.4	112	62				80	35	137
4	218	136	1.6	1.3	110	64				80	24	116
5	209	129	1.9	1.3	110	64				72	24	101
6	191	129	1.6	1.2	104	64		1.7	2.2	47	22	137
7	174	122	1.6	1.2	97	64				30	22	94
8	174	122	1.9	1.2	91	62				31	22	60
9	166	122	1.9	1.2	91	64				30	22	59
10	166	122	2.1	1.2	91	32		1.6		31	21	60
11	174	122	1.9	1.7	97	50		1.2	1.9	30	21	59
12	166	122	1.5	89	91	50	1.6	1.6	2.4	33	21	59
13	158	122	1.3	182	86	52		1.9	2.1	31	21	59
14	158	122	1.1	196	66	52		1.9	2.4	32	21	57
15	150	115	.9	206	82	52			2.1	31	21	73
16	143	115	.7	206	80	52			2.1	31	21	130
17	136	115	.7	196	80	52			2.1	32	21	137
18	108	108	1.9	196	80	52			2.1	31	21	161
19	96	108	2.1	187	80	54			2.4	31	21	236
20	90	102	2.1	180	78	56			2.4	32	21	236
21	96	102	2.0	175	76	57			2.4	39	21	226
22	90	90	1.9	170	72	55			2.4	127	16	226
23	84	90	1.9	160	70	54		2.2	2.1	174	2.2	252
24	84	84	1.9	155	66	52	1.9		2.1	106	2.2	314
25	122	84	1.7	150	64	50	1.6		2.9	69	2.2	145
26	136	79	1.7	145	62	49	1.9		2.9	69	40	2.2
27	136	68	1.6	140	60	53	1.6		24	69	152	2.0
28	136	68	1.6	135	58	53	1.6		80	69	160	1.9
29	143	66	1.6	130	55	57	1.6		80	64	152	45
30	143	68	1.5	123	-	60	2.1		80	47	152	123
31	143	-	1.5	123	-	22	-		-	47	152	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,684	238	84	151	-	-
November	3,268	150	66	109	-	-
December	233.7	74	.7	7.54	-	-
Calendar year 1939	37,703.4	389	.1	103	1.98	26.98
January	3,258.5	206	1.2	105	-	-
February	2,463	116	55	84.9	-	-
March	1,672	64	22	53.9	-	-
April	49.1	2.1	-	1.64	-	-
May	61.1	-	1.2	1.97	-	-
June	322.8	60	1.9	10.8	-	-
July	1,757	174	30	56.7	-	-
August	1,547.6	160	2.2	43.5	-	-
September	3,612.1	314	1.9	120	-	-
Water year 1939-40	22,728.9	314	.7	62.1	1.19	16.25

Note.- Stage-discharge relation affected by ice Dec. 11-15, Dec. 21 to Jan. 11, Jan. 20-29, Feb. 3, 13-16, 20-28, Mar. 1-3, 11-20, 23-25. Stage discharge relation affected by backwater from North Branch Mar. 31 to Apr. 23, May 2-9, May 15 to June 10, Aug. 14-26; discharge computed on basis of gate operations at Old Forge Dam and two discharge measurements.
Decrease in combined storage in Old Forge and Sixth Lake reservoirs during calendar year 1939, about 554,400,000 cubic feet (equivalent mean discharge, 17.6 sec.-ft.; run-off 4.59 inches); increase during water year 1939-40, about 380,600,000 cubic feet (equivalent mean discharge, 12.0 sec.-ft.; run-off, 3.14 inches).

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 of Middle and South Branches and 1½ miles northeast of McKeever, Herkimer County.

Drainage area.- 148 square miles.

Records available.- October 1925 to September 1940.

Average discharge.- 15 years, 325 second-feet (not adjusted for storage).

Extremes (regulated).- Maximum discharge during year, 1,130 second-feet May 4 (gage height, 5.21 feet); minimum, 36 second-feet Aug. 15 (gage height, 1.90 feet).
1925-40: Maximum discharge, 2,100 second-feet Apr. 27, 1926 (gage height, 6.6 feet); minimum, that of Aug. 15, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow partly regulated by Fulton Chain of Lakes.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.9	36	2.2	63	2.8	150	3.5	322	4.6	775
2.0	44	2.5	102	3.1	213	4.0	499	5.2	1,125

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	307	246	128	110	190	116	200	714	154	206	161	184
2	298	251	135	108	185	116	210	839	150	202	154	195
3	286	246	179	104	180	120	220	1,020	147	197	148	202
4	275	230	162	102	175	130	230	1,120	138	199	131	182
5	264	218	133	100	175	145	240	1,110	136	206	135	154
6	256	220	*123	98	170	145	250	1,030	96	188	214	134
7	243	213	120	96	170	140	284	929	73	152	94	161
8	233	235	120	96	170	*135	344	823	75	131	79	127
9	223	301	135	94	165	135	d423	734	98	141	78	108
10	226	278	140	92	160	130	442	642	110	214	142	106
11	264	286	135	90	160	125	491	566	112	148	76	104
12	272	264	125	90	170	125	628	491	130	161	60	101
13	264	256	122	175	160	120	601	430	148	152	53	102
14	248	250	118	270	160	120	592	324	116	135	46	101
15	233	240	114	280	155	140	637	200	105	125	38	98
16	218	230	110	310	150	135	633	284	102	123	42	112
17	211	220	108	290	150	135	601	264	99	116	49	156
18	197	211	104	280	145	130	704	267	98	106	55	167
19	167	204	102	270	*140	130	802	254	116	111	59	207
20	152	195	126	260	140	135	861	256	112	119	62	259
21	150	184	167	250	135	135	900	243	111	198	61	267
22	152	177	180	245	135	130	872	236	106	324	60	267
23	148	167	160	240	130	130	834	220	99	361	57	267
24	142	160	150	230	125	130	700	206	99	302	52	369
25	152	150	140	225	122	125	619	195	136	246	47	452
26	184	145	135	215	120	125	566	208	135	220	42	259
27	199	140	130	210	120	124	536	197	133	218	49	121
28	223	133	125	205	118	130	544	188	156	216	122	82
29	233	130	120	200	118	140	570	177	199	206	169	48
30	228	128	116	195	-	160	624	167	206	190	171	42
31	226	-	114	190	-	190	-	161	-	171	180	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,874	307	142	222	-	-
November	6,308	301	128	210	-	-
December	4,076	180	102	131	-	-
Calendar year 1939	97,412	1,460	67	267	1.80	24.44
January	5,720	310	90	185	-	-
February	4,393	190	118	151	-	-
March	4,126	a190	a116	133	-	-
April	16,158	900	a200	539	-	-
May	14,515	1,120	161	468	-	-
June	3,695	206	73	123	-	-
July	5,784	361	106	187	-	-
August	2,886	214	38	93.1	-	-
September	5,114	452	42	170	-	-
Water year 1939-40	79,649	1,120	38	218	1.47	20.00

* Winter discharge measurement made on this day.
d Gage-height record faulty; discharge computed on basis of records for other streams in Moose River Basin.
Note.- Stage-discharge relation affected by ice Nov. 14-16, 24-27, Dec. 8-19, Dec. 23 to Apr. 6.

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 1940.
Average discharge.- 12 years (1928-40), 166 second-feet.
Extremes.- Maximum discharge during year, 1,660 second-feet Apr. 19 (gage height, 5.6 feet, from graph based on gage readings); minimum, 15.5 second-feet Aug. 30 (gage height, 0.99 foot).

1927-40: 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, Sept. 2, 3, 1939; minimum gage height, 0.88 foot Aug. 31 to Sept. 2, 1934.

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

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 19

1.1	23	2.0	126	4.0	735
1.2	30	2.2	162	4.5	975
1.4	47	2.6	249	5.0	1,270
1.6	68	3.0	358	5.4	1,520
1.8	95	3.5	527		

Apr. 20 to Sept. 30

1.0	16	1.6	66	2.6	244
1.1	22	1.8	90	3.0	357
1.2	29	2.0	120	3.3	455
1.4	45	2.3	175		

Note.- Same as preceding table above 3.3 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	69	35	45	35	39	274	1,030	112	84	39	18
2	51	108	38	44	34	38	288	1,210	166	78	37	24
3	36	84	111	43	34	39	344	1,010	146	76	32	28
4	30	64	227	42	34	45	389	735	112	66	29	25
5	26	53	249	40	35	52	421	566	84	57	28	22
6	25	52	175	39	37	58	472	438	68	49	31	20
7	24	59	134	38	40	56	508	357	59	42	30	18
8	23	64	*114	38	46	52	606	284	55	37	26	18
9	24	108	220	37	54	50	780	220	49	34	26	20
10	23	113	230	37	56	48	825	175	45	32	23	21
11	135	143	180	36	62	46	925	155	55	29	22	22
12	161	172	140	36	62	45	1,210	137	68	40	21	23
13	85	126	114	38	60	44	975	128	78	43	20	26
14	66	101	90	43	56	45	735	120	90	39	29	23
15	59	84	76	*54	52	47	508	120	90	31	26	22
16	53	76	64	56	49	54	438	128	78	40	25	20
17	43	73	58	52	47	66	566	146	72	47	21	18
18	38	88	54	49	46	*64	947	175	64	40	20	17
19	34	69	52	46	47	62	1,520	186	64	39	20	17
20	32	64	86	44	47	62	1,230	197	71	82	21	16
21	32	55	180	43	*45	70	825	175	73	208	20	20
22	34	53	145	42	43	68	566	155	64	246	18	25
23	38	45	118	41	42	64	438	137	62	175	18	24
24	38	42	96	40	41	60	342	128	64	90	20	24
25	36	38	78	39	40	56	336	155	77	104	20	68
26	36	44	66	38	40	54	394	175	104	137	18	90
27	44	36	60	37	39	52	437	197	97	104	17	60
28	50	40	56	36	39	52	605	165	104	84	17	39
29	68	40	52	36	40	60	735	128	104	49	16	32
30	61	36	49	35	-	102	875	104	104	42	16	26
31	55	-	46	35	-	180	-	90	-	40	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,505	161	23	48.5	0.571	0.66
November	2,219	172	36	74.0	.871	.97
December	3,393	249	35	109	1.28	1.48
Calendar year 1939	47,970	1,390	14	131	1.54	20.98
January	1,279	56	35	41.3	.486	.56
February	1,302	62	34	44.9	.528	.57
March	1,830	180	38	59.0	.694	.80
April	19,514	1,520	274	650	7.65	8.54
May	9,126	1,210	90	294	3.46	3.99
June	2,499	186	45	83.3	.980	1.09
July	2,264	246	29	73.0	.859	.99
August	722	39	16	23.3	.274	.32
September	826	90	16	27.5	.324	.36
Water year 1939-40	46,479	1,520	16	127	1.49	20.33

* Winter discharge measurement made on this day.
Note.- Discharge Nov. 15, Dec. 6, Dec. 8 to Mar. 31 determined from gage heights corrected for ice effect.

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 at mean sea level (general adjustment of 1912).
Drainage area.- 172 square miles.
Records available.- February 1925 to September 1940.
Extremes.- Maximum elevation during year, 1,679.34 feet June 2 (contents, 4,635,000,000 cubic feet); minimum, 1,644.80 feet Mar. 25-27 (reservoir empty).
1925-40: Maximum elevation, 1,679.46 feet May 4, 1929 (contents, 4,669,000,000 cubic feet); minimum since first filling, that of Mar. 25-27, 1940.
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 1650.3 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.

Capacity table, elevation, in feet, and contents, in million cubic feet (Prepared in 1925 by Black River Regulating District from maps resulting from surveys by New York Conservation Commission and Black River Regulating District)

1650.3	0	1652.0	69	1655.0	253	1662.5	1,052	1670.0	2,341	1677.5	4,116
1650.5	7	1653.0	122	1657.5	465	1665.0	1,428	1672.5	2,876	1679.3	4,623
1651.0	26	1654.0	183	1660.0	731	1667.5	1,858	1675.0	3,466		

Elevation, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60.77	57.47	60.01	63.81	59.49	52.15	50.53	71.21	79.19	78.32	77.69	73.01
2	60.65	57.55	59.86	63.87	59.21	51.66	51.34	72.24	79.32	78.33	77.58	72.95
3	60.48	57.64	59.99	63.80	58.99	51.17	52.07	73.20	79.33	78.34	77.46	72.80
4	60.28	57.72	60.22	63.72	58.94	50.31	52.74	73.94	79.30	78.34	77.41	72.61
5	60.11	57.78	60.38	63.60	58.87	50.43	53.34	74.55	79.26	78.33	77.34	72.43
6	59.92	57.90	60.51	63.52	58.59	50.17	53.97	75.05	79.20	78.32	77.22	72.23
7	59.77	58.01	60.64	63.41	58.37	49.71	54.55	75.45	79.15	78.31	77.10	72.02
8	59.60	58.05	60.87	63.33	58.14	48.89	55.06	75.89	79.10	78.25	76.97	71.94
9	59.42	58.26	61.01	63.24	57.91	47.95	55.83	76.20	79.06	78.16	76.81	71.84
10	59.24	58.39	61.19	63.14	57.67	46.48	56.67	76.47	79.02	78.08	76.65	71.65
11	59.30	58.50	61.35	63.04	57.64	46.11	57.50	76.71	78.96	77.98	76.60	71.46
12	59.23	58.74	61.50	62.93	57.41	45.55	58.52	76.91	78.89	77.92	76.51	71.25
13	59.16	58.88	61.61	62.82	57.14	46.63	59.47	77.08	78.82	77.82	76.35	71.07
14	59.08	59.01	61.78	62.72	56.83	46.92	60.22	77.25	78.83	77.78	76.21	70.88
15	59.02	59.09	61.83	62.67	56.52	46.44	60.77	77.39	78.77	77.71	75.98	70.74
16	58.93	59.18	61.89	62.50	56.17	45.86	61.32	77.54	78.80	77.61	75.84	70.58
17	58.83	59.28	62.01	62.31	55.82	45.51	61.88	77.70	78.79	77.51	75.65	70.35
18	58.74	59.36	62.10	62.15	55.85	45.30	62.65	77.83	78.70	77.39	75.58	70.17
19	58.61	59.39	62.23	61.97	55.53	45.18	63.88	77.97	78.71	77.26	75.39	69.95
20	58.51	59.51	62.31	61.78	55.24	45.03	65.01	78.10	78.64	77.15	75.21	69.73
21	58.42	59.57	62.53	61.63	54.96	a44.96	65.86	78.22	78.57	77.31	75.02	69.54
22	58.32	59.63	62.73	61.51	54.66	a44.90	66.44	78.34	78.51	77.37	74.82	69.33
23	58.25	59.73	62.91	61.36	54.32	a44.85	67.04	78.54	78.49	77.31	74.62	69.13
24	58.15	59.73	63.07	61.17	54.01	a44.82	67.54	78.63	78.47	77.50	74.44	68.87
25	58.06	59.77	63.22	61.01	53.75	44.80	67.91	78.73	78.42	77.74	74.24	68.81
26	57.99	59.81	63.33	60.82	53.47	44.80	68.28	78.81	78.37	77.86	74.07	68.63
27	57.90	59.85	63.43	60.61	53.14	44.80	68.67	78.89	78.31	77.91	73.88	68.50
28	57.80	59.89	63.52	60.38	52.78	a44.90	69.10	78.96	78.27	77.95	73.70	68.40
29	57.77	59.93	63.57	60.14	52.46	a46.00	69.59	79.04	78.20	77.91	73.50	68.27
30	57.68	59.97	63.64	59.94	-	48.28	70.30	79.10	78.29	77.85	73.30	68.18
31	57.55	-	63.71	59.72	-	49.71	-	79.15	-	77.81	73.12	-

a Gage, frozen; elevation estimated.
Note.- Add 1,600 feet to obtain elevations above mean sea level.

Elevation and contents, water year October 1939 to September 1940

Date	Elevation (feet)*	Contents (million cubic feet)	Change in contents during month (equivalent mean second-feet)
Sept.30	1,660.80	828	-
Oct. 31	1,657.50	465	-136
Nov. 30	1,660.00	731	+103
Dec. 31	1,663.78	1,238	+189
Calendar year 1939	-	-	-36.4
Jan. 31	1,659.57	682	-208
Feb. 29	1,652.25	82	-239
Mar. 31	1,650.27	0	-30.6
Apr. 30	1,670.91	2,529	+976
May 31	1,679.18	4,588	+769
June 30	1,678.31	4,340	-95.7
July 31	1,677.73	4,178	-60.5
Aug. 31	1,673.03	2,997	-441
Sept.30	1,668.04	1,958	-401
Water year 1939-40	-	-	+35.7

* Reservoir elevations at midnight, obtained by interpolation.

Beaver River below Stillwater Dam, 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.

Drainage area.- 172 square miles.

Records available.- May 1908 to September 1940.

Average discharge.- 32 years, 358 second-feet (not adjusted for storage).

Extremes.- 1908-40: Maximum discharge, 3,700 second-feet May 3, 1926; practically no flow at times when gates in dam are closed.

Remarks.- Records good except those for periods of faulty or no gage-height record, which are fair. Flow regulated by Stillwater Reservoir (usable capacity, 4,623,000,000 cubic feet). Discharge determined from ratings for Stillwater Dam gates and spillway.

Cooperation.- Records of gate openings and reservoir elevations furnished by Board of Black River Regulating District.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	336	184	208	11	409	276	7	13	25	143	515	286
2	334	10	159	183	408	265	7	13	191	205	515	361
3	332	10	10	252	256	253	7	14	418	205	388	580
4	330	10	10	252	182	245	8	14	418	205	157	578
5	330	10	10	252	337	237	8	14	418	205	584	575
6	328	10	11	252	397	230	8	14	418	205	581	573
7	326	10	11	286	393	261	9	14	416	252	581	431
8	324	10	11	305	391	280	9	14	415	405	581	154
9	322	10	11	305	388	241	9	14	415	405	579	570
10	320	10	11	303	333	176	9	14	414	405	439	567
11	320	10	11	303	221	161	10	15	414	405	164	565
12	258	10	11	303	383	135	10	15	414	404	615	565
13	222	10	11	301	449	183	10	15	414	307	610	560
14	222	10	11	301	441	196	10	15	414	136	622	492
15	222	10	11	362	436	175	11	15	331	515	644	347
16	222	10	11	384	428	149	11	16	105	515	644	556
17	220	10	11	384	356	132	11	17	414	514	483	552
18	220	10	11	381	238	123	11	17	411	512	431	566
19	218	10	11	381	347	117	11	19	411	512	637	606
20	218	10	11	379	340	109	12	19	410	387	636	603
21	218	10	11	377	336	a107	12	19	410	139	634	603
22	216	10	11	377	329	a103	12	20	304	512	609	599
23	216	10	11	375	322	a102	12	21	127	386	596	596
24	216	10	11	373	315	a101	12	21	409	234	592	596
25	214	10	11	371	309	99	12	22	409	165	591	595
26	214	10	11	394	304	99	12	23	409	167	589	442
27	214	10	11	427	297	99	13	23	408	130	589	344
28	212	10	11	423	290	a103	13	23	408	144	587	300
29	244	10	11	421	283	a88	13	23	309	519	585	192
30	259	10	11	418	-	6	13	24	20	518	582	347
31	257	-	11	414	-	7	-	25	-	518	507	-

Month	Observed				Adjusted for change in contents*		
	Second-foot-days	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches
October	8,104	336	212	261	125	0.727	0.84
November	474	184	10	15.8	119	.692	.77
December	683	208	10	22.0	211	1.23	1.42
Calendar year 1939	115,327	678	10	316	280	1.63	22.07
January	10,250	427	11	331	123	.715	.82
February	9,918	449	182	342	103	.599	.65
March	4,858	280	6	157	126	.733	.85
April	312	13	7	10.4	986	5.73	6.39
May	545	25	13	17.6	787	4.58	5.28
June	10,499	418	20	350	254	1.48	1.65
July	10,274	519	130	331	271	1.58	1.82
August	16,867	644	157	544	103	.599	.69
September	14,701	606	154	490	89	.517	.58
Water year 1939-40	87,485	644	6	239	275	1.60	21.76

* Adjusted for change in contents in Stillwater Reservoir.
a Faulty or no gage-height record; discharge estimated.

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 1940.
Average discharge.- 10 years, 534 second-feet.
Extremes (regulated).- Maximum discharge during year, 1,820 second-feet Apr. 20 (gage height, 4.44 feet); minimum, 39 second-feet June 10 (gage height, 0.97 foot); minimum daily, 46 second-feet Mar. 3.
1930-40: 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 almost completely regulated by Stillwater Reservoir (see p.148). 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 tables, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 20

1.1	42	1.7	164	2.6	495
1.2	57	1.8	192	3.0	702
1.3	74	1.9	222	3.5	1,025
1.4	93	2.0	254	4.1	1,510
1.5	114	2.2	326		
1.6	138	2.4	406		

Apr. 21 to Sept. 30

1.0	41	1.4	90	1.8	190
1.1	50	1.5	110	2.0	254
1.2	61	1.6	134		
1.3	74	1.7	161		

Note.- Same as preceding table above 2.0 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	292	138	180	543	433	417	814	164	416	720	435
2	459	237	120	264	542	225	390	979	50	666	664	561
3	402	159	67	270	533	46	390	1,090	168	515	337	720
4	458	100	128	270	173	378	408	1,100	246	164	105	727
5	576	48	160	267	481	626	441	753	233	403	376	533
6	557	182	147	197	554	523	400	904	151	376	669	634
7	267	254	144	72	539	485	565	805	174	82	506	408
8	132	192	130	202	530	489	741	733	82	404	651	116
9	426	177	125	315	522	215	933	704	47	491	708	486
10	424	163	71	460	311	52	780	652	159	458	279	513
11	432	109	104	418	78	338	888	525	470	436	132	714
12	441	75	118	365	458	483	868	198	473	396	446	608
13	450	169	263	198	518	470	745	442	488	175	601	560
14	288	178	197	69	507	445	589	427	473	55	647	280
15	74	151	152	323	508	430	763	356	306	271	633	79
16	271	139	132	494	574	347	735	377	65	398	664	430
17	347	102	60	469	571	209	444	379	345	451	470	539
18	336	100	134	468	278	472	678	251	498	532	216	513
19	333	89	291	525	569	492	925	188	581	586	470	484
20	226	149	344	594	620	487	1,480	286	562	388	516	492
21	144	306	315	261	536	483	1,100	321	529	420	572	569
22	56	246	283	502	496	472	796	265	307	573	725	604
23	155	137	233	527	496	217	769	259	155	540	569	514
24	216	170	78	513	317	56	619	251	509	535	560	535
25	236	136	64	458	87	349	686	172	584	631	512	741
26	278	53	196	488	383	445	543	.74	594	482	520	679
27	252	72	278	299	456	452	369	270	563	529	666	713
28	171	209	347	72	448	457	166	300	725	242	682	282
29	87	220	274	416	436	457	492	283	29e	449	654	255
30	172	171	254	556	-	226	702	265	74	640	625	467
31	227	-	85	546	-	126	-	256	-	551	570	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,160	576	56	295	-	-
November	4,785	306	48	160	-	-
December	5,432	347	60	175	-	-
Calendar year 1939	167,222	1,380	48	458	1.56	21.15
January	11,058	594	69	357	-	-
February	15,064	820	78	450	-	-
March	11,385	626	46	367	-	-
April	19,822	1,480	166	661	-	-
May	14,659	1,100	74	473	-	-
June	10,073	725	47	336	-	-
July	13,285	681	55	429	-	-
August	16,465	725	105	531	-	-
September	15,191	741	79	506	-	-
Water year 1939-40	144,379	1,480	46	394	1.34	18.27

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 1940.

Average discharge.- 11 years, 206 second-feet.

Extremes.- Maximum discharge during year, 3,720 second-feet Apr. 18 (gage height, 6.90 feet); minimum, 0.7 second-foot (regulated) Aug. 12 (gage height, 0.17 foot); minimum daily, 2.4 second-feet (regulated) Aug. 16.
1929-40: Maximum discharge, 4,760 second-feet Mar. 27, 1939 (gage height, 7.70 feet); minimum, that of Aug. 12, 1940; minimum daily, 0.8 second-foot July 22 to Aug. 2, 1933.

Remarks.- Records good except those for periods of ice effect or no or faulty gage-height record, which are fair. Diurnal fluctuation at low and medium stages caused by power plant.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	100	a20	54	44	48	372	1,320	59	60	22	4.1
2	25	111	a28	52	43	47	407	1,580	250	46	24	3.2
3	19	95	339	50	43	50	427	873	144	36	23	3.2
4	11	72	388	49	42	72	501	590	80	30	22	6.0
5	12	58	a264	48	43	94	632	458	54	27	23	6.6
6	36	58	a237	47	45	100	718	402	43	21	20	5.8
7	8.5	57	a264	46	58	94	899	330	39	18	16	4.0
8	7.8	235	409	46	74	84	1,460	281	103	16	20	4.5
9	7.3	406	266	45	72	76	2,510	217	123	15	21	5.2
10	9.2	164	294	45	70	70	1,870	164	79	14	20	7.1
11	46	323	*210	44	81	66	*1,960	143	50	14	13	11
12	48	192	144	44	97	62	2,350	129	47	15	7.5	12
13	41	120	130	46	94	60	1,370	112	48	25	6.0	14
14	51	49	90	64	86	60	840	99	50	16	3.2	12
15	64	67	57	86	80	70	704	89	77	14	3.8	11
16	72	92	65	90	76	76	1,130	200	89	21	2.4	8.9
17	24	106	85	76	74	70	1,660	360	49	29	2.8	7.3
18	16	85	135	68	72	*66	2,840	264	58	17	4.1	7.5
19	24	67	126	64	72	66	2,130	164	140	15	9.4	8.3
20	22	33	614	60	*76	74	1,420	258	87	17	8.1	12
21	19	41	430	58	72	80	1,060	213	54	278	10	7.6
22	23	44	202	56	66	76	615	138	44	168	10	3.2
23	29	32	185	54	62	72	560	101	36	66	8.9	10
24	26	25	148	52	58	68	600	81	31	37	6.2	11
25	21	24	116	*50	56	66	670	72	51	30	5.2	64
26	31	22	88	49	54	64	723	136	68	23	6.4	61
27	45	20	70	48	52	64	786	169	63	20	5.1	36
28	56	19	66	47	50	66	910	126	57	25	3.9	24
29	67	a22	62	46	49	80	1,010	103	61	25	3.4	18
30	57	a21	58	45	-	126	1,180	80	78	18	2.8	14
31	58	-	56	44	-	196	-	64	-	19	4.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,004.8	72	7.3	32.4	0.364	0.42
November	2,769	405	19	92.3	1.04	1.16
December	5,646	614	20	182	2.04	2.35
Calendar year 1939	68,022.0	2,340	2.0	186	2.09	28.44
January	1,673	a90	44	54.0	.607	.70
February	1,861	97	42	64.2	.721	.76
March	2,363	196	47	76.2	.856	.99
April	34,304	2,840	372	1,143	12.84	14.33
May	9,316	1,580	64	301	3.38	3.90
June	2,212	250	31	73.7	.828	.92
July	1,175	278	14	37.9	.426	.49
August	337.8	24	2.4	10.9	.122	.14
September	402.5	64	3.2	13.4	.151	.17
Water year 1939-40	63,064.1	2,840	2.4	172	1.93	26.35

Peak discharge.- Apr. 12 (4:40 a.m.) 2,750 sec.-ft.; Apr. 18 (7:10 p.m.) 3,720 sec.-ft.
* Winter discharge measurement made on this day.
a No or faulty gage-height record; discharge estimated.
Note.- Stage-discharge relation affected by ice Dec. 11, Dec. 26 to Feb. 10, Feb. 13 to Mar. 29; affected by rocks on control Sept. 21-24.

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 1940.

Average discharge.- 17 years, 297 second-feet.

Extremes (regulated).- Maximum discharge during year, 742 second-feet May 7 (gage height, 6.05 feet); minimum, 27 second-feet Apr. 6 (gage height, 3.30 feet); minimum daily, 44 second-feet Nov. 10.

1923-40: Maximum daily discharge, 1,620 second-feet Apr. 17-20, 1933; minimum occurred when gates in dam were closed; minimum daily, about 3 second-feet Apr. 9-16, 1931.

Remarks.- Records excellent. Flow completely regulated by gates in Cranberry Lake Dam.

Rating tables, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

Oct. 1 - 12		Oct. 12 to Sept. 30					
4.8	264	3.5	44	4.3	140	5.3	409
5.0	323	3.7	63	4.6	200	5.7	585
		4.0	97	4.9	276	6.1	765

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	276	136	46	180	207	227	209	102	193	200	196	246
2	276	75	46	178	205	254	212	104	193	200	196	243
3	273	75	47	178	205	254	212	106	193	200	196	243
4	273	75	47	178	202	251	214	187	193	200	196	240
5	273	74	47	176	202	251	216	349	193	200	196	240
6	273	74	47	176	202	248	111	562	193	200	196	240
7	273	74	47	176	202	246	72	734	193	200	196	240
8	273	74	48	176	202	246	74	729	193	200	196	240
9	270	66	48	176	202	243	76	724	191	200	196	240
10	270	44	48	176	200	243	77	720	191	200	193	240
11	270	45	48	176	200	240	78	716	193	200	191	240
12	220	45	48	180	198	238	79	702	193	198	191	240
13	152	45	48	196	198	236	63	513	196	198	189	268
14	134	45	48	196	196	233	55	350	196	a198	189	303
15	132	45	48	196	196	233	56	322	198	a198	189	303
16	132	45	48	196	196	233	57	309	198	a198	189	300
17	140	46	48	196	196	230	59	259	198	a198	232	297
18	168	46	48	196	196	228	62	259	198	a198	256	297
19	166	46	48	193	193	228	85	256	200	a196	256	294
20	166	46	48	202	193	226	134	254	200	a196	256	294
21	166	46	49	214	191	226	138	198	200	196	254	291
22	166	46	49	214	191	223	107	196	200	196	251	291
23	164	46	49	214	191	221	90	196	200	196	248	288
24	164	46	49	214	191	218	93	196	200	196	248	288
25	164	46	50	214	189	216	93	196	200	196	246	288
26	162	46	82	212	187	214	95	196	200	196	246	285
27	162	46	180	212	187	212	96	193	200	196	246	285
28	162	46	180	209	185	209	96	193	200	196	246	285
29	162	46	180	209	202	209	98	193	200	196	246	282
30	162	46	180	207	-	207	100	193	200	196	246	282
31	162	-	180	207	-	207	-	193	-	196	246	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,206	276	132	200	-	-
November	1,681	136	44	56.0	-	-
December	2,179	180	46	70.3	-	-
Calendar year 1939	90,550	479	44	248	1.72	23.39
January	6,023	214	176	194	-	-
February	5,705	207	185	197	-	-
March	7,150	254	207	231	-	-
April	3,207	216	55	107	-	-
May	10,380	734	102	335	-	-
June	5,896	200	191	197	-	-
July	6,134	200	196	198	-	-
August	6,818	256	189	220	-	-
September	8,113	303	240	270	-	-
Water year 1939-40	69,492	734	44	190	1.32	17.97

a No gage-height record; discharge computed on basis of observer's readings and record of gate openings.

Note.- Decrease in storage in Cranberry Lake reservoir during calendar year 1939, about 921,000,000 cubic feet (equivalent mean discharge, 29.2 sec.-ft.; run-off, 2.76 inches); decrease in elevation, 3.88 ft. Increase during water year 1939-40, about 250,000,000 cubic feet (equivalent mean discharge, 7.91 sec.-ft.; run-off, 0.75 inch); increase in elevation, 1.17 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 hydroelectric plant of Northern New York Utilities, Inc., 2¾ miles north of Oswegatchie, St. Lawrence County.
Drainage area.- 263 square miles.
Records Available.- October 1924 to September 1940.
Average discharge.- 15 years (1925-40), 524 second-feet.
Extremes (regulated).- Maximum discharge during year, 2,590 second-feet Apr. 19 (gage height, 5.86 feet); minimum, 4.9 second-feet July 23 (gage height, 0.90 foot); minimum daily, 88 second-feet Nov. 29.
1924-40: Maximum discharge, 4,010 second-feet Apr. 6, 1928 (gage height, 7.1 feet), from rating curve extended above 1,900 second-feet by logarithmic plotting; 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. 152).

Rating tables, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 19				Apr. 20 to Sept. 30			
1.8	77	3.4	519	2.2	144	4.2	1,000
1.9	92	4.0	840	2.4	188	4.6	1,300
2.1	126	4.5	1,190	2.7	269	5.1	1,760
2.4	187	5.0	1,650	3.0	368		
2.7	260	5.7	2,400	3.4	535		
3.0	355			3.8	741		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	256	111	316	270	268	369	1,250	a330	342	327	208
2	317	208	105	310	308	266	510	1,010	a340	336	373	203
3	313	155	118	312	244	275	461	1,310	319	330	341	306
4	361	164	160	289	264	316	552	1,230	306	327	325	294
5	430	204	238	364	262	307	666	313	321	326	309	258
6	383	130	265	269	263	561	562	1,020	339	332	309	264
7	381	145	329	269	269	363	634	701	334	300	318	323
8	310	183	282	290	266	469	581	931	331	314	316	162
9	263	208	324	254	268	459	1,050	1,260	325	337	305	341
10	419	101	326	237	275	485	1,050	1,240	277	334	306	280
11	382	321	333	299	212	246	1,170	964	331	281	316	217
12	467	191	334	247	319	297	1,440	472	360	448	332	267
13	307	225	340	241	330	306	1,360	1,140	540	338	321	256
14	395	111	329	119	273	320	982	981	514	330	278	314
15	282	234	319	231	306	271	663	466	336	325	245	205
16	267	215	318	241	275	307	948	628	323	326	214	290
17	273	213	320	241	271	297	658	680	317	336	175	290
18	329	117	320	249	265	253	1,330	429	328	343	240	276
19	276	118	320	241	316	294	2,330	376	440	344	171	278
20	307	246	372	219	293	338	1,700	321	441	316	263	269
21	213	236	326	216	317	401	1,250	494	426	329	302	278
22	172	257	321	227	297	440	1,320	545	331	419	462	207
23	213	151	317	224	281	427	1,280	556	332	422	248	339
24	334	158	315	225	285	428	1,070	351	318	293	277	413
25	216	117	303	238	312	398	691	347	320	467	265	492
26	298	113	298	268	228	399	384	327	341	394	317	423
27	256	171	297	261	263	399	838	314	501	348	300	535
28	212	162	313	261	261	336	759	a346	444	307	293	433
29	203	88	329	268	266	403	1,060	a314	321	311	298	316
30	275	120	326	321	-	746	1,310	336	334	334	290	312
31	260	-	380	261	-	478	-	a429	-	337	208	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,434	467	172	304	-	-
November	5,318	321	88	177	-	-
December	9,088	380	105	293	-	-
Calendar year 1939	156,278	1,300	88	428	1.63	22.09
January	8,006	364	119	258	-	-
February	8,059	330	212	278	-	-
March	11,605	746	246	374	-	-
April	29,419	2,330	359	981	-	-
May	20,881	1,310	313	674	-	-
June	10,818	540	277	361	-	-
July	10,626	467	281	343	-	-
August	9,042	462	171	292	-	-
September	9,049	535	162	302	-	-
Water year 1939-40	141,347	2,330	88	386	1.47	19.98

a Faulty or no gage-height record; discharge determined from gage-height graph based on fragmentary record and shape of graph for preceding and succeeding days.

Oswegatchie River near Heuvelton, N. Y.

Location.- Water-stage recorder, lat. 44°36'00", long. 75°22'45", 2½ miles upstream from Heuvelton, St. Lawrence County.
Drainage area.- 973 square miles.
Records available.- June 1916 to September 1940.
Average discharge.- 24 years, 1,692 second-feet.
Extremes.- Maximum discharge during year, 10,800 second-feet Apr. 10 (gage height, 7.38 feet); minimum, 321 second-feet Sept. 20 (gage height, 0.98 foot).
1916-40: Maximum discharge, 15,600 second-feet Jan. 11, 1930 (gage height, 9.1 feet); minimum, 200 second-feet Aug. 18, 1934 (gage height, 0.65 foot).
Remarks.- Records excellent except those for periods of ice effect, which are fair. Seasonal flow slightly regulated by Cranberry Lake; slight diurnal fluctuation at low and medium stages caused by power operations. 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, 4½ miles above station.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 12				Apr. 13 to Sept. 30			
1.0	324	3.5	2,980	1.0	330	1.7	805
1.2	422	4.7	4,990	1.2	440	2.1	1,190
1.4	560	6.0	7,610	1.4	570	2.4	1,540
1.9	1,010	6.8	9,440	Note.- Same as preceding table above 2.4 feet.			
2.6	1,780	7.3	10,650				

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	593	552	342	960	552	620	2,800	3,040	877	823	648	410
2	545	552	356	900	593	620	3,200	3,300	895	805	598	404
3	610	568	515	860	593	620	3,500	3,470	877	762	550	370
4	626	618	918	820	577	700	3,800	3,730	832	720	544	392
5	585	585	1,380	780	585	820	4,000	3,950	771	664	524	422
6	560	560	1,560	740	602	1,000	4,400	3,710	728	626	550	375
7	593	610	1,670	739	593	1,080	5,600	3,070	633	577	512	370
8	602	652	1,820	678	577	1,060	*7,000	2,700	598	570	512	345
9	560	748	*1,890	660	626	1,020	8,680	2,400	550	564	492	335
10	530	915	1,670	660	660	940	10,200	2,410	518	538	492	370
11	530	1,030	1,650	620	720	880	10,500	2,420	619	512	460	392
12	530	1,080	1,530	620	739	860	10,300	2,190	656	524	440	365
13	577	1,220	1,450	600	784	840	9,970	1,910	696	524	446	366
14	757	1,220	1,350	585	760	*860	9,490	1,640	720	551	460	360
15	695	1,080	1,240	618	760	880	8,550	1,900	877	544	479	340
16	626	896	1,160	793	740	900	7,350	1,680	886	498	472	340
17	577	839	1,100	830	740	900	6,270	1,460	704	518	416	355
18	545	811	1,070	784	*720	915	5,950	1,470	722	524	375	375
19	508	757	1,120	713	720	940	6,230	1,540	859	538	370	355
20	472	669	1,400	669	720	980	6,820	1,500	895	584	345	330
21	472	593	1,800	635	720	1,040	7,220	1,320	952	584	360	360
22	479	530	1,950	593	700	1,080	7,310	1,220	980	696	365	375
23	485	530	1,900	593	700	1,080	6,970	1,180	942	850	360	360
24	530	530	1,800	577	680	1,060	6,350	1,240	805	1,210	350	386
25	500	460	1,650	538	680	1,040	5,480	1,070	746	1,270	375	410
26	479	447	1,450	522	660	1,020	4,500	1,050	720	1,140	422	466
27	515	428	1,300	568	660	1,000	3,830	1,070	746	971	350	633
28	508	374	1,220	585	640	1,000	2,980	1,060	712	877	375	656
29	492	360	1,140	593	640	1,010	2,800	1,080	805	823	386	680
30	485	348	1,080	585	-	1,120	2,760	1,030	924	780	422	584
31	508	-	1,020	552	-	2,260	-	914	-	688	404	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17,074	757	472	551	0.566	0.65
November	20,560	1,220	346	685	.704	.79
December	41,501	1,950	342	1,339	1.38	1.59
Calendar year 1939	500,067	7,590	328	1,370	1.41	19.13
January	20,970	960	522	676	.695	.80
February	19,441	784	552	670	.689	.74
March	30,135	2,250	620	972	1.00	1.15
April	184,590	10,500	2,760	6,153	6.32	7.05
May	61,724	3,950	914	1,991	2.05	2.36
June	23,245	980	518	775	.797	.89
July	21,835	1,270	498	704	.724	.83
August	13,854	648	345	447	.459	.53
September	12,280	680	330	409	.420	.47
Water year 1939-40	467,209	10,500	330	1,277	1.31	17.85

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 13-15, Dec. 21 to Jan. 6, Jan. 9-13, Feb. 11, Feb. 14 to Mar. 5, Mar. 8-17, 19-28, Mar. 31 to Apr. 8.

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 1940.

Average discharge.- 24 years, 516 second-feet.

Extremes.- Maximum discharge during year, 4,050 second-feet Apr. 19 (gage height, 7.38 feet); minimum, about 42 second-feet Sept. 19, 20.
1916-40: 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 faulty 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 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 19						Apr. 20 to Sept. 30					
1.2	55	2.1	204	4.1	1,095	1.0	57	1.8	125	2.6	325
1.3	65	2.4	288	5.0	1,750	1.3	65	2.0	159	3.0	502
1.5	89	2.8	428	6.0	2,630	1.6	98	2.3	228	3.5	750
1.8	138	3.3	648	7.0	3,630						

Note.- Same as preceding table above 3.5 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	142	115	240	135	150	724	1,670	291	a225	169	63
2	140	218	120	225	135	150	904	1,970	236	a215	146	72
3	118	247	237	210	135	146	1,050	2,190	243	a210	130	72
4	95	220	582	200	135	176	1,110	2,100	207	a195	124	67
5	84	190	729	190	133	236	1,220	1,770	197	a180	115	52
6	75	192	745	180	133	270	1,440	a1,500	177	a159	a121	57
7	70	199	*591	175	142	279	1,480	a1,300	159	136	a124	53
8	65	226	600	170	160	260	1,650	a1,140	154	121	107	49
9	61	380	729	165	171	250	2,390	a980	a205	111	101	49
10	64	442	734	160	173	235	3,000	a840	a251	103	94	a52
11	93	460	620	160	202	220	2,990	740	231	97	88	a56
12	160	568	540	158	230	210	3,290	655	218	98	a84	a60
13	171	563	470	156	250	200	3,160	585	247	98	a80	a58
14	156	411	410	160	250	205	2,460	521	263	93	a84	51
15	175	379	360	197	250	214	1,930	a454	245	91	a88	47
16	162	319	320	240	245	*233	1,610	a490	270	96	a78	45
17	146	298	317	260	235	241	1,620	a580	245	119	a67	a44
18	126	260	337	230	225	236	2,110	625	212	121	61	a43
19	110	239	376	210	*220	255	3,540	610	212	108	59	a42
20	100	198	436	195	210	267	a3,600	580	248	107	62	a42
21	96	191	634	185	205	273	a2,800	575	254	224	64	45
22	100	180	693	175	195	264	a2,250	536	254	545	61	48
23	115	154	640	165	190	247	a1,850	483	220	575	60	51
24	124	137	540	155	180	230	a1,550	425	186	625	58	57
25	115	114	470	150	175	220	a1,350	369	169	502	57	82
26	111	114	420	145	170	215	a1,250	369	165	399	56	146
27	126	120	380	*145	165	215	1,190	426	220	357	57	136
28	150	104	340	140	160	214	1,190	395	254	303	51	114
29	152	104	310	140	155	225	1,270	344	242	258	48	99
30	140	112	280	140	-	323	1,410	329	a240	195	47	88
31	122	-	260	135	-	502	-	303	-	181	a50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,649	175	61	118	0.457	0.53
November	7,481	568	104	249	.965	1.08
December	14,335	745	115	462	1.79	2.06
Calendar year 1939	145,154	2,290	35	398	1.54	20.92
January	5,556	260	135	179	.694	.80
February	5,364	250	133	185	.717	.77
March	7,361	502	146	237	.919	1.06
April	57,388	3,600	724	1,913	7.41	8.27
May	25,854	2,190	303	834	3.23	3.72
June	6,715	291	154	224	.868	.97
July	6,847	625	91	221	.857	.99
August	2,591	169	47	83.6	.324	.37
September	1,950	146	42	65.0	.252	.28
Water year 1939-40	145,091	3,600	42	396	1.53	20.90

Peak discharge.- Apr. 13 (12:30 a.m.) 3,550 sec.-ft.; Apr. 19 (10 p.m.) 4,050 sec.-ft.
* Winter discharge measurement made on this day.
a Faulty or no gage-height record; discharge estimated.
Note.- Stage-discharge relation affected by ice Dec. 11-15, Dec. 23 to Jan. 10, Jan. 16 to Feb. 4, Feb. 12 to Mar. 2, Mar. 8-14, and 24-27.

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 1940.

Average discharge.- 16 years, 568 second-feet.

Extremes.- Maximum discharge during year, 4,800 second-feet Apr. 19 (gage height, 9.00 feet) from rating curve extended above 2,170 second-feet by logarithmic plotting; minimum, 79 second-feet Sept. 20, 21 (gage height, 1.29 feet); minimum daily, 81 second-feet Sept. 20, 21.

1924-40: 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, or of faulty or incomplete gage-height record, which are fair. Occasional diurnal fluctuations at low and medium stages caused by power plants.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 19						Apr. 20 to Sept. 30					
1.5	120	3.1	710	7.0	3,200	1.3	81	1.8	212	2.8	588
1.7	168	4.0	1,190	8.0	4,000	1.5	128	2.2	347	3.9	1,130
2.0	255	5.0	1,800	8.8	4,640						
2.5	438	6.0	2,500								

Note.- Same as preceding table above 3.9 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	486	233	179	300	185	185	700	2,070	537	503	715	109
2	486	353	187	290	*185	185	900	2,260	438	562	511	126
3	348	368	358	280	185	185	1,040	2,250	392	482	354	138
4	249	309	735	270	185	200	1,140	2,020	366	369	246	133
5	201	262	720	260	190	270	1,250	1,640	333	308	203	133
6	168	249	636	260	200	300	1,400	1,310	297	273	209	133
7	158	258	553	250	215	330	1,500	1,060	260	240	253	118
8	143	344	*665	245	230	300	*1,600	920	237	206	228	106
9	136	603	700	245	230	270	3,200	810	280	188	188	102
10	132	622	770	240	220	245	3,350	705	418	340	162	95
11	171	607	631	235	250	225	2,880	624	414	434	151	88
12	348	790	560	235	290	210	3,780	592	333	290	138	88
13	327	650	500	240	310	200	3,080	549	518	250	131	92
14	272	414	470	260	310	205	2,280	507	855	212	131	95
15	265	371	450	290	290	*210	1,800	482	765	182	128	95
16	262	338	440	330	270	225	1,690	507	562	a200	123	90
17	227	330	430	320	260	235	1,840	584	399	a270	111	90
18	192	309	426	300	*250	230	3,030	685	308	a240	104	86
19	171	302	422	280	235	250	4,620	671	311	a190	111	83
20	163	255	596	260	225	280	4,230	602	395	a300	116	81
21	160	245	1,030	245	220	300	3,340	562	399	a660	121	81
22	182	236	950	235	210	290	2,840	511	366	a775	118	90
23	233	224	740	225	205	260	2,310	478	318	620	114	144
24	265	204	600	220	200	240	1,780	442	269	491	109	162
25	233	185	520	210	200	225	1,550	403	246	a400	109	206
26	207	170	460	205	195	220	1,510	430	269	a320	109	280
27	210	155	420	200	190	215	1,600	470	617	a270	109	243
28	240	163	380	195	190	220	1,660	438	715	a240	99	191
29	252	166	350	195	190	250	1,740	450	584	a215	90	160
30	233	168	330	190	-	350	1,860	624	507	206	86	141
31	210	-	310	190	-	500	-	638	-	675	83	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,330	486	132	236	0.704	0.81
November	9,883	790	155	329	.982	1.10
December	16,518	1,030	179	533	1.59	1.83
Calendar year 1939	183,532	3,200	71	503	1.50	20.36
January	7,700	330	190	248	.740	.85
February	6,515	310	185	225	.672	.72
March	7,810	500	185	252	.752	.87
April	65,500	4,620	700	2,183	6.52	7.27
May	26,294	2,260	403	848	2.53	2.92
June	12,708	855	237	424	1.27	1.42
July	10,911	775	182	352	1.05	1.21
August	5,460	715	83	176	.525	.61
September	5,779	280	81	126	.376	.42
Water year 1939-40	180,408	4,620	81	493	1.47	20.03

* 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 Nov. 21, 25-27, Dec. 12-17, Dec. 23 to Apr. 9.

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. at Piercefield, St. Lawrence County.

Drainage area.- 722 square miles.

Records available.- August 1908 to September 1940.

Average discharge.- 32 years, 1,280 second-feet.

Extremes.- Maximum discharge during year, 6,300 second-feet May 7 (gage height, 10.80 feet); minimum daily, 115 second-feet Sept. 22.
1908-40: Maximum discharge, 7,580 second-feet Apr. 17, 1922 (gage height, 11.8 feet); minimum daily, 11 second-feet Sept. 2, 1913.

Remarks.- Records excellent. Large diurnal fluctuation in flow for short periods caused by paper mill.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)

2.3	107	3.5	329	5.7	1,150	9.0	3,900
2.6	151	4.1	494	6.7	1,760	10.0	5,150
3.0	221	4.8	745	7.8	2,660	10.8	6,300

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	296	377	560	508	324	483	3,740	1,840	1,110	893	937
2	306	324	374	537	510	319	596	4,210	1,870	1,130	911	860
3	480	331	385	536	520	308	623	4,710	1,860	1,160	928	746
4	388	299	380	519	521	278	673	5,180	1,720	1,180	946	736
5	362	286	383	542	506	218	702	5,630	1,280	1,200	914	704
6	518	289	394	624	502	218	732	6,020	1,240	1,200	862	683
7	628	286	410	632	494	236	755	6,180	1,320	1,170	755	658
8	623	277	456	646	474	256	816	6,220	1,320	1,120	720	648
9	614	292	461	615	400	270	926	6,140	1,310	1,070	697	588
10	488	290	489	553	401	278	964	5,940	1,290	1,020	647	579
11	388	280	516	500	410	280	1,050	5,610	1,240	965	585	587
12	326	281	554	580	441	266	1,230	5,250	1,210	919	560	573
13	293	286	534	734	402	260	1,360	4,920	1,190	810	528	570
14	280	300	582	748	407	258	1,440	4,550	1,180	522	506	564
15	284	293	547	605	408	250	1,500	4,260	1,140	528	553	558
16	264	299	522	452	378	286	1,570	3,920	1,050	556	512	555
17	256	322	502	430	394	275	1,660	3,690	1,080	572	568	540
18	258	321	515	413	378	280	1,920	3,490	1,170	562	522	506
19	179	294	499	401	404	301	2,240	3,350	1,270	558	527	392
20	170	325	510	384	407	348	2,520	3,230	1,070	598	720	291
21	177	326	490	368	401	458	2,740	3,090	1,060	645	602	128
22	181	327	524	364	335	454	2,910	2,960	1,060	670	584	115
23	271	328	566	362	333	440	3,020	2,870	1,020	702	592	124
24	282	330	547	363	338	424	3,050	2,750	1,020	778	578	223
25	286	326	564	361	346	410	3,040	2,640	976	812	573	290
26	284	335	558	365	356	400	3,030	2,510	962	838	565	394
27	339	336	516	367	350	389	3,030	2,390	995	801	577	488
28	300	343	595	365	339	385	3,090	2,240	1,030	773	602	530
29	346	377	575	362	325	382	3,190	2,160	1,060	734	622	483
30	332	381	554	376	-	494	3,390	2,100	1,080	815	726	494
31	280	-	566	504	-	435	-	2,000	-	883	1,100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,369	628	156	334	0.463	0.53
November	9,380	381	277	313	.434	.48
December	15,446	595	374	498	.690	.80
Calendar year 1939	358,483	5,770	35	982	1.36	18.47
January	15,168	748	361	489	.677	.78
February	11,988	521	325	413	.572	.62
March	10,090	458	218	325	.450	.52
April	54,250	3,390	483	1,808	2.50	2.79
May	123,950	6,220	2,000	3,998	5.54	6.39
June	36,913	1,870	962	1,230	1.70	1.90
July	26,401	1,200	522	852	1.18	1.36
August	20,975	1,100	506	677	.938	1.08
September	15,544	937	115	518	.717	.80
Water year 1939-40	350,463	6,220	115	958	1.33	18.05

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 6¾ 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 1940.
Average discharge.- 27 years (1910-13, 1914-17, 1919-40), 1,077 second-feet.
Extremes.- Maximum discharge during year, 6,310 second-feet Apr. 19 (gage height, 9.60 feet); maximum gage height, 10.36 feet Mar. 31 (ice jam); minimum discharge, 158 second-feet Sept. 18-21 (gage height, 5.78 feet).
1910-17, 1919-40: 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, which are fair.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 19

5.9	255	6.6	913	S.7	4,350
6.0	330	7.2	1,720	9.1	5.180
6.3	592	S.0	3,020	9.6	6,310

Apr. 20 to Sept. 30

5.7	115	6.6	887
5.S	173	7.0	1,420
6.0	313	7.2	1,720
6.3	569		

Note.- Same as preceding table above 7.2 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	833	454	338	420	280	280	1,100	3,860	668	1,010	551	186
2	833	696	446	400	280	280	1,400	3,970	668	1,150	599	240
3	767	682	806	390	270	290	1,600	3,970	658	1,020	514	345
4	682	622	1,100	380	270	320	1,700	3,590	569	830	434	368
5	536	517	980	360	270	400	1,800	3,150	523	732	360	313
6	370	536	937	350	280	*440	1,850	2,640	477	753	321	284
7	330	554	913	350	290	460	1,900	2,340	452	628	313	269
8	315	703	920	350	310	440	*2,050	2,040	443	468	321	233
9	308	1,090	*1,020	340	310	410	2,900	1,700	468	400	306	213
10	338	998	1,200	340	290	390	3,100	1,520	551	477	291	200
11	379	1,110	940	330	310	370	2,800	1,350	700	352	255	186
12	463	1,300	780	330	350	350	3,840	1,270	710	321	247	180
13	564	1,160	680	330	380	340	3,240	1,200	710	376	247	173
14	489	845	620	360	360	350	2,810	1,080	808	313	269	170
15	481	720	580	420	350	370	2,500	985	1,050	233	220	167
16	481	705	540	460	340	390	2,570	973	1,080	291	200	167
17	446	756	520	450	330	400	2,600	1,210	973	307	206	164
18	420	592	500	420	320	390	4,600	1,270	936	374	206	161
19	387	520	490	400	320	410	6,090	1,210	2,370	291	206	161
20	350	450	700	380	310	430	5,380	1,130	2,280	306	213	161
21	308	420	1,140	360	310	450	4,840	1,040	1,570	452	200	164
22	395	390	1,020	340	300	440	4,370	985	1,200	589	200	186
23	573	360	800	330	300	410	3,660	1,090	912	628	206	186
24	592	330	700	320	290	390	3,110	973	658	609	213	200
25	564	310	620	310	290	380	2,810	876	628	609	200	368
26	454	270	560	310	290	370	2,690	864	613	579	180	284
27	454	292	520	300	280	360	2,890	763	1,210	785	167	298
28	554	322	500	300	280	370	3,200	710	1,310	753	164	345
29	554	322	470	290	280	420	3,480	658	1,140	763	164	384
30	517	330	450	290	-	560	3,630	609	998	689	167	255
31	507	-	440	280	-	820	-	618	-	523	167	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15,224	833	308	491	0.797	0.92
November	18,356	1,300	270	612	.994	1.11
December	22,230	1,200	338	717	1.16	1.34
Calendar year 1939	328,938	5,160	158	901	1.46	19.87
January	10,990	460	280	355	.576	.66
February	8,840	380	270	305	.495	.53
March	12,480	820	280	403	.654	.75
April	90,510	6,090	1,100	3,017	4.90	5.47
May	49,644	3,970	609	1,601	2.60	3.00
June	27,333	2,370	443	911	1.48	1.65
July	17,611	1,150	233	568	.922	1.06
August	8,307	599	164	268	.435	.50
September	7,011	384	161	234	.380	.42
Water year 1939-40	288,536	6,090	161	788	1.28	17.41

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 15, 19-25, Dec. 4, 5, Dec. 8 to Apr. 11.

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 1940.

Average discharge.- 15 years, 229 second-feet.

Extremes.- Maximum discharge during year, 1,430 second-feet May 2 (gage height, 3.58 feet); minimum, 22 second-feet (regulated) Oct. 18 (gage height, 0.50 foot); minimum daily, 53 second-feet Nov. 4.

1925-40: 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 good. 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 1939-40 (gage height, in feet, and discharge, in second-feet)

0.8	46	1.1	80	1.4	139	1.8	260	2.5	605
.9	56	1.2	95	1.5	165	2.0	340	3.0	960
1.0	67	1.3	115	1.6	194	2.2	435	3.6	1,450

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	227	81	130	109	96	230	1,270	137	394	176	188
2	111	229	87	134	108	91	243	1,410	192	392	155	160
3	83	226	185	113	107	95	242	1,300	183	305	134	132
4	79	53	213	132	104	100	253	983	178	253	128	107
5	93	98	132	113	102	103	231	735	149	263	122	113
6	103	131	158	119	102	100	211	576	124	215	107	95
7	110	115	160	117	104	99	202	463	113	180	129	94
8	138	147	148	115	102	99	216	399	75	159	116	91
9	106	218	123	115	101	99	310	336	197	149	100	100
10	118	199	175	112	99	94	380	290	186	121	100	141
11	173	197	145	114	108	92	369	261	175	106	93	177
12	117	239	128	116	109	81	526	247	154	125	92	163
13	104	172	147	117	112	90	437	184	270	112	112	154
14	111	168	134	99	110	98	354	184	309	93	a114	136
15	175	157	117	157	107	102	299	183	227	93	a108	140
16	111	153	125	136	106	106	301	203	191	134	a96	124
17	81	146	136	133	102	109	378	216	176	135	a88	123
18	58	149	119	124	103	97	719	245	173	124	92	120
19	86	148	127	133	107	112	1,220	216	506	100	96	117
20	77	102	138	128	107	112	1,060	207	459	108	103	112
21	79	121	215	126	103	100	811	226	383	226	96	118
22	146	139	152	127	95	99	632	208	317	174	97	121
23	185	119	154	122	98	87	497	205	251	150	83	108
24	184	114	156	120	95	97	448	185	222	146	82	107
25	143	97	144	121	102	100	447	179	208	344	82	175
26	168	96	136	120	102	97	515	161	264	477	88	129
27	187	114	134	120	95	97	580	156	525	432	74	121
28	80	108	122	118	97	94	664	162	392	308	80	118
29	92	131	129	116	96	104	787	172	316	243	78	106
30	99	113	151	110	-	132	998	145	313	226	73	107
31	145	-	141	111	-	185	-	123	-	239	79	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,767	225	58	122	0.924	1.07
November	4,426	239	53	148	1.12	1.25
December	4,412	215	81	142	1.08	1.24
Calendar year 1939	70,936	1,270	53	194	1.47	20.01
January	3,768	157	99	122	.924	1.07
February	2,992	112	95	103	.780	.84
March	3,167	185	81	102	.773	.89
April	14,560	1,220	202	485	3.67	4.10
May	11,830	1,410	123	382	2.89	3.33
June	7,365	525	75	246	1.86	2.08
July	6,526	477	93	211	1.60	1.84
August	3,173	176	73	102	.773	.89
September	3,797	188	91	127	.962	1.07
Water year 1939-40	69,783	1,410	53	191	1.45	19.67

a No gage-height record; discharge computed on basis of records of operation of power plant just upstream.

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 1940.
Average discharge.- 14 years (1926-40), 177 second-feet.
Extremes (regulated).- Maximum discharge during year, 993 second-feet May 3 (gage height, 4.84 feet); minimum, 47 second-feet Feb. 21 (gage height, 1.17 feet); minimum daily, 69 second-feet Feb. 25, 28.
1908, 1926-40: 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, 0.25 foot); minimum daily, 26 second-feet July 8, 1934.
Remarks.- Records excellent except those for periods of ice effect, which are good. Flow regulated by Upper and Lower Chateaugay Lakes. Large diurnal fluctuation at all stages caused by power operations.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 3

1.4	67	2.4	208	4.0	649
1.6	88	2.8	290	4.4	805
1.8	113	3.2	389	4.8	975
2.0	142	3.6	511		

May 4 to Sept. 30

1.5	85	2.0	150
1.6	97	2.4	212
1.7	110	2.8	290

Note.- Same as preceding table above 2.8 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	84	77	80	76	71	165	753	121	362	124	111
2	80	82	79	84	76	74	143	902	123	352	121	108
3	77	79	90	84	76	76	147	975	129	344	120	106
4	73	80	78	84	76	76	148	921	135	332	121	105
5	74	78	78	84	76	76	152	849	138	322	115	105
6	75	83	82	84	76	76	*146	797	124	245	115	105
7	76	82	82	84	76	*77	147	737	127	132	115	106
8	75	87	81	84	78	76	181	620	140	121	114	107
9	76	84	80	84	77	74	338	474	152	120	113	106
10	78	82	*82	82	76	75	207	401	148	112	112	106
11	80	90	82	82	77	73	203	392	140	112	114	105
12	78	83	82	82	79	74	166	330	136	109	114	104
13	76	81	80	84	75	74	321	250	205	111	113	105
14	76	81	80	86	77	76	378	209	280	110	111	105
15	76	87	82	92	77	76	376	151	313	103	110	104
16	76	84	89	78	*75	76	420	147	415	104	110	104
17	76	82	78	72	76	74	431	149	381	104	107	104
18	76	80	80	81	75	80	549	128	385	98	108	104
19	77	79	79	82	75	82	643	128	514	93	110	93
20	77	80	e7	82	74	80	690	122	511	136	108	92
21	79	80	84	80	74	80	686	122	495	133	108	92
22	80	81	82	80	74	80	656	124	476	104	108	90
23	79	80	82	80	72	78	638	126	395	99	108	91
24	77	76	82	80	70	78	658	128	308	104	109	96
25	77	80	80	80	69	78	651	129	306	118	107	93
26	80	80	80	80	71	78	635	124	373	189	109	93
27	79	80	80	80	71	80	620	117	485	130	106	94
28	79	79	80	78	69	82	617	118	460	127	107	89
29	78	77	78	78	72	92	627	120	425	122	105	89
30	78	78	78	78	-	134	668	121	145	135	107	94
31	77	-	78	78	-	193	-	124	-	123	104	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,398	83	73	77.4	-	-
November	2,439	90	76	81.3	-	-
December	2,512	90	77	81.0	-	-
Calendar year 1939	60,409	939	73	166	1.48	20.07
January	2,527	92	72	81.5	-	-
February	2,165	79	69	74.7	-	-
March	2,569	193	71	82.9	-	-
April	12,407	690	143	414	-	-
May	10,779	975	117	348	-	-
June	8,463	514	121	282	-	-
July	4,906	362	93	158	-	-
August	3,453	124	104	111	-	-
September	3,006	111	89	100	-	-
Water year 1939-40	57,624	975	69	157	1.40	19.14

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 25-27, Dec. 5, 6, 11-15, Dec. 21 to Jan. 14, Jan. 19 to Feb. 5, Mar. 2, 3, 12-29.
Decrease in storage in Chateaugay Lakes during calendar year 1939, about 1,456,646,400 cubic feet (equivalent mean discharge, 4.62 sec.-ft.; run-off 0.56 inch); decrease in elevation, 1.10 ft. Increase during water year 1939-40, about 45,023,616 cubic feet (equivalent mean discharge 1.42 sec.-ft.; run-off 0.17 inch), increase in elevation, 0.34 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 R. R. bridge and 1 mile south of Fort Montgomery. Gage heights for 1871-1907 obtained from staff gage at site 1 mile downstream at same datum.

Drainage area.- 8,277 square miles.

Records available.- January 1875 to September 1916 (monthly discharge) at Chambly, Quebec, published in Water-Supply Paper 424, pp. 20-24. 1863-70 (maximum and minimum monthly gage heights) published in Water-Supply Paper 97, p. 340. March 1871 to September 1940 (daily gage heights). Gage heights 1871-1903 not previously published; those for 1904-7 supersede figures published in Water-Supply Papers 129, 170, 206, and 244. Gage heights prior to Oct. 1, 1925, published as Richelieu River at Fort Montgomery, Rouses Point, N. Y.

Extremes.- Maximum gage height during water year 1939-40, 7.30 feet May 6; minimum, 0.31 foot Oct. 28.

1871-1940: Maximum gage height observed, 8.80 feet Mar. 30, 1903; minimum observed, -0.60 foot Nov. 13, 1908.

Observations at St. Johns, Quebec, indicate a maximum gage height of 8.83 feet during April 1869.

Maximum and minimum gage heights observed, in feet, for the water years 1871-1905 are contained in the following table:

Water year	Maximum	Date	Minimum	Date	Water year	Maximum	Date	Minimum	Date
1871	4.80	Apr. 20, May 8	1.20	Aug. 25	1890	6.50	May 25	1.50	Aug. 19
1872a	5.00	May 11	.90	Oct. 12	1891	7.10	Apr. 22	.80	Sept.30
1873a	7.34	Apr. 21	.70	Sept.30	1892	6.00	July 11	.30	Oct. 31-Nov.2,6,8
1874a	6.05	May 25	.63	Oct. 7	1893	5.40	May 9,10	.90	Feb. 3
1875	5.27	21	.60	Jan. 3	1894	4.90	Mar. 23	.45	Sept.19
1876	7.85	18	.85	Sept.28	1895	6.80	Apr. 24	.25	Oct. 1
1877	5.10	Apr. 29	.32	Dec. 29	1896	8.60	25	.20	25, Nov.2,4
1878	5.60	May 20	1.18	Oct. 6					
1879	6.75	5	.79	Sept.14	1897	6.30	May 1	.65	Oct. 2
1880	5.00	Apr. 29	.10	27,30	1898	7.20	Mar. 28	.65	Sept.24
1881	4.97	May 21	-.14	Oct. 12	1899	6.75	May 2	.05	19
1882	4.35	June 15	.28	17	1900	7.60	Apr. 26,27	.15	Oct. 21,27
1883b	5.60	Apr. 22	.15	Jan.1,7,28	1901	7.65	26,27, May 2	.70	Nov. 9
1884b	6.40	25	.25	Nov. 1, 4					
1885b	6.60	28	.30	Oct. 4	1902	7.70	Mar.27, Apr.1	.40	13
1886b	5.90	25	.60	Sept.28	1903	8.80	Mar. 30	.90	Sept.24
1887b	7.60	May 1	.60	Oct.25,28	1904	5.68	May 6	.75	Dec. 8-10,18
1888b	7.20	16	.20	Nov. 7,10,16	1905c	5.55	Apr.13		
1889	5.40	1	1.60	Sept.16					

a No winter records.
b Gage read every third day.
c Revised figure; previously published as 5.45 feet.

Remarks.- Staff gage read once daily.

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

Gage height, in feet, 1871-1907, 1939-40

1871

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	4.35	4.60	3.50	2.05	1.50	2.10
2						-	4.25	4.40	3.40	2.00	1.50	2.20
3						-	4.35	4.30	3.35	2.00	1.50	2.30
4						-	4.25	4.50	3.30	2.15	1.50	2.60
5						-	4.20	4.55	3.20	2.00	1.50	2.50
6						-	4.18	4.60	3.00	2.03	1.50	2.20
7						2.30	4.20	4.70	3.00	1.95	1.70	2.10
8						2.40	4.20	4.80	2.95	1.90	1.80	2.15
9						2.60	4.50	4.75	2.90	1.95	1.65	2.30
10						2.70	4.60	4.75	2.85	1.90	1.60	2.10
11						2.90	4.55	4.70	3.00	1.85	1.50	2.15
12						3.30	4.65	4.75	2.85	1.80	1.60	2.10
13						3.75	4.60	4.70	2.75	1.85	1.55	1.95
14						4.10	4.60	4.65	2.60	1.90	1.50	1.90
15						4.20	4.55	4.60	2.60	1.85	1.55	1.90
16						4.30	4.60	4.60	2.66	1.80	1.40	1.90
17						4.50	4.55	4.50	2.70	1.75	1.50	1.80
18						4.15	4.60	4.40	2.65	1.75	1.40	1.85
19						4.20	4.60	4.30	2.65	1.75	1.40	1.90
20						4.20	4.80	4.20	2.60	1.70	1.30	1.70
21						4.30	3.40	4.15	2.55	1.63	1.50	1.60
22						4.40	4.60	4.10	2.45	1.75	1.50	1.90
23						4.60	4.55	3.95	2.40	1.70	1.35	1.80
24						4.70	4.45	3.80	2.30	1.65	1.25	1.65
25						4.60	4.55	3.75	2.20	1.60	1.20	1.70
26						4.55	4.70	3.70	2.25	1.65	1.55	1.60
27						4.50	4.60	3.60	2.15	1.60	1.60	1.65
28						4.50	4.50	3.65	2.10	1.55	2.20	1.50
29						4.60	4.60	3.50	2.05	1.60	2.10	1.65
30						4.35	4.50	3.55	2.00	1.55	1.90	1.50
31						4.30	-	3.50	-	1.50	2.00	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1871-72

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.50	1.60					-	5.20	3.60	3.48	2.80	4.52
2	1.55	1.55					-	4.85	3.80	3.45	2.75	4.60
3	1.60	1.50					-	4.80	3.75	3.40	2.80	4.62
4	1.50	1.55					-	4.75	3.70	3.35	2.77	4.65
5	1.65	1.60					-	4.90	3.75	3.30	2.82	4.72
6	1.50	1.60					-	4.93	3.70	3.25	2.85	4.65
7	1.35	1.50					-	4.90	3.95	3.20	3.02	4.75
8	1.50	1.60					-	4.73	3.98	3.20	3.00	4.55
9	1.55	1.55					-	4.83	4.05	3.25	3.05	4.95
10	1.80	1.60					2.10	4.75	4.03	3.20	2.95	4.90
11	1.30	1.55					2.55	5.00	4.10	3.15	2.90	4.95
12	.90	1.65					2.90	4.55	4.25	3.05	2.95	4.97
13	1.30	1.55					3.30	4.52	4.20	3.00	3.00	4.82
14	1.70	1.50					3.55	4.50	4.40	2.85	3.25	4.65
15	2.00	1.45					3.85	4.30	4.28	2.90	3.20	4.62
16	1.30	1.40					3.90	4.25	4.25	2.87	3.35	4.60
17	1.25	1.40					4.00	4.20	4.18	2.85	3.45	4.57
18	1.25	1.40					4.05	4.18	4.10	2.80	3.90	4.60
19	1.50	1.45					4.10	4.25	4.00	2.75	4.00	4.65
20	1.10	1.60					4.15	4.20	4.15	2.70	4.02	4.40
21	1.60	1.55					4.22	4.10	4.10	2.80	4.10	4.45
22	1.70	1.50					4.30	4.00	4.00	2.75	4.20	4.40
23	1.10	1.50					4.55	3.80	3.85	2.70	4.30	4.40
24	1.00	1.45					4.63	3.95	3.95	2.75	4.75	4.65
25	1.50	1.40					4.67	3.50	3.85	2.82	4.82	4.65
26	1.30	1.35					4.65	3.45	3.79	3.25	4.90	4.50
27	1.50	1.50					4.60	3.80	3.70	2.95	4.60	4.45
28	1.45	1.40					4.80	3.78	3.60	2.75	4.52	4.32
29	1.55	1.45					4.83	3.60	3.55	2.72	4.00	4.30
30	1.50	1.40					4.88	3.65	3.50	2.70	5.00	4.30
31	1.60	-					-	3.60	-	2.72	4.61	-

1872-73

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.15	3.75	3.55			-	2.80	6.93	5.40	3.00	2.20	1.50
2	4.05	3.80	3.50			-	3.10	7.01	5.20	2.95	2.25	1.35
3	4.00	3.83	3.45			-	3.25	7.05	5.10	2.90	2.20	1.34
4	3.42	3.90	3.38			-	3.48	7.10	5.15	2.80	2.15	1.37
5	-	4.00	3.60			-	3.72	7.00	4.95	2.75	2.12	1.30
6	-	4.15	3.39			-	3.95	7.00	4.90	2.75	2.20	1.25
7	3.82	3.83	3.35			-	4.10	6.90	4.75	2.68	2.15	1.20
8	3.71	3.82	3.65			-	4.40	7.09	4.70	2.65	2.05	1.15
9	3.72	3.80	3.30			-	5.10	6.90	4.65	2.55	2.00	1.12
10	3.70	3.74	-			-	5.45	6.95	4.60	2.60	1.95	1.14
11	3.75	4.10	-			-	6.00	6.85	4.50	2.50	1.98	1.10
12	3.95	4.00	-			2.80	6.28	6.70	4.40	2.50	1.96	1.15
13	3.90	3.80	-			2.82	6.62	6.64	4.45	2.60	1.95	1.18
14	3.75	4.20	-			2.81	6.80	6.73	4.40	2.65	1.85	.90
15	3.75	4.40	-			2.80	7.00	6.75	4.35	2.45	1.90	.85
16	3.72	4.20	-			2.83	7.10	6.70	4.25	2.42	1.85	.85
17	3.85	4.33	-			2.85	7.15	6.60	4.00	2.49	1.70	.90
18	3.72	4.40	-			2.80	7.20	6.55	4.00	2.50	1.65	1.00
19	3.76	4.20	-			2.75	7.25	6.45	3.90	2.30	1.68	1.05
20	3.84	4.10	-			2.80	7.27	6.32	3.60	2.35	1.60	.82
21	4.00	4.30	-			2.75	7.34	6.40	3.60	2.35	1.68	.80
22	3.85	4.15	-			2.77	7.30	6.43	3.55	2.35	1.70	.85
23	3.83	3.95	-			2.78	7.25	6.30	3.48	2.30	1.55	.86
24	3.80	3.90	-			2.75	7.25	6.10	3.43	2.28	1.50	.75
25	3.75	4.02	-			2.73	7.20	5.95	3.38	2.35	1.50	.90
26	3.70	3.75	-			2.70	7.15	5.80	3.30	2.23	1.45	.83
27	3.55	3.73	-			2.68	7.05	5.75	3.20	2.28	1.50	.86
28	3.75	3.70	-			2.69	7.10	5.70	3.10	2.20	1.45	.75
29	3.80	3.65	-			2.65	6.95	5.64	3.15	2.35	1.48	.84
30	3.80	3.60	-			2.70	7.00	5.50	3.10	2.25	1.46	.70
31	3.76	-	-			2.83	-	5.48	-	2.15	1.44	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1873-74

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.84	2.40	2.20	-				4.05	5.60	4.50	4.20	2.60
2	.70	2.60	2.30	-				4.07	5.65	4.48	3.85	2.62
3	.67	2.35	2.45	-				4.10	5.67	4.35	3.87	2.50
4	.75	2.40	2.50	-				4.12	5.70	4.38	3.78	2.55
5	.68	2.15	2.65	-				4.15	5.65	4.28	3.85	2.85
6	.70	2.10	2.75	4.10				4.25	5.35	4.30	3.82	2.35
7	.63	2.20	3.25	3.90				4.30	5.30	4.25	3.85	2.30
8	.90	2.25	3.20	4.00				4.35	5.12	4.15	3.80	2.25
9	-	2.15	3.25	4.20				4.50	5.30	4.10	3.78	2.28
10	1.10	2.10	3.00	4.35				4.60	5.10	4.15	3.77	2.24
11	1.25	2.12	3.50	4.75				4.70	5.03	4.00	3.80	2.15
12	1.20	2.20	3.25	4.70				4.90	5.00	3.85	3.88	2.10
13	1.18	2.15	3.20	4.72				4.92	4.90	4.00	3.55	2.30
14	1.15	2.10	3.25	4.70				5.00	4.85	3.90	3.60	2.15
15	1.20	2.20	3.10	-				5.10	4.80	3.85	3.55	2.20
16	1.25	2.15	-	-				5.20	4.70	3.82	3.54	2.00
17	1.05	2.07	-	-				5.30	4.55	3.70	3.60	1.90
18	1.60	2.00	-	-				5.40	4.80	3.70	3.50	2.20
19	1.10	2.05	-	-				5.45	5.00	3.90	3.50	2.25
20	1.20	2.10	-	-				5.70	5.20	3.75	3.33	2.28
21	1.50	2.15	-	-				5.78	5.03	3.55	3.25	1.98
22	1.75	2.20	-	-				5.75	5.00	3.48	3.20	2.00
23	2.00	2.12	-	-				5.95	4.98	3.60	3.15	1.95
24	2.00	2.18	-	3.80				5.95	4.96	3.50	3.10	1.92
25	1.90	2.07	-	3.90				6.05	4.90	3.45	3.15	1.90
26	2.09	2.05	-	4.00				6.00	4.85	3.41	3.10	1.82
27	1.95	2.10	-	3.85				6.00	4.87	3.15	2.98	2.00
28	2.10	2.15	-	3.95				5.92	4.70	3.35	2.90	1.95
29	2.40	2.18	-	3.75				5.89	4.65	3.45	2.85	1.60
30	2.30	2.15	-	3.80				5.85	4.55	3.70	2.85	1.55
31	2.29	-	-	-				5.70	-	4.20	2.73	-

1874-75

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.70	1.40	1.30	-	0.72	1.20	2.50	4.60	4.65	2.70	1.85	1.75
2	2.00	1.30	.90	0.65	.71	1.25	2.75	4.65	4.70	2.68	1.80	1.73
3	1.75	1.35	1.20	.60	.73	1.30	3.05	4.62	4.60	2.85	1.85	1.74
4	1.78	1.40	.85	.75	.70	1.35	3.35	4.65	4.38	2.68	1.75	1.70
5	1.78	1.50	1.25	.78	.70	1.38	3.68	4.57	4.40	2.82	1.80	1.70
6	1.80	1.10	1.10	.73	.70	1.40	3.95	4.54	4.28	2.60	1.95	1.65
7	1.72	1.15	1.00	.70	.69	1.45	4.10	4.60	4.12	2.80	1.75	1.50
8	1.70	1.30	.80	.68	.70	1.45	4.35	4.62	4.05	2.82	1.75	1.68
9	1.80	1.10	1.40	.90	.70	1.43	4.31	4.68	4.00	2.80	1.78	1.56
10	1.85	1.00	1.35	.75	.68	1.45	4.40	4.57	3.95	2.68	1.74	1.00
11	1.88	1.00	1.20	.70	.69	1.40	4.45	4.78	3.87	2.60	1.70	1.48
12	1.70	1.00	.90	.90	.70	1.40	4.50	4.90	3.84	2.68	1.75	1.69
13	1.68	.98	.85	.75	.72	1.42	4.60	5.10	3.60	2.50	1.65	1.48
14	1.70	.90	.80	.70	.70	1.45	4.65	5.13	3.52	2.48	1.68	1.35
15	1.85	1.20	.88	.70	.68	1.48	4.70	5.10	3.42	2.55	1.60	1.30
16	1.80	.85	.75	.68	.69	1.50	4.67	5.17	3.40	2.58	1.62	1.10
17	1.68	1.10	.78	.70	.70	1.70	4.90	5.10	3.35	2.38	1.64	1.03
18	1.55	.75	.80	.67	.68	1.75	4.95	5.10	3.30	2.40	1.70	1.15
19	1.50	.70	.70	.72	.69	1.74	4.98	5.07	3.20	2.36	1.75	1.20
20	1.60	1.00	.70	.70	.70	1.70	4.97	5.25	3.15	2.40	1.90	1.25
21	1.50	.95	.68	.71	.69	1.70	4.92	5.27	3.15	2.38	1.92	1.23
22	1.50	.95	.75	.70	.70	1.72	4.90	5.20	3.12	2.42	1.95	1.30
23	1.45	1.10	.72	.68	.72	1.73	4.80	5.17	3.15	2.40	1.90	1.38
24	1.55	.95	.70	.73	.76	1.75	4.82	5.15	3.08	2.30	1.94	1.40
25	1.50	.90	.68	.70	.78	1.74	4.79	5.15	2.88	2.35	1.92	1.38
26	1.48	.95	.85	.69	.76	1.78	4.77	5.10	2.85	2.28	1.90	1.27
27	1.45	1.50	.65	.70	1.10	1.77	4.72	5.03	2.90	2.12	1.95	1.30
28	1.40	.75	.90	.72	1.15	1.76	4.67	4.93	2.70	2.13	1.94	1.35
29	1.35	.80	.85	.70	-	1.90	4.62	4.85	2.65	2.10	1.86	1.40
30	1.38	.82	.75	.71	-	2.00	4.65	4.80	2.80	2.00	1.78	1.50
31	1.36	-	.65	.70	-	2.15	-	4.71	-	1.90	1.80	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1875-76

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.40	2.38	2.45	2.50	3.25	2.95	3.87	6.30	5.90	3.89	2.30	1.26
2	1.38	2.60	2.50	2.80	3.15	2.89	3.90	6.22	5.85	3.70	2.28	1.00
3	1.45	2.55	2.52	2.85	3.10	2.85	3.95	6.20	5.56	3.72	2.35	1.05
4	1.48	2.50	2.50	2.95	3.08	2.85	3.97	6.30	5.48	3.60	2.30	1.15
5	1.35	2.50	2.49	3.15	3.02	2.88	4.00	6.25	5.40	3.50	2.25	.95
6	1.38	2.60	2.48	3.05	3.00	2.84	4.12	6.28	5.32	3.49	2.20	1.00
7	1.45	2.65	2.40	3.15	2.97	2.90	4.20	6.35	5.21	3.52	2.10	.98
8	1.50	2.63	2.35	3.15	2.90	3.25	4.35	6.43	5.20	3.50	2.08	1.00
9	1.42	2.60	2.38	3.25	2.87	3.75	4.38	6.50	5.15	3.38	2.05	.95
10	1.55	2.75	2.35	3.27	2.85	3.95	4.40	6.60	4.95	3.35	2.03	.97
11	1.50	2.65	2.38	3.23	3.10	4.05	4.45	6.65	4.80	3.30	2.00	1.00
12	1.60	2.62	2.35	3.25	2.86	4.25	4.50	6.85	4.84	3.28	2.00	.95
13	1.63	2.60	2.38	3.27	2.90	4.20	4.65	7.10	5.00	3.25	1.97	.92
14	1.68	2.61	2.25	3.27	3.00	4.20	4.80	7.15	4.98	3.20	1.95	.97
15	1.50	2.70	2.20	3.25	3.15	4.18	5.20	7.15	4.62	3.15	1.80	.95
16	1.85	2.74	2.20	3.21	3.18	4.12	5.60	7.10	4.78	3.10	1.75	.90
17	1.90	2.40	2.15	3.25	3.25	4.10	6.00	7.50	4.76	3.08	1.70	.96
18	1.80	2.60	2.12	3.27	3.20	4.11	6.08	7.85	4.77	3.05	1.68	.92
19	1.85	2.65	2.13	3.25	3.21	4.09	6.10	6.85	4.63	2.89	1.60	.90
20	2.05	2.60	2.15	3.28	3.20	4.07	6.12	6.79	4.15	3.15	1.55	.88
21	2.00	2.58	2.16	3.27	3.20	4.06	6.15	6.75	4.35	2.89	1.50	.90
22	2.03	2.55	2.16	3.35	3.15	4.04	6.12	6.60	4.20	2.75	1.44	.92
23	2.00	2.68	2.15	3.32	3.10	3.95	6.10	6.58	4.10	2.68	1.52	.90
24	1.98	2.50	2.20	3.30	3.13	3.87	6.15	-	4.08	2.60	1.48	.88
25	2.20	2.55	2.18	3.28	3.10	3.85	6.20	6.48	4.10	2.57	1.50	.86
26	2.25	2.65	2.20	3.26	3.07	3.84	6.20	6.55	4.05	2.45	1.30	1.20
27	2.14	2.68	2.25	3.28	3.05	3.80	6.22	6.60	4.10	2.60	1.32	1.00
28	2.12	2.65	2.28	3.18	2.90	3.75	6.20	6.40	3.95	2.45	1.28	.85
29	2.10	2.35	2.35	3.22	2.86	3.78	6.40	6.00	3.90	2.40	1.25	1.10
30	2.20	2.37	2.45	3.18	-	3.80	6.28	6.00	3.87	2.38	1.30	.90
31	2.24	-	2.48	3.20	-	3.82	-	6.05	-	2.35	1.24	-

1876-77

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.88	0.65	0.60	0.34	0.52	0.50	3.75	4.80	3.10	2.10	2.20	1.78
2	.85	.68	.62	.33	.53	.54	3.70	4.75	3.05	2.00	2.18	1.70
3	1.20	.62	.60	.34	.55	.50	3.85	4.70	3.00	2.10	2.20	1.65
4	.88	.68	.60	.35	.55	.52	3.95	4.63	2.80	2.15	2.15	1.72
5	.85	.70	.60	.36	.56	.53	4.00	4.60	2.65	2.15	2.10	1.90
6	1.10	1.00	.63	.40	.56	.52	4.10	4.50	2.50	2.12	2.04	1.82
7	.80	.95	.70	.38	.58	.50	4.15	4.45	2.45	2.20	2.15	1.80
8	.70	.68	.64	.36	.58	.52	4.22	4.36	2.50	2.25	2.10	1.75
9	.72	.72	.60	.38	.57	.65	4.25	4.30	2.69	2.18	2.04	1.70
10	1.10	.70	.62	.40	.58	.90	4.28	4.20	2.60	2.10	2.06	1.65
11	.70	.70	.60	.50	.59	1.20	4.30	4.15	2.58	2.20	2.02	1.63
12	.65	.65	.65	.45	.58	1.32	4.28	4.10	2.45	2.15	2.05	1.61
13	.60	.68	.55	.52	.54	1.40	4.27	4.00	2.40	2.18	2.00	1.60
14	1.00	.50	.58	.40	.56	1.55	4.24	3.90	2.28	2.17	2.00	1.58
15	.90	.58	.40	.45	.58	1.48	4.25	3.85	2.30	2.20	1.95	1.56
16	.85	.60	.38	.45	.57	1.45	4.25	3.80	2.25	2.25	1.94	1.60
17	.60	.62	.44	.50	.56	1.40	4.25	3.75	2.22	2.10	2.00	1.52
18	.58	.61	.40	.48	.55	1.42	4.32	3.70	2.25	2.15	2.02	1.48
19	.62	.70	.40	.49	.53	1.41	4.35	3.68	2.21	2.20	2.00	1.40
20	.64	.72	.37	.55	.52	1.50	4.24	3.65	2.18	2.30	1.98	1.47
21	.64	.60	.38	.52	.53	1.70	4.50	3.60	2.20	2.28	2.00	1.35
22	.66	.68	.39	.52	.54	1.80	4.65	3.50	2.10	2.30	2.01	1.30
23	.76	.64	.35	.50	.53	1.85	4.70	3.45	2.08	2.40	1.98	1.40
24	.70	.62	.38	.55	.54	1.90	4.80	3.40	2.10	2.40	1.95	1.45
25	.75	.68	.37	.52	.52	2.00	4.75	3.36	2.05	2.30	1.90	1.50
26	.68	.72	.40	.54	.51	2.05	4.78	3.30	2.08	2.25	1.98	1.28
27	.65	.65	.39	.52	.50	2.15	4.90	3.27	2.00	2.20	1.89	1.25
28	.60	.62	.35	.50	.55	2.55	4.96	3.25	1.95	2.40	1.75	1.50
29	.62	.60	.32	.50	-	3.05	5.10	3.20	1.90	2.35	1.76	1.27
30	.70	.62	.33	.50	-	3.30	4.80	3.20	1.92	2.25	1.84	1.50
31	1.00	-	.34	.52	-	3.50	-	3.18	-	2.28	1.80	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1877-78

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.40	1.54	2.42	2.35	1.60	1.46	3.27	5.20	3.80	2.35	2.25	2.78
2	1.25	1.63	2.37	2.30	1.62	1.48	3.35	5.10	3.75	2.32	2.27	2.80
3	1.20	1.68	2.50	2.31	1.60	1.48	3.30	4.98	3.70	2.25	2.25	2.85
4	1.50	1.54	2.45	2.30	1.65	1.50	3.27	5.00	3.40	2.26	2.30	3.30
5	1.20	1.75	2.56	2.28	1.64	1.53	3.25	5.10	3.30	2.20	2.38	3.05
6	1.18	1.80	2.60	2.30	1.65	1.60	3.35	5.20	3.25	2.18	2.56	3.00
7	1.22	1.90	2.68	2.26	1.68	1.68	3.47	5.40	3.20	2.15	2.75	3.40
8	1.50	2.00	2.57	2.24	1.65	1.85	3.52	5.35	3.18	2.12	2.80	3.38
9	1.30	1.90	2.60	2.20	1.62	2.02	3.60	5.40	3.15	2.13	2.75	3.40
10	1.25	2.10	2.78	2.21	1.60	2.17	4.00	5.35	3.15	2.05	2.95	3.70
11	1.20	2.15	2.90	2.15	1.60	2.45	3.75	5.32	3.12	2.09	2.80	2.70
12	1.25	2.30	2.80	2.15	1.58	2.65	3.95	5.28	3.10	2.08	2.85	2.73
13	1.27	2.60	2.82	2.18	1.56	2.70	4.30	5.25	3.08	2.06	2.90	3.10
14	1.30	2.75	2.68	2.15	1.55	2.78	4.65	5.10	3.07	2.00	2.90	2.78
15	1.32	2.70	2.75	2.10	1.54	2.85	4.85	5.02	3.05	1.98	3.05	2.50
16	1.35	2.35	2.62	2.08	1.52	2.89	4.88	4.97	3.00	2.05	3.10	2.80
17	1.40	2.38	2.60	2.00	1.50	2.90	4.95	4.95	3.00	2.10	3.15	3.00
18	1.45	2.28	2.62	2.00	1.48	2.95	5.05	4.87	2.96	1.85	3.02	2.40
19	1.50	2.30	2.80	2.02	1.49	3.02	5.05	4.80	2.90	1.78	3.00	2.85
20	1.50	2.32	2.72	2.00	1.50	2.95	5.50	5.60	2.85	1.75	2.98	2.98
21	1.45	2.34	2.70	1.98	1.48	2.98	5.05	4.50	2.78	1.64	2.95	2.45
22	1.40	2.50	2.68	1.95	1.52	2.99	5.08	4.40	2.70	1.60	2.90	2.40
23	1.48	2.55	2.60	1.90	1.50	3.15	5.50	4.35	2.80	1.56	3.00	2.30
24	1.50	2.58	2.58	1.95	1.49	3.23	5.30	4.40	2.85	1.58	3.10	2.50
25	1.50	2.50	2.56	1.90	1.54	3.00	5.10	4.27	2.50	1.60	2.80	2.10
26	1.52	2.48	2.54	1.88	1.53	2.98	5.00	4.15	2.52	1.65	2.77	2.00
27	1.52	2.47	2.56	1.86	1.50	2.90	5.07	4.25	2.50	1.85	2.84	2.05
28	1.56	2.45	2.52	1.75	1.48	3.00	5.00	4.10	2.48	1.88	2.82	1.98
29	1.50	2.40	2.40	1.78	-	3.18	5.03	4.00	2.40	2.05	2.85	2.08
30	1.52	2.38	2.38	1.77	-	3.20	5.12	3.92	-	2.12	2.80	2.00
31	1.70	-	2.32	1.65	-	3.15	-	-	-	2.25	3.00	-

1878-79

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.88	1.61	3.04	3.95	2.84	2.73	3.60	6.65	4.35	3.00	2.10	1.38
2	-	1.60	3.60	3.92	2.82	2.70	3.65	6.70	4.45	2.98	2.05	1.35
3	-	1.55	3.05	3.80	2.81	2.71	3.64	6.75	4.40	2.95	2.00	1.46
4	1.70	1.25	3.12	3.76	2.80	2.74	3.68	6.72	4.32	-	1.95	1.50
5	1.68	1.38	3.22	3.67	2.82	2.65	3.70	6.75	4.26	2.88	1.90	1.15
6	1.62	1.50	3.30	3.58	2.75	2.71	3.75	6.72	4.05	2.95	1.80	1.10
7	1.60	1.40	3.32	3.67	2.73	2.64	3.70	6.67	4.00	3.15	1.82	1.00
8	1.65	1.35	3.31	3.58	2.72	2.62	3.67	6.65	4.03	2.75	2.00	.95
9	2.00	1.27	3.50	3.55	2.67	2.68	3.67	6.58	3.95	2.70	1.75	.90
10	1.45	1.44	3.80	3.52	2.64	2.62	3.75	6.50	3.87	2.65	1.70	.86
11	1.50	1.45	3.85	3.50	2.62	2.58	3.80	6.50	3.85	2.60	1.60	.85
12	1.37	1.50	4.49	3.45	2.65	2.71	3.85	6.45	3.85	2.58	1.58	.88
13	1.44	1.30	4.60	3.40	2.62	2.85	3.92	6.40	3.80	2.56	1.55	1.10
14	1.46	1.50	4.65	3.30	2.65	2.90	3.97	6.30	3.77	2.50	1.52	.79
15	1.50	1.52	4.72	3.27	2.63	2.98	4.04	6.28	3.60	2.40	1.50	1.00
16	1.43	1.50	4.65	3.23	2.60	3.05	4.11	6.25	3.55	2.40	1.48	1.10
17	1.60	1.51	4.62	3.25	2.59	3.08	4.20	6.15	3.60	2.30	1.50	1.05
18	1.28	1.53	4.61	3.20	2.63	3.09	4.27	6.05	3.65	2.28	1.50	.98
19	1.45	1.52	4.60	3.17	2.75	3.07	4.40	5.95	3.65	2.26	1.52	.90
20	1.48	1.53	4.55	3.14	2.72	3.07	4.52	5.90	3.60	2.40	1.53	1.02
21	1.51	1.55	4.57	3.18	2.68	3.10	4.68	5.75	3.59	2.50	1.60	1.00
22	1.53	1.56	4.50	3.10	2.71	3.15	5.00	5.62	3.57	2.30	1.60	1.10
23	1.80	1.95	4.40	3.05	2.70	3.12	5.10	5.50	3.45	2.25	1.56	1.12
24	1.45	2.40	4.35	3.03	2.71	3.20	5.35	5.46	3.40	2.22	1.50	1.00
25	1.47	2.46	4.32	3.00	2.72	3.15	5.50	5.40	3.45	2.25	1.50	.95
26	1.54	2.55	4.28	2.95	2.73	3.15	5.62	5.17	3.32	2.40	1.48	1.07
27	1.68	2.68	4.20	3.00	2.70	3.15	5.80	4.95	3.20	2.21	1.48	1.10
28	1.49	2.65	4.10	2.90	2.72	3.17	5.90	4.95	3.18	2.20	1.48	1.08
29	1.52	2.90	4.10	2.86	-	3.25	6.05	4.87	3.10	2.15	1.40	1.05
30	1.85	2.90	4.02	2.91	-	3.30	6.40	5.00	3.05	2.15	1.37	.93
31	1.54	-	4.00	2.87	-	3.40	-	4.55	-	2.12	1.40	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1879-80

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.90	0.34	1.72	2.25	2.75	3.60	2.88	4.10	2.85	1.65	1.20	0.60
2	.93	.36	1.45	2.27	2.85	3.78	2.92	3.98	2.83	1.60	1.15	.65
3	.90	.34	1.13	2.55	2.87	3.90	3.02	4.00	2.85	1.78	1.10	.56
4	.80	.36	1.20	2.23	2.95	3.72	3.10	3.87	2.73	1.70	1.05	.52
5	.82	.40	1.60	2.15	2.93	3.80	3.50	3.90	2.80	2.00	1.04	.48
6	.82	.46	1.81	2.26	2.90	3.92	3.92	3.78	2.95	1.75	1.00	.35
7	.86	.48	1.85	2.17	2.88	4.20	4.10	3.85	2.73	1.72	1.00	.33
8	.80	.49	2.05	2.19	2.91	3.97	4.20	3.82	2.65	1.68	1.04	.30
9	.76	.47	2.20	2.25	2.80	4.10	4.15	3.80	2.65	1.66	1.05	.30
10	.65	.32	3.20	2.17	2.84	4.00	4.10	4.00	2.50	1.64	1.03	.31
11	.72	.34	2.30	2.35	2.78	3.90	4.08	3.75	2.35	1.60	1.00	.35
12	.70	.31	2.29	2.15	2.82	3.82	4.30	3.62	2.50	1.70	.95	.38
13	.60	.51	2.50	2.17	2.79	3.80	4.08	3.54	2.55	1.54	.92	.37
14	.62	1.50	2.39	2.40	2.77	3.75	3.95	3.66	2.31	1.50	.90	.26
15	.61	.85	2.43	2.20	2.79	3.70	4.10	3.58	2.25	1.52	.85	.20
16	.60	.98	2.38	2.27	2.78	3.65	3.90	3.62	2.21	1.51	.78	.30
17	.65	.95	2.40	2.25	2.95	3.61	4.10	3.58	2.20	1.48	.80	.25
18	.90	.92	2.50	2.22	3.10	3.60	4.20	3.44	2.17	1.50	.82	.26
19	.40	1.10	2.35	2.35	3.15	3.48	4.20	3.35	2.15	1.48	.95	.27
20	.60	1.00	2.33	2.28	3.30	3.42	4.00	3.35	2.10	1.46	.88	.32
21	.80	1.00	2.34	2.30	3.40	3.35	4.10	3.25	2.08	1.43	.86	.31
22	.85	1.15	2.90	2.50	3.36	3.32	4.08	3.50	1.98	1.50	.88	.20
23	.60	1.25	2.32	2.38	3.33	3.30	4.05	3.25	1.90	1.40	.70	.21
24	.50	1.05	2.82	2.35	3.35	3.28	4.00	3.22	1.97	1.38	.68	.18
25	.48	1.10	2.31	2.37	3.38	3.22	4.05	3.20	1.95	1.41	.65	.24
26	.56	1.00	2.36	2.40	3.40	3.18	3.90	3.15	1.92	1.25	.58	.35
27	.60	1.35	2.35	2.38	3.48	3.15	3.82	2.90	1.90	1.20	.64	.10
28	.45	1.45	2.36	2.35	3.64	3.05	3.95	2.95	2.00	1.22	.50	.15
29	.38	1.05	2.27	2.58	3.58	3.00	5.00	2.92	1.91	1.21	.55	.12
30	.36	1.27	2.25	3.10	-	2.94	3.82	3.20	1.84	1.20	.57	.10
31	.35	-	3.34	2.65	-	2.90	-	2.90	-	1.22	.60	-

1880-81

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.15	1.00	1.75	1.15	0.98	2.12	3.52	4.65	4.32	2.38	1.58	1.10
2	.25	.90	1.73	1.18	.96	2.20	3.45	4.35	4.28	2.35	1.55	1.15
3	.45	1.10	1.70	1.13	.96	2.46	3.45	4.45	4.25	2.33	1.53	1.17
4	.15	1.25	1.74	1.15	.94	2.42	3.41	4.47	4.15	2.30	1.52	1.25
5	.18	1.30	2.00	1.16	.80	2.45	3.37	4.40	4.05	2.33	1.50	1.40
6	.05	1.38	1.65	1.13	.88	2.50	3.35	4.37	4.00	2.31	1.48	1.15
7	.15	1.50	1.60	1.12	.90	2.55	3.30	4.34	4.10	2.30	1.50	1.08
8	-.03	1.40	1.58	1.14	.92	2.65	3.28	4.30	3.95	2.28	1.52	1.05
9	.05	1.50	1.54	1.15	.91	2.70	3.25	4.30	3.75	2.26	1.55	1.08
10	-.05	1.48	1.52	1.10	.95	2.73	3.17	4.33	3.58	2.27	1.50	1.30
11	.10	1.70	1.62	1.11	1.12	2.70	3.17	4.40	3.37	2.25	1.52	1.00
12	-.14	1.80	1.54	1.10	1.33	2.95	3.20	4.50	3.15	2.20	1.55	1.10
13	-.08	1.86	1.50	1.10	1.45	3.08	3.15	4.67	3.18	2.08	1.53	.98
14	-.08	2.00	1.52	1.05	1.53	2.90	3.20	4.69	3.25	2.10	1.50	.95
15	.05	1.93	1.50	1.03	1.60	3.03	3.12	4.73	3.05	2.00	1.48	1.02
16	.10	1.90	1.48	1.00	1.65	3.03	3.20	4.75	3.00	1.95	1.47	1.15
17	.15	2.05	1.46	.98	1.80	3.07	3.25	4.79	3.10	1.90	1.45	1.00
18	.14	2.03	1.46	.98	1.90	3.15	3.23	4.90	2.85	1.80	1.48	.85
19	.17	2.10	1.45	.97	1.83	3.25	3.22	4.93	2.90	1.75	1.45	.80
20	.20	2.00	1.46	.94	1.85	3.35	3.30	4.95	2.85	1.78	1.40	.78
21	.50	1.85	1.38	.95	1.83	3.53	3.35	4.97	2.65	1.75	1.36	.70
22	.08	1.83	1.35	.90	1.85	3.64	3.37	4.96	2.58	1.73	1.25	.65
23	.05	1.85	1.30	.92	1.80	3.66	3.44	4.93	2.55	1.68	1.10	.68
24	.00	2.00	1.28	.94	1.82	3.72	3.55	4.91	2.54	1.70	1.15	.70
25	.00	1.90	1.25	.98	1.83	3.67	3.64	4.89	2.50	1.95	1.10	.65
26	.40	1.85	1.23	1.00	1.87	3.64	3.77	4.90	2.48	1.68	1.15	.58
27	.15	1.87	1.23	.98	1.90	3.56	4.18	4.73	2.68	1.65	1.12	.55
28	.16	1.90	1.20	.97	2.00	3.64	4.22	4.62	2.46	1.70	1.15	.53
29	.23	1.85	1.18	.98	-	3.61	4.25	4.56	2.45	1.65	1.10	.85
30	.34	1.78	1.15	.99	-	3.49	4.50	4.42	2.43	1.63	1.12	1.10
31	.50	-	1.15	.97	-	3.50	-	4.36	-	1.60	1.15	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1881-82

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.83	0.62	1.15	2.59	2.35	2.80	3.75	3.52	3.10	3.60	2.28	1.51
2	1.10	.67	1.18	2.64	2.38	3.25	3.50	3.50	3.15	3.58	2.20	1.49
3	.82	.60	1.15	2.65	2.32	3.85	3.45	3.45	3.20	3.55	2.20	1.49
4	.70	.64	1.17	2.65	2.30	4.00	3.60	3.45	3.30	3.50	2.15	1.48
5	.55	1.00	1.25	2.67	2.31	4.15	3.50	3.40	3.40	3.47	2.10	1.50
6	.68	.72	1.50	2.65	2.30	4.18	3.45	3.42	3.60	3.45	2.12	1.47
7	.75	1.10	1.28	2.68	2.28	4.23	3.48	3.40	3.75	3.48	2.00	1.45
8	.74	1.30	1.25	2.75	2.25	4.21	3.45	3.38	3.86	3.35	2.05	1.40
9	.70	.90	1.30	2.62	2.10	4.15	3.50	3.40	4.05	3.30	2.03	1.38
10	.72	.80	1.28	2.60	2.08	4.20	3.55	3.35	4.10	3.28	2.00	1.37
11	.85	.92	1.35	2.80	2.09	4.15	3.60	3.30	4.15	3.25	2.05	1.36
12	1.10	1.30	1.50	2.60	2.12	4.10	3.65	3.30	4.20	3.20	2.10	1.30
13	.30	1.00	1.30	2.70	2.10	4.10	3.60	3.28	4.18	3.18	1.95	1.25
14	.33	1.08	1.33	2.68	2.10	4.10	3.50	3.30	4.20	3.15	2.10	-
15	1.25	1.10	1.35	2.66	2.20	3.97	3.49	3.28	4.35	3.12	1.95	-
16	.30	1.15	1.40	2.62	2.30	3.91	3.45	3.25	4.25	3.10	1.93	1.00
17	.28	1.40	1.50	2.60	2.40	3.85	3.43	3.23	4.20	3.05	1.80	-
18	.30	1.30	1.40	2.70	2.45	3.80	3.48	3.20	4.17	3.00	1.72	-
19	.50	1.10	1.45	2.50	2.80	3.75	3.49	3.20	4.15	2.93	1.72	1.20
20	.48	1.15	1.50	2.48	2.50	3.69	3.50	3.19	4.10	2.80	1.75	-
21	.35	1.20	1.50	2.44	2.48	3.65	3.50	3.20	4.05	2.75	1.77	-
22	.40	1.12	1.52	2.46	2.48	3.60	3.45	3.17	4.00	2.70	1.72	1.30
23	.36	1.28	1.60	2.40	2.60	3.57	3.43	3.15	3.98	2.67	1.75	-
24	.45	1.10	1.65	2.38	2.58	3.50	3.40	3.14	3.99	2.65	1.55	-
25	.50	1.18	1.68	2.45	2.60	3.47	3.50	3.12	3.97	2.50	1.57	1.40
26	.35	1.25	1.70	2.40	2.62	3.54	3.48	3.14	4.00	2.55	1.53	-
27	.55	1.20	2.00	2.35	2.57	3.70	3.50	3.11	3.90	2.50	1.52	-
28	.55	1.18	2.10	2.38	2.60	3.47	3.48	3.10	3.85	2.46	1.50	1.50
29	1.00	1.22	2.20	2.35	-	3.80	3.47	3.08	3.70	2.40	1.50	-
30	.65	1.20	2.60	2.37	-	3.42	3.50	3.00	3.65	2.38	1.52	-
31	.65	-	2.58	2.35	-	3.48	-	3.00	-	2.29	1.50	-

1882-83

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.50	0.80	0.25	0.15	0.20	1.00	1.00	4.20	4.20	3.25	2.30	1.10
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	1.50	.70	.25	.20	.20	1.00	1.20	4.00	4.55	3.20	2.20	1.00
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	1.40	.70	.25	.15	.30	1.00	1.40	4.00	4.30	3.30	2.10	1.00
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	1.30	.70	.25	.20	.40	1.00	2.50	4.10	4.20	3.20	1.90	1.00
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	1.20	.65	.30	.20	.40	1.10	3.70	4.20	4.20	3.00	1.80	.85
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	1.10	.70	.30	.20	.50	1.10	4.60	4.40	4.20	2.80	1.80	.90
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	1.10	.60	.30	.20	.50	1.10	5.10	4.50	4.20	2.80	1.70	.90
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	1.00	.60	.25	.20	.50	1.10	5.60	4.20	4.10	2.80	1.60	.80
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	.90	.50	.30	.20	.70	1.10	5.50	3.75	3.80	2.70	1.40	.70
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	.90	.40	.30	.15	.80	1.00	5.30	3.40	3.40	2.50	1.20	.60
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	.30	-	-	-	-	-	-	-	-	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1883-84

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.45	0.25	0.40	0.50	0.60	2.90	5.00	6.25	4.50	2.60	1.80	0.90
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	.50	.25	.40	.50	.70	2.90	5.30	6.10	4.40	2.15	1.90	.90
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	.50	.40	.50	.50	.90	2.90	5.35	6.10	4.30	2.20	1.75	.90
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	.50	.40	.50	.60	1.00	2.90	5.20	5.90	4.15	2.30	1.60	.80
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	.50	.35	.50	.60	1.25	2.90	5.30	5.50	3.80	2.30	1.40	.60
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	.40	.35	.45	.60	1.80	2.90	5.60	5.15	3.60	2.15	1.20	.40
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	.40	.40	.50	.60	2.25	2.85	6.00	5.00	3.30	2.00	1.10	.40
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	.40	.40	.50	.60	2.55	2.95	6.30	5.00	3.20	2.00	1.00	.40
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	.40	.35	.45	.60	2.80	3.60	6.40	5.00	3.00	1.90	1.00	.40
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	.35	.35	.50	.60	2.90	4.30	6.25	4.70	2.85	1.80	.85	.40
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	.40	-	-	-	-	-	-	-	-	-

1884-85

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.40	0.50	1.00	1.60	2.50	2.10	1.80	6.50	4.20	2.60	2.15	1.70
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	.30	.60	1.00	1.70	2.40	2.10	2.30	6.50	4.00	2.50	2.05	1.80
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	.40	.55	.95	2.30	2.30	2.00	3.00	6.00	3.80	2.40	2.00	2.00
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	.50	.60	1.20	2.40	2.40	2.00	4.00	6.00	3.70	2.50	1.80	2.00
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	.45	.70	1.60	2.50	2.30	2.00	4.70	6.00	3.60	2.50	1.80	2.00
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	.45	.70	1.60	2.60	2.30	1.90	5.00	5.80	3.40	2.50	1.90	1.80
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	.45	.70	1.60	2.60	2.30	1.90	5.20	5.40	3.10	2.40	1.80	1.75
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	.50	.70	1.60	2.80	2.30	1.80	5.70	5.10	2.90	2.30	1.80	1.80
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	.50	.80	1.60	2.60	2.20	1.80	6.20	4.80	2.70	2.20	1.80	1.80
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	.45	.85	1.60	2.50	2.10	1.80	6.60	4.40	2.80	2.20	1.70	2.00
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	1.60	-	-	-	-	-	-	-	-	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1885-86

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.80	2.70	3.90	3.50	3.40	3.90	3.80	5.40	3.50	2.60	1.70	1.20
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	1.80	3.20	3.80	3.80	3.40	3.90	4.40	5.20	3.30	2.40	1.60	1.00
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	1.80	3.40	3.80	4.00	3.40	3.80	4.75	4.80	3.30	2.20	1.50	.90
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	1.80	3.80	3.80	4.20	3.30	3.70	4.90	4.40	3.20	2.00	1.50	.90
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	1.70	4.00	3.80	4.20	3.20	3.60	5.20	4.30	3.10	2.00	1.30	.80
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	1.70	4.20	3.75	4.20	3.40	3.40	5.40	4.40	3.00	2.00	1.30	.80
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	1.90	4.20	3.70	4.10	3.70	3.20	5.75	4.10	2.80	1.95	1.30	.70
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	2.20	4.30	3.75	3.90	4.00	3.20	5.80	3.80	2.80	1.90	1.35	.70
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	2.40	4.20	3.80	3.70	4.00	3.20	5.90	3.60	2.80	1.80	1.30	.70
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	2.50	4.00	3.70	3.50	4.00	3.20	5.70	3.60	2.70	1.75	1.30	.60
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	3.50	-	-	-	-	-	-	-	-	-

1886-87

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.80	0.60	3.00	2.80	3.00	3.00	2.50	7.60	5.00	3.50	2.40	1.60
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	1.00	.70	2.80	2.20	3.20	2.80	3.00	7.20	5.00	3.50	2.30	1.50
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	1.00	.90	2.80	2.00	3.60	2.90	4.20	7.40	4.80	3.30	2.20	1.40
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	1.00	1.00	2.85	2.00	3.15	2.80	4.40	7.40	4.70	3.10	2.20	1.30
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	1.00	.80	2.85	2.00	3.15	2.80	5.10	7.30	4.60	2.90	2.00	1.20
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	.80	1.20	2.80	2.00	3.20	2.70	5.95	6.30	4.40	2.80	1.90	1.20
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	.80	1.30	2.80	2.00	3.20	2.70	6.40	5.90	4.10	2.90	1.80	1.10
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	.80	2.40	2.80	2.30	3.20	2.90	6.50	5.00	3.80	2.80	1.70	1.00
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	.60	2.40	2.80	2.60	3.20	2.60	6.80	5.00	3.80	2.70	1.50	.80
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	.60	2.80	2.80	2.80	3.20	2.50	7.50	4.80	3.60	2.60	1.60	.70
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	2.80	-	-	-	-	-	-	-	-	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1887-88

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.70	0.40	1.20	2.10	2.20	2.20	4.60	6.00	5.60	3.50	1.90	1.60
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	.50	.30	1.50	2.10	2.20	2.20	5.00	6.40	5.30	3.30	1.70	1.80
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	.60	.20	1.40	2.00	2.20	2.20	5.40	6.50	5.10	3.20	1.60	2.00
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	.60	.20	1.50	2.00	2.20	2.10	5.60	6.80	4.80	3.00	1.60	1.80
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	.60	.40	2.00	2.00	2.20	2.00	5.80	7.10	4.50	2.80	1.70	1.80
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	.50	.20	2.20	2.00	2.20	2.00	5.80	7.20	4.40	2.70	1.70	1.80
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	.40	.30	2.30	1.95	2.20	2.20	5.80	6.80	4.10	2.60	1.70	1.85
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	.40	.40	2.30	2.00	2.20	2.40	5.80	6.60	4.00	2.40	1.60	2.00
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	.40	.50	2.20	2.20	2.25	3.00	5.60	6.30	3.80	2.20	1.70	2.20
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	.40	.70	2.10	2.20	2.20	3.80	5.50	6.00	3.70	2.00	1.70	2.30
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	2.10	-	-	-	-	-	-	-	-	-

1888-89

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.20	2.80	4.00	4.50	4.20	3.00	3.90	5.40	4.00	3.90	3.10	2.10
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	2.20	2.90	3.70	4.40	4.00	2.90	4.00	5.30	4.00	3.70	3.10	2.00
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	2.35	3.00	4.00	4.40	4.00	3.00	4.10	5.00	4.00	3.60	3.20	1.90
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	2.40	3.20	3.80	4.40	3.80	3.00	4.40	4.70	4.00	3.40	3.10	1.80
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	2.50	3.90	3.00	4.60	3.70	3.10	4.60	4.50	4.00	3.40	2.80	1.70
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	2.70	4.20	3.30	4.60	3.60	2.90	4.80	4.30	4.00	3.30	2.80	1.60
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	2.50	4.40	3.35	4.60	3.50	2.90	5.00	4.10	3.90	3.40	2.60	1.80
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	2.55	4.80	3.40	4.50	3.40	3.10	5.00	4.00	4.00	3.30	2.50	1.80
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	2.60	4.50	3.60	4.40	3.20	3.50	5.30	4.00	3.90	3.20	2.40	1.90
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	2.70	4.00	4.00	4.00	3.10	3.80	5.30	4.00	3.90	3.30	2.20	1.90
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	4.30	-	-	-	-	-	-	-	-	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1889-90

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.00	2.20	2.90	3.50	3.20	4.40	3.80	5.00	5.80	4.20	2.20	2.80
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	2.20	2.50	2.80	3.20	3.30	4.60	4.00	5.00	5.60	3.90	2.00	2.40
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	2.40	2.60	2.80	3.00	3.50	4.40	4.40	5.20	5.60	3.60	1.90	2.80
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	2.60	2.50	2.80	2.85	3.60	4.20	5.00	5.40	5.60	3.60	1.80	3.00
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	2.70	2.50	3.20	2.90	3.40	4.20	5.00	5.60	5.55	3.00	1.80	3.20
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	2.50	2.40	3.40	2.90	3.40	4.50	5.20	6.00	5.40	2.80	1.60	3.40
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	2.40	2.40	3.40	3.00	3.40	4.30	5.20	6.00	5.20	2.70	1.50	3.70
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	2.40	2.60	4.00	2.90	3.50	4.20	5.00	6.00	5.00	2.60	1.60	3.60
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	2.30	2.70	3.90	3.00	3.60	4.00	5.10	6.50	4.60	2.40	2.00	3.40
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	2.10	2.70	3.90	3.00	3.90	4.00	4.90	6.10	4.40	2.30	2.40	3.20
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	3.50	-	-	-	-	-	-	-	-	-

1890-91

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.20	3.20	3.40	2.50	2.40	3.10	6.00	6.50	4.05	2.50	1.65	1.35
2	-	-	-	2.50	2.50	3.05	5.95	6.45	4.00	2.45	1.60	1.30
3	-	-	-	2.45	2.55	3.10	5.90	6.40	3.80	2.35	1.60	1.25
4	3.10	3.20	3.30	2.50	2.50	3.15	6.00	6.30	3.70	-	1.50	1.20
5	-	-	-	2.55	2.55	3.25	5.90	6.10	3.65	-	1.50	1.20
6	-	-	-	2.45	2.55	3.35	5.85	5.95	3.60	2.30	1.45	1.25
7	2.80	3.20	3.20	2.45	2.45	3.50	-	5.80	-	2.25	1.40	1.20
8	-	-	-	2.40	-	3.60	5.80	5.60	3.55	2.00	1.35	1.15
9	-	-	-	2.50	2.50	3.80	5.70	5.45	3.50	2.00	1.40	1.15
10	2.80	3.20	3.00	2.55	2.45	4.10	5.65	5.40	3.45	2.00	1.30	1.10
11	-	-	-	2.45	2.50	4.60	5.60	5.35	3.40	2.05	1.50	1.10
12	-	-	-	2.40	2.55	5.20	5.65	5.30	3.30	-	1.40	1.15
13	2.70	3.00	3.10	2.35	2.60	5.30	5.90	5.25	3.25	2.00	-	1.10
14	-	-	-	-	2.65	5.50	5.95	5.20	3.15	2.00	1.35	1.05
15	-	-	-	2.30	2.60	5.45	-	5.10	3.20	1.90	1.35	-
16	2.80	2.80	2.90	2.35	-	5.50	6.40	5.00	3.10	1.85	1.30	1.10
17	-	-	-	2.40	2.60	5.45	6.50	5.00	3.00	2.00	1.30	1.10
18	-	-	-	2.35	2.65	5.40	6.80	4.75	3.05	2.05	1.40	1.40
19	2.90	2.80	2.80	2.30	2.65	5.35	6.85	4.90	2.95	1.90	1.30	1.25
20	-	-	-	2.40	2.70	-	6.90	4.80	2.90	1.80	1.50	1.10
21	-	-	-	-	2.80	5.35	7.00	5.00	-	1.75	1.50	1.10
22	3.30	3.00	2.70	2.35	2.75	-	7.10	4.70	2.80	1.70	1.50	-
23	-	-	-	-	2.80	5.30	7.00	4.65	2.70	1.75	1.45	1.00
24	-	-	-	2.30	2.85	5.60	6.95	4.65	2.65	1.80	1.50	1.00
25	3.40	3.30	2.70	2.35	2.85	5.80	6.85	4.60	2.60	1.75	1.50	1.05
26	-	-	-	2.40	2.90	5.90	-	4.45	2.55	1.70	1.45	1.10
27	-	-	-	2.30	2.95	6.00	6.90	4.40	2.50	1.70	1.50	1.00
28	3.30	3.40	2.60	-	3.00	6.00	6.60	4.30	2.50	-	1.45	.95
29	-	-	-	2.35	-	-	6.70	4.25	2.45	1.65	-	.90
30	-	-	-	-	-	5.90	6.55	4.20	2.40	2.00	1.35	.80
31	-	-	2.50	2.35	-	-	-	-	-	1.70	1.45	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1891-92

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.00	0.30	0.65	2.15	3.05	2.45	2.55	4.70	4.60	5.00	4.30	4.30
2	.90	.30	.80	2.25	3.00	2.45	2.70	4.10	4.60	5.00	4.20	4.30
3	.80	.40	.70	2.40	2.95	2.40	3.25	4.05	4.50	5.20	4.10	4.35
4	.75	.35	.80	2.68	2.95	2.38	3.60	3.90	4.60	5.40	4.00	-
5	.70	.40	.90	2.80	2.90	2.35	4.10	4.00	-	5.90	3.90	4.20
6	.65	.30	.90	2.85	2.90	2.30	4.60	4.00	4.55	5.85	3.85	4.05
7	.70	.40	.95	2.85	-	2.28	5.00	3.90	4.55	5.80	-	3.85
8	.75	.30	1.20	2.90	2.85	2.25	5.30	3.85	4.68	5.90	4.00	3.80
9	.70	.45	1.15	2.85	2.80	2.30	5.30	3.80	4.50	5.95	3.80	3.75
10	.70	.50	1.15	2.85	2.80	2.25	-	3.75	4.30	-	3.70	3.75
11	.65	.45	1.00	2.90	2.25	2.30	5.30	3.75	4.30	6.00	3.70	-
12	.60	.40	1.15	2.85	2.70	2.30	5.30	3.75	-	5.90	3.75	3.60
13	.60	.40	1.00	2.80	-	2.35	5.30	3.65	4.20	5.90	4.40	3.55
14	.60	.45	.90	2.85	2.70	2.35	5.30	3.75	4.10	5.80	4.55	3.60
15	-	.40	1.00	2.95	2.65	2.40	5.10	3.75	4.10	5.70	4.70	3.40
16	.60	.35	1.00	3.15	2.65	2.35	5.15	3.70	4.00	5.80	4.70	3.35
17	.55	.35	1.00	3.20	2.60	2.40	5.08	3.60	3.80	-	4.65	3.30
18	.60	.35	1.10	3.30	2.65	2.35	5.00	3.65	3.90	5.60	4.60	-
19	.50	.40	1.10	3.20	2.60	2.30	4.90	3.70	-	5.65	4.50	3.00
20	.55	.35	1.10	3.00	2.55	2.30	4.85	3.75	4.00	5.60	4.40	3.00
21	.60	.40	1.10	3.20	2.50	2.30	4.75	3.75	4.30	5.35	-	2.95
22	.50	.60	1.35	3.30	2.50	2.35	4.80	3.65	4.55	5.40	4.30	2.85
23	.50	-	1.10	3.20	2.50	2.25	4.65	3.70	4.60	5.00	4.25	2.80
24	.55	.80	1.20	-	2.50	2.20	-	3.80	4.55	4.95	4.20	2.85
25	.50	.70	1.50	3.15	2.50	2.17	4.50	3.95	4.50	4.80	4.30	-
26	.55	.70	1.80	-	2.45	2.18	4.45	3.95	-	4.60	4.40	2.75
27	.40	.74	1.60	3.10	2.45	2.17	4.40	4.10	4.55	4.50	4.30	2.60
28	.35	.60	1.75	3.10	2.50	2.20	4.60	4.30	4.60	4.40	-	2.60
29	.40	-	2.75	3.08	-	2.30	4.30	4.35	4.80	4.40	4.60	2.60
30	.35	.65	1.80	3.05	-	2.35	4.15	4.50	4.90	4.40	4.50	2.58
31	.30	-	2.10	3.05	-	2.45	-	4.60	-	4.35	4.40	-

1892-93

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.50	1.55	2.20	1.90	1.00	1.50	2.70	4.80	4.30	2.50	1.40	2.70
2	-	-	2.45	1.95	1.00	1.45	-	4.20	4.25	2.45	1.35	2.60
3	3.00	1.65	2.50	1.90	.90	1.50	2.80	4.40	4.20	2.40	1.50	-
4	2.40	1.90	2.40	1.80	1.05	-	2.90	4.60	-	2.35	1.50	2.75
5	2.35	1.95	2.30	1.75	-	-	2.85	4.40	4.00	2.45	1.40	3.00
6	2.30	1.90	2.30	1.70	1.00	1.45	3.00	4.95	4.00	2.20	-	2.60
7	2.40	1.95	2.35	1.70	.95	1.40	3.20	5.00	3.90	2.25	1.30	3.40
8	2.30	-	2.50	-	1.00	1.45	3.50	5.20	3.90	2.30	1.25	2.50
9	-	2.00	2.30	1.65	1.10	1.35	3.20	5.40	3.80	2.15	1.35	2.60
10	2.20	2.10	2.40	1.68	1.20	1.30	3.30	5.40	3.70	2.10	1.30	-
11	2.15	2.15	2.40	1.60	1.30	1.40	3.45	5.35	3.65	2.00	1.30	2.50
12	2.10	-	-	1.60	-	1.45	3.50	5.35	3.60	2.00	1.25	2.40
13	2.10	2.30	2.35	1.55	1.35	1.60	3.90	5.25	3.60	1.95	1.20	2.50
14	2.00	4.00	-	1.50	1.45	1.75	3.70	5.28	3.55	1.90	1.15	2.60
15	2.00	2.30	2.40	-	1.50	1.85	3.80	5.35	3.50	2.20	1.15	2.55
16	-	2.35	2.45	1.40	1.50	2.10	-	5.35	3.45	1.70	1.15	2.50
17	1.80	2.40	2.20	1.48	1.55	2.20	4.00	-	3.40	1.90	1.20	-
18	1.90	2.85	2.30	1.40	1.58	2.25	4.00	-	-	1.75	1.20	2.35
19	1.90	2.70	2.35	1.30	-	-	4.05	-	3.30	1.65	1.20	2.30
20	1.85	-	2.15	1.30	1.60	2.25	4.00	5.20	3.20	1.60	1.20	2.15
21	1.80	2.90	2.10	1.28	1.58	3.00	4.10	-	3.10	1.50	1.15	2.30
22	1.75	-	2.05	-	1.50	2.20	4.10	5.05	3.20	1.50	1.20	2.35
23	-	2.70	1.95	1.20	1.55	2.20	4.15	5.20	3.05	-	1.25	2.20
24	1.60	2.75	2.00	1.20	1.60	2.25	4.20	4.90	3.00	1.50	1.00	-
25	1.75	2.65	-	1.25	1.58	2.30	4.25	-	-	1.55	1.50	3.00
26	1.75	2.60	2.00	1.25	-	-	4.25	4.85	2.90	1.50	1.70	2.15
27	1.80	2.65	2.00	1.20	1.50	2.55	5.00	-	2.80	1.45	-	2.05
28	1.85	2.50	1.95	1.25	1.60	2.60	4.20	4.60	2.80	1.50	2.60	2.05
29	2.00	2.40	1.95	-	-	2.70	4.20	4.60	2.70	1.55	2.00	2.00
30	-	2.30	1.98	1.15	-	2.75	4.20	4.50	2.55	1.50	2.30	1.90
31	1.80	-	1.90	1.10	-	2.60	-	4.40	-	1.50	2.60	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1893-94

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	1.40	0.70	1.80	1.70	-	4.30	4.05	3.00	-	1.35	0.75
2	1.95	1.25	.80	1.95	1.75	-	4.25	4.10	3.10	2.40	1.60	-
3	1.80	1.10	.75	1.85	1.80	-	4.20	4.20	3.00	2.30	1.40	.70
4	1.90	1.10	.70	2.00	1.85	-	4.60	-	3.00	2.20	1.30	.75
5	1.85	1.10	.70	2.10	1.95	-	4.20	4.10	3.10	2.35	-	.70
6	1.80	1.00	1.00	2.00	-	-	4.05	-	3.10	2.10	1.25	.60
7	1.90	1.15	.90	2.10	2.00	2.45	4.10	4.00	2.95	2.00	1.30	.55
8	-	1.10	.95	2.15	1.95	2.80	-	3.50	2.90	-	1.25	.80
9	1.80	.80	.98	2.10	2.00	3.60	3.70	3.30	2.85	1.90	1.20	-
10	1.60	1.05	-	2.05	2.15	3.85	4.00	3.25	2.80	2.00	1.15	.75
11	1.55	1.10	.80	2.10	-	4.00	3.90	3.40	2.85	1.90	1.20	.60
12	1.50	-	.75	-	1.95	3.70	3.70	3.40	2.80	2.00	1.20	.55
13	1.60	1.15	.75	2.15	1.90	3.85	3.60	3.25	2.70	1.90	1.25	.50
14	1.60	1.00	.80	2.20	2.00	4.00	3.70	3.10	2.75	1.90	1.20	.70
15	-	.95	.75	2.20	2.05	4.10	-	3.05	2.60	-	1.15	.55
16	1.80	.80	-	1.95	-	4.05	3.70	3.05	2.60	1.90	1.00	-
17	1.40	2.00	.85	1.80	-	4.00	3.65	3.00	-	1.90	1.05	.50
18	1.30	.80	1.10	-	-	-	3.70	3.20	2.55	1.85	1.00	.50
19	1.50	.80	.90	1.90	-	4.00	3.85	2.95	2.50	1.80	-	.45
20	1.50	.80	1.10	1.85	2.10	4.10	3.60	-	2.50	1.80	.95	.60
21	1.30	1.00	1.30	-	-	4.40	3.60	2.95	2.50	1.70	.90	.60
22	-	.80	-	1.85	-	4.30	-	2.80	2.50	-	.80	.80
23	1.30	.90	1.20	1.75	-	4.90	3.80	2.80	2.50	1.60	.90	-
24	1.30	.70	-	1.75	-	4.70	3.90	2.75	-	1.75	.90	.60
25	1.15	.80	1.30	1.85	-	4.70	4.00	2.80	2.60	1.50	.85	.50
26	1.20	.85	-	-	-	4.70	4.05	2.70	2.55	1.50	-	.55
27	2.30	1.20	1.80	1.70	-	4.60	4.00	-	2.60	1.55	.80	.55
28	1.20	.70	-	1.80	-	4.60	3.90	2.90	2.40	1.50	.70	.55
29	1.10	.80	-	1.75	-	4.50	-	2.70	2.50	-	.70	.50
30	1.20	.90	2.00	1.70	-	4.40	4.00	2.80	2.40	1.40	.75	.90
31	1.20	-	-	1.75	-	4.60	-	2.90	-	1.45	.70	-

1894-95

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.25	0.90	1.10	1.30	1.20	1.18	1.50	5.70	3.70	2.35	1.20	1.20
2	.30	.85	-	1.35	1.25	1.18	1.50	5.60	3.75	2.30	1.15	1.20
3	1.00	.90	1.00	1.40	-	1.20	1.55	5.50	3.60	2.20	1.20	1.50
4	.50	-	.95	1.35	1.20	1.15	1.60	-	3.55	2.15	-	1.50
5	.50	.95	1.10	1.30	1.20	1.18	1.60	5.55	3.60	2.20	1.10	1.20
6	.40	1.00	1.00	1.40	1.20	1.15	1.65	5.50	3.55	2.10	1.20	1.10
7	-	1.10	.95	-	1.20	1.20	-	5.30	3.50	-	1.10	1.20
8	1.50	1.15	1.00	1.35	1.20	1.20	1.80	5.10	3.50	2.00	1.00	1.10
9	.50	1.20	.95	1.45	1.20	1.18	2.10	5.05	-	1.90	1.00	1.10
10	.40	1.25	.90	1.40	1.20	-	2.70	5.30	3.40	1.90	.80	1.00
11	.55	-	1.00	1.35	1.20	1.20	3.20	5.00	3.40	1.85	-	1.00
12	.55	1.20	1.10	1.30	1.15	1.20	3.50	-	3.30	1.80	1.30	1.20
13	1.10	1.30	1.05	1.35	1.15	1.20	3.60	4.80	3.20	1.70	1.30	1.20
14	-	1.40	1.20	1.28	1.15	1.20	-	4.74	3.20	-	1.40	1.10
15	.70	1.40	1.30	1.30	-	1.25	4.50	4.60	3.15	1.65	1.50	1.10
16	1.15	1.20	-	-	1.20	1.30	5.30	4.60	-	2.00	1.50	1.30
17	.80	1.20	1.35	1.25	1.20	1.30	5.70	4.55	3.10	1.70	1.80	1.10
18	.70	-	1.25	1.30	1.20	1.25	5.80	4.60	2.90	1.50	1.40	1.00
19	1.00	.95	1.50	1.30	1.18	1.20	5.88	-	2.85	1.50	1.40	1.00
20	.80	1.00	1.40	1.30	1.15	1.15	5.95	4.30	2.80	1.55	1.40	1.10
21	-	1.50	1.50	1.25	1.20	1.15	-	4.40	2.80	-	1.30	1.10
22	.90	1.15	1.10	1.30	1.20	1.10	6.40	4.60	2.75	1.50	1.40	-
23	.90	1.50	1.40	1.30	1.15	1.10	6.30	4.40	2.70	1.40	1.40	1.15
24	1.05	1.10	1.35	1.30	-	-	6.80	4.30	2.70	1.45	1.40	.90
25	.80	1.15	-	1.25	1.20	1.15	6.05	4.25	2.65	1.35	1.40	1.00
26	.80	1.00	1.25	1.30	1.15	1.25	6.00	-	2.70	1.30	1.50	1.05
27	.80	1.10	-	-	1.20	1.30	5.95	4.30	2.60	1.25	1.40	.90
28	-	.90	1.10	1.30	1.20	1.40	-	4.00	2.50	-	1.30	.80
29	.80	.95	-	1.25	-	1.45	5.75	3.90	2.40	1.30	1.30	-
30	.90	1.15	-	1.30	-	1.50	5.70	3.80	2.45	1.25	1.40	.80
31	.80	-	1.25	1.30	-	1.50	-	3.70	-	1.20	1.80	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1895-96

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.90	0.30	-	3.90	2.60	-	4.50	7.25	3.70	2.25	1.60	0.90
2	1.00	.20	2.30	4.00	-	3.30	4.75	7.40	3.60	2.30	-	.80
3	.80	-	2.60	3.80	2.55	3.70	4.90	-	3.50	2.30	1.55	.80
4	.80	.20	2.80	3.80	2.50	3.90	4.90	7.00	3.40	2.30	1.50	.80
5	.80	.30	2.75	-	2.55	4.10	-	6.70	3.35	-	1.50	.90
6	-	.30	2.70	3.75	2.50	4.30	5.00	6.55	3.40	2.20	1.45	-
7	.75	.30	2.70	3.70	2.45	4.35	5.00	6.50	-	2.30	1.50	.80
8	.70	.25	-	3.70	2.50	-	5.00	6.30	3.35	2.30	1.45	.75
9	.75	.30	2.65	3460	-	4.40	5.10	6.15	3.30	2.25	-	.80
10	.60	.60	2.60	3.60	2.50	4.35	5.20	-	3.40	2.20	1.40	.80
11	.50	.85	2.50	3.50	2.50	4.30	5.30	6.00	3.35	2.15	1.45	.80
12	.50	1.00	2.45	-	2.60	4.35	-	5.85	3.40	-	1.40	.70
13	.55	1.00	2.45	3.40	2.65	4.30	5.50	5.70	3.35	2.10	1.35	-
14	.50	1.50	2.40	3.35	2.60	4.30	5.80	5.50	3.30	2.20	1.35	.85
15	.60	1.20	-	3.30	2.55	-	6.40	5.40	3.25	2.50	1.30	.75
16	.60	1.25	2.40	3.35	-	4.35	6.80	5.25	3.20	2.00	-	.70
17	.50	-	2.50	3.25	2.50	4.30	7.40	-	3.20	2.00	1.30	.70
18	.45	1.30	2.55	3.20	2.50	4.30	7.70	5.10	3.00	2.05	1.40	.70
19	.80	1.25	2.60	-	2.45	4.25	8.00	5.00	2.90	-	1.30	.75
20	-	1.20	2.65	3.15	2.40	4.20	8.15	4.85	2.80	2.00	1.30	-
21	.40	1.30	2.30	3.15	2.35	4.10	8.20	4.80	-	1.90	1.40	1.00
22	.40	1.40	-	3.00	2.40	-	8.10	4.70	2.60	1.90	1.45	.75
23	.30	1.30	2.40	2.90	-	4.00	8.15	4.45	2.60	1.85	-	.85
24	.40	-	2.60	2.90	2.40	4.00	8.15	-	2.55	1.80	1.40	.80
25	.20	1.20	2.80	2.85	2.35	4.15	8.60	5.40	2.80	1.80	1.40	1.00
26	.40	2.00	2.90	-	2.35	4.05	7.90	5.20	2.40	-	1.20	.90
27	-	2.00	2.60	2.75	2.30	4.00	7.80	5.00	2.50	1.75	1.10	-
28	.50	2.50	3.10	2.70	2.30	4.10	8.40	4.60	-	1.70	1.05	.85
29	.30	2.60	3.15	2.70	2.25	-	7.50	4.40	2.70	1.70	1.00	.80
30	.30	2.30	3.25	2.65	-	4.15	7.40	4.20	2.40	1.70	-	.70
31	.50	-	3.35	2.65	-	4.25	-	-	-	1.60	.95	-

1896-97

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.70	-	2.10	1.50	1.35	1.25	3.50	6.30	5.20	4.30	-	3.50
2	.65	0.90	2.00	1.60	1.35	1.20	3.50	-	5.10	4.25	4.80	3.30
3	.80	.95	2.10	-	1.30	1.20	3.60	6.25	5.10	4.20	4.80	3.25
4	-	1.50	2.70	1.50	1.35	1.15	-	6.25	5.20	-	4.75	3.30
5	.80	1.20	2.00	1.50	1.30	1.25	3.80	6.20	5.10	4.10	4.70	-
6	.85	1.30	2.00	1.50	1.30	1.25	3.80	6.13	5.00	3.95	4.60	3.10
7	.80	1.40	2.00	1.50	-	-	4.00	6.00	5.10	3.90	4.55	3.00
8	.90	-	2.10	1.50	1.35	1.35	4.20	6.00	5.00	3.85	-	3.05
9	.90	1.60	1.90	1.60	1.40	1.35	4.30	-	4.90	3.80	4.40	3.00
10	.85	1.65	2.00	-	1.40	1.50	4.45	5.75	4.85	3.75	4.35	2.90
11	-	2.20	2.00	1.55	1.40	1.70	-	5.70	5.20	-	4.40	2.65
12	.80	1.70	2.30	1.50	1.35	1.90	4.60	5.70	5.20	3.65	4.35	-
13	.85	1.70	-	1.50	1.40	1.80	5.00	5.60	-	3.55	4.35	2.90
14	.70	1.65	1.90	1.50	-	-	4.60	5.55	5.20	3.85	4.25	2.65
15	.75	-	2.00	1.55	1.40	1.90	4.55	5.55	5.20	4.10	-	2.55
16	.80	1.70	1.70	1.50	1.40	1.95	4.90	-	5.28	4.65	4.30	2.60
17	.90	1.60	1.80	-	1.40	2.00	5.10	5.45	5.25	5.00	4.15	2.40
18	.90	2.10	1.90	1.40	1.35	2.00	-	5.50	5.20	-	4.15	2.45
19	.90	1.50	1.80	1.40	1.35	2.00	-	5.35	5.10	5.00	4.30	-
20	2.00	1.65	-	1.45	1.30	2.15	5.60	5.35	5.00	4.95	4.00	2.20
21	.90	2.00	1.60	1.50	-	-	5.80	5.25	5.10	4.95	4.00	2.10
22	.95	-	1.65	1.45	1.35	2.60	6.00	5.20	4.95	4.95	-	2.25
23	1.05	2.20	1.50	1.40	1.30	2.80	5.95	-	5.00	4.85	3.95	2.20
24	1.00	1.80	1.45	-	1.30	2.95	5.70	5.10	4.95	4.70	3.90	2.25
25	-	1.85	1.50	1.40	1.30	3.20	-	5.00	4.80	-	3.85	2.25
26	1.20	1.90	1.60	1.40	1.25	3.30	5.95	5.10	4.65	4.80	3.80	-
27	.90	2.10	1.70	1.45	1.20	3.35	5.90	5.10	-	4.95	3.90	2.00
28	.90	2.00	1.80	1.40	-	-	6.10	5.15	4.50	4.90	3.70	1.95
29	1.10	-	1.75	1.35	-	3.40	6.20	5.35	4.40	4.85	-	2.00
30	.90	2.20	1.60	1.40	-	3.40	6.20	-	4.28	4.80	3.40	2.00
31	1.00	-	1.40	-	-	3.40	-	5.30	-	4.80	3.50	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1897-98

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.95	1.25	2.60	3.35	3.10	3.50	6.65	-	3.50	2.30	1.40	0.90
2	1.90	1.10	2.40	3.40	3.10	3.45	6.70	4.90	3.45	2.80	1.50	.85
3	-	1.15	2.45	3.30	3.10	3.40	-	4.95	3.40	-	1.55	.90
4	1.95	1.25	2.55	3.30	3.10	3.38	6.45	4.85	3.35	2.30	1.60	-
5	1.95	1.35	-	3.28	3.12	3.35	6.25	4.80	-	2.28	1.55	1.00
6	1.83	1.35	2.60	3.30	-	-	6.15	4.70	3.20	2.30	1.50	1.10
7	1.70	-	2.75	3.20	3.10	3.28	6.00	4.70	3.30	2.25	-	1.10
8	1.65	1.35	2.90	3.30	3.10	3.20	5.95	-	3.25	2.25	1.40	1.15
9	1.60	1.40	2.95	-	3.00	3.25	5.90	4.55	3.10	2.05	1.30	1.10
10	-	1.50	3.05	3.10	3.00	3.20	-	4.60	3.05	-	1.30	1.05
11	1.85	1.60	3.10	3.05	3.00	3.23	5.65	4.65	3.00	1.90	1.25	-
12	1.75	1.75	-	3.15	3.10	3.60	5.50	4.55	-	1.95	1.40	1.00
13	1.65	1.80	3.05	3.05	-	-	5.65	4.35	3.00	1.90	1.20	.95
14	1.60	-	3.10	3.08	3.30	5.00	5.65	4.35	2.95	1.85	-	.90
15	1.55	1.85	3.20	3.17	3.40	5.65	5.40	-	2.90	1.80	1.30	.95
16	1.50	2.25	3.55	-	3.50	6.00	5.35	4.25	2.95	1.75	1.25	.90
17	-	2.15	3.80	3.15	3.55	6.05	-	4.15	2.90	-	1.10	.80
18	1.45	2.15	4.00	3.20	3.55	6.30	5.10	4.25	3.10	1.80	1.00	-
19	1.40	2.25	4.00	3.15	3.55	5.50	5.25	4.15	-	1.70	.95	.75
20	1.35	2.30	4.05	3.05	-	-	5.15	4.05	2.90	1.75	1.00	.75
21	1.30	-	3.95	3.10	3.60	6.65	5.00	3.95	2.80	1.60	-	.70
22	1.35	2.25	3.90	3.10	3.65	7.00	4.95	-	2.75	1.65	.90	.90
23	1.30	2.20	3.80	3.15	3.60	6.80	4.95	4.10	2.70	1.80	.85	.80
24	-	2.45	3.70	3.15	3.65	6.83	-	3.85	2.70	-	.75	.65
25	1.25	2.65	3.85	3.12	3.60	6.70	4.98	3.80	2.65	1.85	.75	-
26	1.25	2.60	-	3.10	3.55	6.80	5.00	3.85	-	1.60	.90	.95
27	1.25	2.25	3.65	3.13	-	-	5.15	3.70	2.68	1.65	.95	.90
28	1.35	-	3.60	3.15	3.35	7.20	5.10	3.80	3.20	1.65	-	1.00
29	1.10	2.90	3.65	3.13	-	6.70	5.10	3.90	2.50	1.60	1.40	1.20
30	1.15	2.50	3.55	3.12	-	6.80	4.95	3.60	2.55	1.50	.90	1.30
31	-	-	3.40	3.12	-	6.70	-	3.55	-	-	-	-

1898-99

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.20	2.05	2.08	-	2.00	1.90	3.10	6.65	4.05	2.10	1.50	0.70
2	-	2.60	2.00	-	2.00	2.00	3.10	6.75	3.90	2.05	1.60	.75
3	1.30	2.00	2.10	-	2.00	2.05	3.00	6.70	3.85	2.00	1.45	-
4	1.30	1.95	-	-	2.00	2.25	3.00	6.70	3.80	-	1.40	.70
5	1.40	2.20	2.00	-	-	-	3.00	6.70	3.75	2.00	1.35	1.05
6	1.30	-	1.75	-	1.95	2.30	3.05	6.65	3.70	1.90	-	.35
7	1.40	1.85	2.08	-	1.90	2.40	3.10	6.50	3.60	1.90	1.20	.55
8	1.35	2.00	2.05	-	1.80	2.65	3.30	6.35	3.50	1.90	1.10	.45
9	-	1.80	2.00	-	1.80	2.70	-	6.20	3.40	-	1.15	.40
10	1.30	1.85	1.95	-	1.75	2.80	3.85	6.15	3.30	2.05	1.15	-
11	2.00	1.80	-	-	1.70	2.90	4.05	6.30	-	2.05	1.25	.85
12	1.30	1.90	1.80	-	-	-	4.00	5.98	3.40	2.10	1.30	.80
13	1.25	-	1.80	-	1.75	3.00	4.25	5.95	3.30	2.05	-	.30
14	1.20	2.00	1.85	-	1.70	3.00	4.40	5.60	3.05	1.93	1.00	.25
15	1.20	2.00	1.60	-	1.80	3.20	4.70	5.50	3.10	1.95	1.00	.20
16	-	2.05	1.70	2.10	1.80	3.10	4.95	5.45	2.85	-	1.05	.40
17	1.50	2.10	1.80	2.20	1.80	3.20	5.20	5.35	2.85	1.88	1.00	-
18	1.60	2.10	-	2.15	1.75	3.30	5.35	5.45	-	1.80	1.00	.30
19	1.65	2.05	1.70	2.20	-	-	5.45	5.15	2.80	1.75	.95	.05
20	1.65	-	1.80	2.20	1.75	3.30	5.70	5.00	2.85	1.80	-	.10
21	1.70	2.15	1.65	2.15	1.75	3.40	5.80	4.80	2.50	1.95	.90	.20
22	1.70	2.20	1.75	-	2.00	3.30	6.00	4.83	2.50	1.75	1.00	.40
23	-	2.10	1.80	2.15	1.80	3.30	6.10	4.75	2.80	-	.95	.15
24	1.75	2.08	1.85	2.35	1.85	3.30	6.25	4.65	2.60	1.80	1.00	1.00
25	1.80	2.20	-	2.10	1.90	3.30	6.35	4.60	-	1.85	.95	.70
26	1.95	2.10	1.80	2.30	-	-	6.45	4.55	2.45	1.75	.95	.45
27	2.00	-	1.90	2.05	2.00	3.25	6.52	4.00	2.40	1.60	-	.55
28	2.10	2.00	1.80	2.15	2.05	3.20	6.65	4.30	2.20	1.65	.80	.70
29	2.10	2.08	1.93	2.10	-	3.15	6.65	4.50	2.15	1.85	.80	.60
30	-	2.05	1.80	2.10	-	3.20	6.65	4.00	2.10	-	.80	.55
31	2.00	-	1.70	2.05	-	3.15	-	4.10	-	1.50	.85	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1899-1900

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.35	0.60	1.70	2.50	2.30	4.00	3.55	7.25	4.95	3.00	1.95	1.40
2	.41	.80	1.60	2.50	2.30	3.95	3.60	7.45	5.15	2.95	1.95	1.60
3	.45	1.30	-	2.45	2.40	3.90	3.70	7.15	-	3.15	1.80	1.70
4	.60	1.65	1.70	2.50	2.30	-	3.90	7.00	5.15	2.90	1.75	1.45
5	.35	-	1.75	2.45	2.25	3.90	4.20	6.85	5.20	2.80	-	1.45
6	.50	1.65	1.73	2.25	2.30	3.95	4.20	-	5.20	2.85	1.70	1.30
7	.40	1.75	1.80	-	2.40	3.90	4.40	5.60	5.15	2.80	1.80	1.20
8	-	1.80	1.55	2.10	2.40	3.90	-	6.55	5.05	-	1.90	1.30
9	.50	1.85	1.60	2.20	2.40	3.85	4.80	6.50	4.80	2.70	1.75	-
10	.45	1.80	-	2.25	2.50	3.70	4.90	6.45	4.70	2.70	1.90	1.10
11	.55	1.75	1.70	2.05	2.55	3.70	4.95	6.35	-	2.75	1.75	1.25
12	.40	-	2.00	2.10	2.60	3.65	5.00	6.35	4.55	2.65	1.70	1.35
13	.35	1.80	2.05	2.05	2.70	3.70	5.00	-	4.65	2.60	1.80	1.05
14	.63	1.78	2.20	-	3.40	3.60	5.15	6.20	4.75	2.50	1.85	1.00
15	-	2.05	2.45	2.00	3.70	3.60	-	6.00	4.30	-	1.95	1.00
16	.35	1.65	2.50	1.95	3.95	3.58	5.25	6.00	4.25	2.55	1.95	-
17	.70	1.75	-	1.90	4.05	3.60	5.35	6.00	-	2.35	1.75	1.00
18	.20	2.15	2.60	2.10	-	3.68	5.65	5.90	4.10	2.40	1.90	.75
19	.30	-	2.50	1.95	4.15	3.55	5.95	5.85	4.00	2.30	-	.90
20	.20	1.70	2.63	2.05	4.10	3.50	6.50	-	3.90	2.40	1.80	1.20
21	.15	1.70	2.90	2.00	4.08	3.48	6.85	5.95	3.90	2.65	1.75	1.10
22	.30	1.80	2.80	2.30	4.00	3.55	7.10	5.90	3.85	-	1.80	1.00
23	.35	1.70	3.05	2.33	4.03	3.45	7.30	5.85	3.75	2.28	1.75	-
24	.30	1.70	-	2.15	4.05	3.60	7.45	5.75	-	2.20	1.85	.90
25	.30	1.70	2.95	2.50	4.00	3.55	7.55	5.70	3.60	2.15	1.70	.95
26	.25	-	2.80	2.30	4.00	3.50	7.60	5.65	3.65	2.10	1.65	1.00
27	.15	1.72	2.80	2.35	3.95	3.50	7.60	-	3.45	2.15	1.60	.90
28	.30	1.75	2.75	-	3.90	3.50	7.55	5.40	3.25	2.10	1.55	.85
29	-	1.55	2.65	2.40	-	3.50	-	5.30	3.25	-	1.60	1.10
30	.35	1.70	2.60	2.45	-	3.45	7.45	5.25	3.25	2.05	1.50	1.00
31	.50	-	-	2.40	-	3.45	-	5.15	-	2.30	1.45	-

1900-1901

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.90	1.15	2.90	2.75	2.20	1.70	4.20	7.40	5.40	3.85	2.20	1.55
2	.95	.95	2.90	2.85	2.20	1.65	4.30	7.65	5.35	3.90	2.20	1.53
3	1.05	.85	2.95	2.75	2.15	-	4.35	7.05	5.35	5.60	2.25	1.60
4	1.00	1.00	2.90	2.80	2.10	1.70	4.45	7.15	5.30	3.55	2.10	1.60
5	1.00	.85	3.00	2.75	2.10	1.60	4.70	7.00	5.30	3.25	2.00	1.65
6	.90	.80	3.15	2.75	2.05	1.55	5.00	7.00	5.25	3.50	2.00	1.60
7	1.50	1.05	3.35	2.75	2.10	1.60	5.40	6.95	5.15	3.40	2.10	1.50
8	.95	.80	3.20	2.65	2.05	1.55	5.90	6.80	5.20	3.20	2.25	1.40
9	.90	.70	3.10	2.60	2.00	1.53	6.50	6.65	5.05	3.25	2.00	1.35
10	.90	.85	3.20	2.55	2.00	1.50	6.80	6.55	5.05	3.20	2.40	1.40
11	.85	.95	3.20	2.50	2.00	1.55	6.85	6.45	5.10	3.05	2.10	1.30
12	.95	1.10	3.15	2.60	1.97	1.60	7.00	6.32	5.00	3.00	2.05	1.30
13	.95	1.00	3.40	2.55	1.95	1.55	7.00	6.35	4.90	2.95	2.05	1.30
14	.95	1.10	3.05	2.55	1.95	1.60	7.05	6.30	4.90	3.00	2.20	1.30
15	.95	1.15	3.05	2.50	1.90	1.60	7.10	6.20	4.80	2.90	2.25	1.50
16	1.15	1.05	3.00	2.65	1.95	1.55	7.20	6.00	4.70	3.00	2.00	1.40
17	.95	1.25	3.00	2.45	1.90	1.60	7.20	5.90	4.55	2.90	2.00	1.25
18	.95	1.35	2.98	2.40	1.88	1.65	7.45	5.85	4.50	2.80	1.95	1.20
19	.85	1.10	2.90	2.40	1.85	1.60	7.28	5.80	4.45	2.65	1.95	1.20
20	.95	1.25	2.90	2.50	1.80	1.60	7.20	5.90	4.40	2.60	1.90	1.20
21	1.00	1.75	2.90	2.45	1.80	1.70	7.40	5.90	4.45	2.70	1.85	1.15
22	.95	1.80	2.85	2.40	1.80	1.90	7.40	5.90	4.40	2.50	2.00	1.40
23	.90	2.05	3.00	2.40	1.80	2.05	7.50	5.90	4.30	2.45	2.10	1.20
24	.95	2.20	2.75	2.40	1.88	2.30	7.60	5.75	4.27	2.40	1.85	.85
25	.90	2.35	2.95	2.35	1.85	2.35	7.60	5.75	4.25	2.35	1.70	.80
26	1.10	2.40	2.95	2.30	1.83	2.65	7.65	5.70	4.25	2.30	1.70	.90
27	.95	2.55	2.90	2.30	1.75	3.05	7.65	5.63	4.20	2.20	1.70	.90
28	1.00	2.70	3.00	2.33	1.70	3.60	7.60	5.60	4.15	2.30	1.65	1.00
29	.95	2.90	2.90	2.35	-	3.75	7.50	5.50	4.05	2.20	1.70	.85
30	.75	2.80	2.95	2.30	-	3.90	7.45	5.45	4.00	2.20	1.80	.80
31	1.05	-	2.90	2.25	-	4.00	-	5.30	-	2.30	1.60	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1901-2

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.00	0.85	0.90	2.90	2.40	2.15	7.70	5.95	5.10	4.30	3.30	2.45
2	1.30	.70	.95	3.10	2.38	2.60	7.60	5.92	5.00	4.25	3.40	2.35
3	.90	.80	.80	2.90	2.40	3.60	7.55	5.95	4.85	4.30	3.35	2.35
4	.80	1.00	.80	2.90	2.40	4.50	7.50	5.90	4.80	4.20	3.20	2.10
5	.80	.70	.80	3.00	2.43	4.90	7.40	5.85	4.90	4.13	3.15	2.05
6	.55	.66	.86	2.90	2.40	5.10	7.35	5.70	4.85	4.05	3.25	2.15
7	.80	.70	.90	2.90	2.38	5.20	7.25	6.00	4.95	4.25	3.20	2.35
8	.90	.70	.90	2.80	2.35	5.22	7.10	5.70	4.65	4.10	3.10	2.10
9	.85	.75	.95	2.80	2.35	5.30	6.80	5.50	4.70	4.00	3.10	2.25
10	.80	.45	.95	2.75	2.35	5.35	6.95	5.35	4.70	3.80	3.15	2.00
11	.70	.70	1.00	2.70	2.30	5.40	6.95	5.40	4.75	3.70	3.20	2.20
12	.90	.80	1.15	2.70	2.28	5.40	6.90	5.30	4.65	3.80	3.05	2.05
13	1.00	.40	1.40	2.75	2.25	5.70	6.95	5.20	4.70	3.75	3.00	2.05
14	.75	.70	1.50	2.65	2.25	6.20	6.90	5.00	4.60	3.65	3.05	1.95
15	.90	.75	1.85	2.70	2.25	6.50	6.85	5.00	4.80	3.60	2.95	2.05
16	1.00	.80	2.50	2.65	2.20	-	6.75	4.95	4.70	3.45	2.95	2.00
17	.90	.80	2.95	2.55	2.20	6.80	6.60	4.85	4.85	3.65	2.85	2.00
18	.85	.75	3.10	2.60	2.18	7.20	6.55	4.75	4.90	3.40	2.80	2.00
19	1.40	.70	3.15	2.45	2.15	7.35	6.55	4.70	5.00	3.45	2.80	1.95
20	.86	.75	3.20	2.45	2.15	7.40	6.45	4.60	4.83	3.40	2.75	1.85
21	.85	.80	3.10	2.40	2.10	7.40	6.30	4.55	4.85	3.50	3.00	1.95
22	.85	.90	3.30	2.35	2.05	7.50	6.40	4.45	4.85	3.40	2.80	2.00
23	.90	.70	3.20	2.45	2.05	7.60	6.30	4.35	4.70	3.45	2.85	1.95
24	1.00	.80	3.20	2.40	2.05	7.65	6.20	4.20	4.70	3.45	2.60	1.70
25	.75	.65	3.10	2.40	2.00	7.63	6.15	4.30	4.60	3.50	2.55	1.75
26	1.30	.55	3.10	2.45	2.00	7.60	6.40	4.35	4.65	3.55	2.65	1.95
27	.75	.60	3.05	2.45	2.00	7.70	6.10	4.33	4.50	3.55	2.55	1.80
28	.80	.65	3.05	2.40	1.98	7.60	6.00	4.60	4.40	3.40	2.50	1.75
29	.90	.80	3.10	2.45	-	7.55	6.00	5.05	4.35	3.35	2.55	1.60
30	1.00	.70	3.10	2.40	-	7.50	6.15	4.85	4.40	3.30	2.50	1.65
31	1.00	-	3.05	2.40	-	7.65	-	5.00	-	3.30	2.40	-

1902-3

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.70	2.05	2.10	2.35	2.65	3.45	8.10	5.25	2.70	2.50	2.20	1.75
2	1.65	2.25	2.00	2.30	2.70	3.90	8.60	5.35	2.55	2.55	2.10	1.80
3	1.60	2.35	2.15	2.33	2.75	4.05	8.30	6.00	2.40	2.50	2.10	1.80
4	1.50	2.25	1.90	2.30	2.80	4.18	8.15	5.05	2.40	2.45	2.20	1.70
5	1.65	2.25	1.80	2.30	2.80	4.20	8.10	4.95	2.35	2.45	2.20	1.65
6	1.55	2.55	1.95	2.35	2.95	4.25	8.15	4.80	2.35	2.38	2.45	1.62
7	1.80	2.25	2.10	2.35	2.95	4.50	8.25	4.70	2.38	2.40	1.95	1.55
8	1.55	2.10	2.00	2.40	3.00	4.30	8.00	4.65	2.40	2.35	2.05	1.53
9	1.80	2.15	1.90	2.35	3.00	4.60	8.00	4.50	2.20	2.30	2.15	1.70
10	1.50	2.00	2.25	2.35	3.05	4.80	7.90	4.40	2.20	2.30	1.90	1.95
11	1.80	2.05	1.80	2.35	3.05	5.30	7.85	4.40	2.10	2.30	2.05	1.40
12	1.40	2.60	1.80	2.30	3.05	5.70	7.70	4.35	2.20	2.28	1.95	1.50
13	1.70	2.10	1.80	2.30	3.10	6.00	7.60	4.30	2.30	2.25	1.90	1.65
14	1.45	2.00	1.85	2.30	3.25	6.30	7.50	4.15	2.45	2.15	2.00	1.45
15	1.65	2.25	1.80	2.35	3.28	6.40	7.30	4.00	2.45	2.10	1.90	1.35
16	1.40	2.10	2.05	2.30	3.30	6.55	7.15	3.90	2.40	2.05	1.90	1.50
17	1.45	2.10	2.15	2.30	3.35	6.60	7.00	3.85	2.50	2.10	1.90	1.50
18	1.55	2.35	1.85	2.30	3.37	6.70	6.85	3.80	2.45	2.15	1.95	1.25
19	1.55	2.30	1.95	2.30	3.35	6.90	6.80	3.70	2.40	1.95	2.00	1.20
20	1.50	2.20	1.85	2.35	3.38	6.90	6.75	3.65	2.50	2.00	1.93	1.20
21	1.35	2.30	2.10	2.30	3.38	7.00	6.65	3.55	2.55	1.95	1.95	1.20
22	1.55	2.30	1.95	2.32	3.35	7.30	6.55	3.55	2.65	2.00	2.05	1.10
23	1.25	2.05	2.05	2.35	3.30	7.60	6.40	3.25	2.75	2.00	1.95	1.40
24	2.00	2.35	2.15	2.33	3.30	8.00	6.30	3.20	2.65	2.05	1.85	.90
25	1.30	2.00	2.20	2.30	3.25	8.35	6.15	3.15	2.75	2.10	1.90	1.00
26	1.55	2.00	2.30	2.30	3.15	8.50	6.00	3.25	2.75	2.15	1.85	1.30
27	1.75	2.25	2.35	2.40	3.10	8.45	5.90	2.25	2.60	2.05	1.91	1.55
28	1.40	2.10	2.35	2.35	3.15	8.50	5.85	3.05	2.55	2.10	1.80	1.00
29	1.55	2.20	2.40	2.40	-	8.40	5.65	2.75	2.58	2.45	1.90	.95
30	1.95	2.20	2.35	2.40	-	8.80	5.60	2.20	2.60	2.15	1.95	1.00
31	1.90	-	2.35	2.63	-	8.30	-	2.73	-	2.25	1.85	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1903-4

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.00	1.00	0.95	1.05	1.15	-	5.10	5.50	4.35	2.75	1.75	1.40
2	.80	1.05	.80	1.05	1.10	1.40	5.00	5.60	4.35	2.70	1.60	1.15
3	.85	1.00	.80	1.00	1.00	1.70	5.10	5.65	4.25	2.55	1.55	1.25
4	1.35	1.00	.80	.98	1.05	1.55	5.20	5.60	4.20	2.85	1.50	1.25
5	1.05	.80	.85	1.05	1.10	1.45	5.25	5.60	4.10	2.60	1.80	1.30
6	.80	.90	.80	1.05	1.10	1.50	5.20	5.68	4.05	2.55	1.60	1.25
7	1.05	1.00	.80	1.05	1.12	1.50	5.10	5.65	4.00	2.47	1.45	1.30
8	1.20	.98	.75	1.10	1.05	1.65	5.15	5.55	4.00	2.50	1.40	1.20
9	.95	1.15	.75	1.00	1.10	1.70	5.25	5.50	3.95	2.58	1.45	1.40
10	1.00	1.25	.75	1.05	1.10	1.75	5.30	5.35	3.90	2.58	1.70	1.55
11	.95	1.05	.80	1.02	1.12	1.80	5.45	5.20	3.85	2.45	1.35	1.50
12	.90	1.00	.85	1.00	1.10	1.85	5.60	5.15	3.80	2.40	1.30	1.25
13	.90	1.20	.80	1.05	1.12	1.93	5.60	5.05	3.75	2.35	1.40	1.15
14	.85	1.05	.85	1.07	1.15	2.05	5.55	5.15	3.80	2.40	1.33	1.50
15	.95	.95	.85	1.00	1.15	2.15	5.60	5.00	3.75	2.35	1.25	1.10
16	1.15	.90	.85	1.05	1.10	2.15	5.50	4.90	3.40	2.40	1.30	1.25
17	1.00	1.15	.80	.98	1.12	2.10	5.45	4.90	3.40	2.10	1.20	1.15
18	1.00	1.00	.75	1.00	1.15	2.15	5.40	4.80	3.20	2.20	1.15	1.30
19	1.15	.95	.80	.98	1.18	2.25	5.40	4.85	3.20	2.15	1.15	1.10
20	1.25	1.00	.83	1.05	1.20	2.20	5.35	4.83	3.15	2.00	1.50	1.45
21	1.05	1.05	.85	.95	1.23	2.20	5.30	5.05	3.05	1.90	1.20	1.05
22	1.30	1.00	.85	1.08	1.35	2.35	5.15	5.10	3.00	1.88	1.55	1.10
23	1.10	1.10	1.00	1.05	1.40	2.30	5.15	5.15	3.10	1.90	1.20	1.30
24	1.10	.95	.95	1.05	1.30	2.53	5.30	4.90	3.15	1.85	1.25	1.50
25	1.25	.90	.95	1.00	1.35	2.83	5.10	4.85	3.00	1.80	1.55	1.15
26	1.05	.90	.95	1.03	1.30	3.25	5.05	4.85	2.85	1.80	1.25	1.40
27	1.00	.90	1.00	1.07	1.30	3.90	5.10	4.75	2.65	1.85	1.35	1.30
28	1.05	.87	.95	1.05	-	4.50	5.15	4.70	2.80	1.85	1.40	1.40
29	1.20	.86	1.05	1.10	1.33	4.70	5.20	4.65	2.85	1.83	1.20	1.70
30	1.05	.85	1.00	1.10	-	4.80	5.40	4.60	2.75	1.80	1.25	1.60
31	1.10	-	1.05	1.12	-	4.80	-	4.45	-	1.90	1.15	-

1904-5

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.50	2.50	1.70	1.30	1.33	1.15	4.90	4.50	3.35	3.30	3.50	2.80
2	1.60	2.60	1.50	1.28	1.30	1.15	5.00	4.60	3.35	3.40	3.65	2.75
3	1.65	2.70	1.60	1.25	1.25	1.20	5.03	4.50	3.20	3.60	3.80	3.00
4	1.80	2.60	1.55	1.20	1.25	1.15	5.10	4.50	3.20	3.85	3.75	2.90
5	1.95	2.40	1.70	1.25	1.25	1.15	5.05	4.70	3.15	4.10	3.80	3.05
6	1.65	2.40	1.50	1.28	1.25	1.15	5.15	4.35	3.05	4.00	3.75	3.15
7	1.85	2.35	1.55	1.35	1.28	1.20	5.25	4.30	3.15	3.95	3.70	3.20
8	2.15	2.27	1.45	1.35	1.30	1.15	5.30	4.35	3.00	3.90	3.55	3.30
9	1.80	2.25	1.42	1.40	1.33	1.20	5.35	4.30	3.05	3.80	3.55	3.35
10	2.30	2.20	1.40	1.30	1.33	1.20	5.50	4.20	3.10	3.75	3.50	3.30
11	1.70	2.20	1.38	1.35	1.28	1.15	5.50	4.25	3.05	3.70	3.55	3.35
12	1.80	2.45	1.35	1.45	1.30	1.15	5.30	4.15	3.00	3.70	3.45	3.25
13	1.75	2.05	1.33	1.40	1.25	1.15	5.55	4.00	3.00	3.60	3.30	3.10
14	1.70	1.90	1.30	1.43	1.25	1.15	5.30	4.00	3.00	3.70	3.25	3.00
15	1.70	2.15	1.30	1.48	1.28	1.10	5.30	4.05	3.00	3.45	3.20	3.25
16	1.80	2.00	1.28	1.40	1.28	1.15	5.28	4.00	2.95	3.48	3.30	3.15
17	1.85	2.03	1.30	1.40	1.30	1.20	5.25	4.10	3.10	3.40	3.35	3.25
18	1.75	2.10	1.28	1.35	1.25	1.25	5.20	4.05	3.05	3.40	3.40	3.30
19	1.78	1.95	1.28	1.40	1.30	1.30	5.30	3.90	3.10	3.45	3.40	3.15
20	2.00	2.00	1.20	1.45	1.30	1.35	5.15	3.85	3.25	3.40	3.35	3.40
21	2.10	1.90	1.15	1.40	1.28	1.50	5.00	3.80	3.30	3.38	3.30	3.50
22	2.25	2.06	1.05	1.40	1.25	1.70	5.05	3.70	3.15	3.45	3.20	3.65
23	2.50	1.85	1.08	1.38	1.20	1.85	5.00	3.65	3.15	3.48	3.10	3.50
24	2.47	1.85	1.10	1.35	1.20	2.05	5.15	3.65	3.25	3.40	3.10	3.55
25	2.65	1.83	1.08	1.30	1.25	2.20	4.90	3.75	3.30	3.25	3.05	3.30
26	2.55	1.80	1.10	1.30	1.20	2.55	4.95	3.70	3.20	3.05	2.95	3.35
27	2.50	1.78	1.10	1.40	1.23	2.85	4.80	3.50	3.10	3.05	2.90	3.50
28	2.85	1.75	1.12	1.35	1.28	3.20	4.85	3.45	3.20	3.10	2.85	3.35
29	2.90	2.10	1.15	1.30	-	3.55	5.20	3.50	3.25	2.95	2.80	3.30
30	2.50	1.75	1.20	1.33	-	3.95	4.70	3.45	3.30	3.15	2.80	3.20
31	2.55	-	1.25	1.30	-	4.45	-	3.38	-	3.27	2.75	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1905-6

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.25	2.10	1.85	2.05	3.55	3.00	3.10	4.70	4.30	3.58	2.50	1.50
2	3.30	2.05	2.10	2.20	3.40	3.05	3.15	4.75	4.25	3.65	2.50	1.60
3	3.20	2.35	1.95	2.15	3.50	3.00	3.20	4.70	4.20	3.48	2.50	1.50
4	3.35	2.10	1.90	2.30	3.70	3.00	3.20	4.75	4.10	3.45	2.55	1.45
5	3.05	2.05	2.05	2.25	3.35	3.05	3.15	4.65	4.05	3.40	2.50	1.60
6	2.90	2.10	2.20	2.30	3.30	3.15	3.20	4.60	4.10	3.40	2.45	1.75
7	3.05	2.20	2.10	2.25	3.25	3.20	3.25	4.50	4.00	3.35	2.30	1.60
8	2.90	2.30	2.05	2.20	3.30	3.10	3.30	4.50	4.15	3.38	2.25	1.50
9	2.80	2.25	2.10	2.23	3.15	3.05	3.40	4.65	4.10	3.25	2.25	1.55
10	2.85	2.10	2.00	2.30	3.20	3.05	3.40	4.50	4.15	3.25	2.40	1.50
11	3.10	2.40	2.05	2.25	3.20	3.03	3.45	4.40	4.05	3.20	2.60	1.55
12	2.80	2.20	2.15	2.20	3.15	3.00	3.50	4.70	4.10	3.00	2.20	1.60
13	3.00	2.10	2.10	2.10	3.05	3.05	3.55	4.60	4.05	3.30	2.30	1.80
14	2.70	2.00	2.10	2.15	3.00	2.95	4.10	4.55	4.10	3.15	2.05	1.45
15	2.80	2.75	2.05	2.20	3.00	2.90	3.90	4.65	4.00	3.25	1.95	1.30
16	2.85	2.25	2.05	2.40	3.10	2.85	3.80	4.70	4.10	3.20	2.00	1.45
17	2.60	2.00	2.10	2.10	3.05	2.83	4.00	4.65	4.10	3.00	2.15	1.50
18	3.05	1.95	2.05	2.20	3.10	2.75	4.25	4.70	3.95	3.00	2.00	1.40
19	2.50	1.95	2.00	2.10	3.00	2.80	4.30	4.55	3.85	3.05	2.00	1.30
20	2.50	1.90	1.95	2.40	3.10	2.70	4.45	4.50	3.75	3.15	1.95	1.30
21	2.50	1.95	2.00	2.25	3.15	2.80	4.60	4.40	3.75	3.00	1.90	1.20
22	2.50	2.05	2.10	2.30	3.00	2.65	4.70	4.40	3.65	2.95	1.80	1.22
23	2.45	1.95	1.95	2.45	3.05	2.55	4.75	4.40	3.60	2.80	1.70	1.15
24	2.60	2.15	2.00	2.95	3.20	2.52	4.75	4.30	3.60	2.75	1.65	1.10
25	2.30	1.90	2.00	3.28	3.10	2.50	4.85	4.38	3.65	2.60	1.90	1.20
26	2.40	1.85	2.00	3.50	3.05	2.55	4.90	4.45	3.75	2.78	1.85	1.40
27	2.60	1.60	2.00	3.60	3.05	2.70	4.80	4.35	3.70	2.70	1.80	1.05
28	2.30	1.80	2.10	3.50	3.00	2.55	4.85	4.25	3.80	2.60	1.60	1.10
29	2.25	2.10	2.00	3.55	-	2.75	4.90	4.30	3.70	2.75	1.80	1.40
30	2.20	1.75	2.05	3.70	-	2.95	4.85	4.30	3.65	2.80	1.55	1.05
31	2.35	-	2.10	3.50	-	3.00	-	4.40	-	2.50	1.45	-

1906-7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.10	0.78	1.50	1.60	2.55	2.15	4.40	5.45	4.20	2.90	2.20	1.10
2	1.15	.80	1.50	1.60	2.65	2.15	4.80	5.65	4.10	2.95	2.30	1.20
3	1.10	.90	1.53	1.65	2.60	2.10	4.90	6.05	4.05	2.90	2.20	1.10
4	1.10	.80	1.45	1.85	2.55	2.00	5.00	5.95	4.15	2.95	2.10	1.25
5	1.40	.75	1.40	2.15	2.50	1.95	4.85	5.90	4.20	2.95	2.10	1.25
6	1.35	.80	1.40	2.35	2.40	1.90	4.90	5.90	3.90	2.90	2.10	1.35
7	1.00	.70	1.45	2.45	2.50	1.85	5.00	5.92	3.75	2.95	2.05	1.45
8	1.05	.75	1.50	2.50	2.55	1.85	5.20	5.93	3.66	2.90	1.95	1.40
9	1.50	.70	1.50	2.40	2.60	1.80	4.90	5.95	3.66	2.85	2.00	1.40
10	.90	.75	1.50	2.55	2.65	1.85	4.70	5.85	3.55	2.70	2.00	1.50
11	.90	.80	1.50	2.50	2.50	1.85	4.80	5.70	3.50	2.85	2.00	1.60
12	.80	.70	1.53	2.48	2.45	1.85	4.80	5.65	3.45	2.70	1.95	1.55
13	1.00	.75	1.55	2.45	2.60	1.88	4.80	5.70	3.35	2.65	1.85	1.50
14	.90	.80	1.50	2.50	2.50	1.85	4.70	5.55	3.40	2.65	1.70	1.60
15	.90	.80	1.60	2.50	2.30	1.90	4.75	6.00	3.25	2.70	1.75	1.60
16	.75	.80	1.45	2.55	2.30	1.80	4.80	5.60	3.20	2.80	1.85	1.55
17	.85	.85	1.50	2.55	3.20	1.75	4.75	5.40	3.15	2.70	1.90	1.45
18	.80	1.05	1.40	2.60	2.20	1.85	4.70	5.30	3.10	2.60	1.60	1.50
19	1.00	.95	1.45	2.65	-	1.95	4.70	5.25	3.02	2.45	1.60	1.70
20	.75	1.10	1.45	2.65	2.15	1.95	4.60	5.20	3.00	2.45	1.70	1.60
21	.75	1.15	1.40	2.60	2.20	2.00	4.55	5.20	2.98	2.40	1.45	1.50
22	.80	1.20	1.50	2.70	2.20	2.05	4.50	4.95	3.00	2.40	1.40	1.40
23	.90	1.20	1.50	2.65	2.18	2.15	4.45	4.95	3.00	2.40	1.45	1.60
24	.90	1.20	1.50	2.60	2.25	2.40	4.40	4.80	2.90	2.45	1.35	1.50
25	.85	1.35	1.45	2.70	2.20	2.65	4.55	4.75	2.92	2.35	1.40	1.40
26	.95	1.40	1.45	2.70	2.25	2.85	4.70	4.90	2.95	2.40	1.30	1.30
27	1.15	1.30	1.50	2.70	2.20	2.90	4.90	4.50	2.90	2.20	1.25	1.30
28	1.30	1.45	1.55	2.75	2.15	3.25	5.30	4.45	2.90	2.23	1.20	1.30
29	.90	1.40	1.60	2.78	-	3.55	5.70	4.33	2.90	2.30	1.15	1.20
30	.85	1.60	1.60	2.70	-	4.05	5.20	4.30	2.95	2.25	1.20	1.30
31	.70	-	1.65	2.75	-	4.45	-	4.30	-	2.25	1.10	-

Gage height, in feet, of Richelieu River (Lake Champlain) at Rouses Point, N. Y., 1871-1907, 1939-40--Continued

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.73	0.70	0.81	0.96	0.70	0.63	1.69	6.07	6.00	3.64	2.26	1.15
2	.74	.72	.93	.94	.68	.63	2.08	6.22	5.93	3.58	2.26	1.13
3	.78	.75	.79	.95	.68	.63	2.41	6.46	5.84	3.56	2.30	1.13
4	.78	.81	.77	.92	.66	.65	2.74	6.76	5.77	3.51	2.31	1.10
5	.83	.74	.79	.91	.66	.66	2.99	7.04	5.70	3.44	2.21	1.04
6	.84	.90	.85	.89	.66	.69	3.20	7.19	5.46	3.40	2.13	1.01
7	.75	.96	1.07	.89	.66	.72	3.32	7.10	5.41	3.33	2.03	1.01
8	.91	1.06	.58	.85	.66	.75	3.48	7.08	5.39	3.27	2.00	1.03
9	.72	.85	.84	.86	.65	.76	3.62	7.02	5.23	3.21	1.98	1.05
10	.82	1.26	.78	.86	.66	.76	3.81	6.99	5.33	3.13	1.92	1.13
11	.70	.93	.70	.85	.71	.76	4.01	6.90	5.17	3.01	1.89	1.00
12	.90	.94	.86	.86	.71	.75	4.16	6.82	4.98	2.93	1.93	.94
13	.78	.95	.94	.83	.71	.72	4.43	6.75	4.94	2.90	1.87	.91
14	.83	.91	.81	.86	.67	.73	4.59	6.63	4.90	2.91	1.72	.89
15	.67	.99	.90	.85	.68	.79	4.65	6.56	4.89	2.86	1.69	.88
16	.86	1.06	.96	.83	.69	.83	4.68	6.47	4.75	2.79	1.76	.80
17	.53	.91	.87	.84	.69	.84	4.75	6.42	4.76	2.77	1.68	.77
18	.62	.97	.84	.86	.68	.85	4.95	6.46	4.76	2.69	1.68	.79
19	.95	.89	.83	.85	.67	.84	5.17	6.43	4.55	2.64	1.62	.82
20	.55	.87	.92	.84	.65	.88	5.38	6.42	4.44	2.64	1.44	.81
21	.73	.90	.99	.81	.69	.89	5.51	6.44	4.33	2.61	1.40	.80
22	.63	.88	.95	.77	.68	.92	5.62	6.52	4.24	2.61	1.49	.72
23	.47	.88	.97	.78	.68	.94	5.81	6.54	4.14	2.60	1.36	.76
24	.50	.81	.98	.75	.68	.87	5.85	6.48	4.13	2.61	1.28	.87
25	.68	.79	.97	.75	.67	.86	5.86	6.39	4.15	2.56	1.23	.69
26	.53	.85	.97	.75	.67	.87	5.86	6.30	3.93	2.53	1.20	.76
27	.79	.83	1.00	.75	.65	.89	5.86	6.21	3.94	2.46	1.18	.84
28	.49	.80	1.01	.73	.64	.90	5.90	6.10	3.92	2.42	1.16	.82
29	.52	.87	.98	.72	.65	.93	5.97	6.15	3.80	2.39	1.22	.73
30	.74	.86	.98	.71	-	.94	6.05	6.14	3.72	2.46	1.20	.72
31	.51	-	.99	.71	-	1.21	-	6.08	-	2.36	1.12	-

Monthly gage height, in feet, 1939-40

Month	Maximum	Minimum	Mean
October	0.95	0.47	0.71
November	1.26	.70	.89
December	1.07	.58	.89
Calendar year 1939	8.07	.47	2.68
January	.96	.71	.83
February	.71	.64	.67
March	1.21	.63	.81
April	6.05	1.69	4.48
May	7.19	6.07	6.55
June	6.00	3.72	4.82
July	3.64	2.36	2.90
August	2.31	1.12	1.69
September	1.15	.69	.90
Water year 1939-40	7.19	.47	2.18

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 (general adjustment of 1929).

Records available.- May 1907 to September 1940.

Extremes.- Maximum gage height during year, 7.23 feet May 7; minimum, 0.51 foot Oct. 27. 1907-40: Maximum gage height observed, 8.65 feet Mar. 27, 28, 1936; minimum, -0.25 foot Dec. 4, 1908.

Gage height, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.79	0.71	0.84	1.01	0.77	0.70	1.66	6.15	6.07	3.74	2.38	1.16
2	.81	.78	.81	1.03	.77	.69	2.09	6.31	5.99	3.68	2.36	1.17
3	.83	.83	.85	.99	.76	.68	2.44	6.58	5.89	3.63	2.30	1.17
4	.82	.85	.82	.95	.75	.70	2.74	6.91	5.84	3.59	2.20	1.18
5	.80	.89	.85	.94	.73	.73	3.01	7.16	5.74	3.52	2.15	1.17
6	.79	.96	.86	.93	.73	.75	3.20	7.21	5.61	3.46	2.12	1.18
7	.79	.99	.81	.92	.73	.76	3.35	7.20	5.51	3.39	2.11	1.16
8	.75	1.00	.87	.90	.72	.78	3.46	7.21	5.38	3.31	2.07	1.12
9	.74	1.04	.86	.89	.72	.78	3.63	7.17	5.34	3.26	2.03	1.08
10	.74	.98	.88	.87	.72	.77	3.83	7.09	5.21	3.20	1.98	1.02
11	.78	1.03	.93	.87	.75	.76	4.00	7.01	5.08	3.12	1.94	.98
12	.77	1.03	.93	.86	.76	.76	4.19	6.94	5.03	3.07	1.88	.98
13	.77	1.05	.93	.86	.74	.76	4.47	6.84	4.99	3.01	1.82	.97
14	.76	1.04	.93	.85	.76	.75	4.64	6.74	4.96	2.94	1.81	.95
15	.72	1.02	.95	.87	.76	.83	4.68	6.64	4.86	2.85	1.79	.94
16	.67	.99	.93	.90	.76	.84	4.75	6.52	4.82	2.84	1.72	.92
17	.71	1.01	.93	.87	.76	.85	4.84	6.50	4.73	2.80	1.64	.90
18	.67	.98	.97	.85	.73	.85	4.97	6.52	4.61	2.76	1.61	.89
19	.57	.99	.97	.85	.66	.86	5.23	6.52	4.56	2.71	1.57	.85
20	.63	.98	.97	.82	.66	.87	5.48	6.48	4.49	2.68	1.55	.84
21	.60	.97	.99	.82	.68	.89	5.69	6.51	4.40	2.69	1.54	.85
22	.62	.96	1.00	.83	.68	.89	5.86	6.58	4.33	2.64	1.47	.87
23	.63	.95	1.08	.82	.68	.89	5.91	6.56	4.24	2.61	1.39	.87
24	.61	.95	1.09	.81	.68	.88	5.93	6.53	4.15	2.57	1.36	.80
25	.58	.93	1.05	.81	.68	.88	5.94	6.46	4.00	2.53	1.33	.82
26	.59	.90	1.09	.81	.72	.88	5.95	6.37	3.98	2.53	1.29	.83
27	.58	.88	1.05	.81	.71	.88	5.97	6.28	3.93	2.52	1.24	.81
28	.59	.87	1.03	.80	.71	.88	5.99	6.22	3.88	2.49	1.22	.80
29	.60	.86	1.05	.79	.69	.88	6.02	6.24	3.83	2.45	1.17	.80
30	.58	.84	1.05	.79	-	.90	6.04	6.22	3.78	2.42	1.10	.79
31	.64	-	1.05	.78	-	1.20	-	6.15	-	2.40	1.10	-

Note.- Gage heights for periods Dec. 11 to Jan. 3, Feb. 14-25 computed from once daily readings of float gage in pump house of Burlington Water Department.

Monthly gage height, in feet, water year October 1939 to September 1940

Month	Maximum	Minimum	Mean
October	0.83	0.56	0.69
November	1.05	.71	.94
December	1.09	.81	.95
Calendar year 1939	8.33	.56	-
January	1.03	.78	.87
February	.77	.66	.72
March	1.20	.68	.82
April	6.04	1.66	4.53
May	7.21	6.15	6.64
June	6.07	3.78	4.84
July	3.74	2.40	2.95
August	2.38	1.10	1.72
September	1.18	.79	.96
Water year 1939-40	7.21	.56	2.22

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 1940.
Average discharge.- 12 years, 271 second-feet.
Extremes.- Maximum discharge during year, 2,540 second-feet Apr. 19 (gage height, 6.63 feet); maximum gage height, 8.71 feet Apr. 10 (ice jam); minimum discharge, 20 second-feet (regulated) Nov. 20 (gage height, 1.83 feet); minimum daily, 57 second-feet (regulated) Dec. 5 and Aug. 11.
1928-40: 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 1939-40. except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 12						Apr. 12 to Sept. 30					
2.1	52	2.9	218	4.0	640	2.1	52	2.9	206	4.0	615
2.2	66	3.2	316	4.5	910	2.2	66	3.2	297	4.5	880
2.4	97	3.4	388	5.0	1,210	2.4	97	3.4	365	5.0	1,200
2.6	135	3.6	466	5.9	1,880	2.6	133	3.6	439	5.9	1,870

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	122	101	82	90	80	600	1,120	166	343	228	108
2	127	121	102	86	88	80	680	1,200	164	326	146	83
3	115	108	116	90	88	86	740	1,160	152	249	115	130
4	108	88	113	96	88	98	760	927	148	214	90	132
5	101	81	57	98	88	106	680	594	143	197	86	125
6	101	142	118	102	90	102	540	448	121	185	85	123
7	94	169	143	102	92	94	580	379	114	150	78	118
8	96	150	101	100	92	*90	660	323	126	138	70	117
9	97	151	82	98	88	88	1,100	276	227	113	64	88
10	97	122	76	96	86	86	1,300	243	242	110	61	92
11	105	119	*76	94	90	84	1,250	224	177	104	57	77
12	97	150	74	94	90	82	1,870	218	136	100	64	78
13	97	103	72	96	88	80	1,200	212	402	96	113	85
14	95	77	70	86	*88	86	699	170	673	86	110	86
15	91	100	76	122	88	92	553	146	365	79	112	86
16	70	128	86	116	88	96	657	148	249	118	111	81
17	69	130	102	110	86	98	770	198	187	120	109	81
18	83	95	90	104	86	92	1,690	268	172	100	106	80
19	91	86	86	100	88	90	2,300	207	356	84	119	82
20	93	58	86	98	90	90	1,210	240	602	74	133	83
21	94	76	110	98	90	88	868	414	362	161	105	87
22	96	86	108	98	88	86	898	434	277	221	103	93
23	100	84	98	96	88	84	733	306	222	161	104	89
24	102	80	92	96	86	84	755	236	184	137	104	87
25	110	78	88	94	86	82	988	190	177	277	108	110
26	95	78	86	94	84	82	1,110	156	212	273	100	103
27	100	80	84	92	84	82	1,100	147	686	390	91	93
28	97	84	82	92	82	88	905	192	574	180	98	87
29	97	90	80	90	82	100	845	247	374	126	96	85
30	92	96	82	90	-	150	947	258	327	114	84	83
31	93	-	82	90	-	500	-	191	-	228	83	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,043	140	69	98.2	0.398	0.46
November	3,132	169	58	104	.421	.47
December	2,819	143	57	90.9	.368	.42
Calendar year 1939	91,459	3,050	47	251	1.02	13.78
January	3,000	122	82	96.8	.392	.45
February	2,542	92	82	87.7	.355	.38
March	3,226	500	80	104	.421	.49
April	28,988	2,300	540	966	3.91	4.36
May	11,472	1,200	146	370	1.50	1.73
June	8,317	686	114	277	1.12	1.25
July	5,254	390	74	169	.684	.79
August	3,133	228	57	101	.409	.47
September	2,852	132	77	95.1	.385	.43
Water year 1939-40	77,778	2,300	57	213	.862	11.70

Peak discharge.- Apr. 19 (7:20 a.m.) 2,540 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 19-29, Dec. 9 to Apr. 11.

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 1940.

Average discharge.- 10 years, 672 second-feet.

Extremes.- Maximum discharge during year, 2,910 second-feet May 3; maximum gage height, 8.21 feet Dec. 23 (ice jam); minimum discharge, 85 second-feet (regulated) Nov. 20 (gage height, 1.70 feet); minimum daily, 110 second-feet Oct. 8.
1930-40: 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, 96 second-feet (regulated) Sept. 22, Nov. 10, and 12, 1934.

Remarks.- Records good except those for periods of ice effect, which are fair. Considerable diurnal fluctuation at all stages caused by power plants. Flow partly regulated by storage in Lower Saranac Lake and elsewhere.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.7	85	2.3	315	3.7	1,310
1.8	114	2.7	537	4.5	2,160
2.0	184	3.2	882	5.1	2,660

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	255	254	245	320	460	820	2,560	900	756	545	320
2	170	262	270	290	270	430	740	2,810	865	763	458	182
3	126	198	281	300	270	490	660	2,790	992	699	446	125
4	216	229	194	290	260	460	680	2,550	986	659	360	171
5	289	208	250	300	330	400	640	2,260	898	678	578	349
6	253	215	288	340	320	400	*560	2,160	800	632	598	240
7	234	216	259	235	330	400	600	2,040	731	584	600	209
8	110	227	280	340	350	430	648	1,890	610	522	558	198
9	180	330	330	300	380	440	864	1,770	676	479	574	120
10	236	309	235	290	310	*420	938	1,660	742	556	562	302
11	232	322	280	290	270	430	911	1,530	1,080	609	540	270
12	190	312	*270	280	380	430	1,150	1,400	1,070	604	506	282
13	248	216	330	260	*350	450	862	1,320	1,530	583	546	228
14	280	290	320	215	320	440	638	1,130	1,720	456	481	175
15	281	310	340	300	350	470	582	644	1,390	390	459	266
16	176	300	290	330	340	450	653	554	1,110	468	449	198
17	184	279	290	310	300	490	856	590	1,120	420	296	275
18	244	265	280	320	250	440	1,830	446	1,040	428	276	281
19	300	229	270	360	360	430	2,430	348	1,060	422	194	360
20	296	197	280	330	360	420	2,200	574	932	490	254	212
21	254	274	310	270	350	430	2,170	1,140	896	568	202	310
22	172	290	320	320	350	440	2,020	1,380	830	580	374	271
23	188	260	310	320	340	440	1,730	1,160	640	588	353	256
24	272	260	330	310	350	450	1,600	1,060	673	600	352	320
25	254	270	260	350	330	440	1,520	942	478	786	279	316
26	212	190	290	320	390	440	1,480	831	532	930	172	274
27	248	250	330	310	450	440	1,550	904	762	775	270	184
28	213	270	330	310	490	450	1,650	959	584	452	214	230
29	230	240	360	320	520	450	1,880	974	562	503	289	204
30	216	260	420	310	-	460	2,210	822	560	664	327	261
31	203	-	360	290	-	580	-	908	-	601	325	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,971	300	110	225	0.432	0.50
November	7,733	330	190	258	.495	.55
December	9,211	420	194	297	.570	.66
Calendar year 1939	224,327	3,650	110	615	1.18	16.01
January	9,355	360	215	302	.580	.67
February	9,990	520	250	344	.660	.71
March	13,790	580	400	445	.854	.98
April	37,092	2,430	560	1,236	2.37	2.64
May	42,106	2,810	348	1,358	2.61	3.01
June	26,789	1,720	478	893	1.71	1.91
July	18,245	930	390	589	1.13	1.30
August	12,437	600	172	401	.770	.89
September	7,389	360	120	246	.472	.53
Water year 1939-40	201,108	2,810	110	549	1.05	14.35

Peak discharge.- Apr. 19 (1 a.m.) 2,690 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 14-16, 22-30, Dec. 5, Dec. 8 to Apr. 7.

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 1940.
Average discharge.- 21 years (1919-40), 219 second-feet.
Extremes.- Maximum discharge during year, 2,740 second-feet May 2 (gage height, 6.96 feet); minimum, 20 second-feet (regulated) Nov. 20 (gage height, 2.13 feet); minimum daily, 41 second-feet Feb. 2-5.
1916-17, 1919-40: 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, caused by closing gates in logging dam (gage height, 1.60 feet); minimum daily, 7.2 second-feet July 29, 1920.
Remarks.- Records excellent except those for periods of ice effect, which are fair. Diurnal fluctuation at low and medium stages caused by power plants.

Rating table, water year 1939-40, except periods of ice effect, (gage height, in feet, and discharge, in second-feet)

2.4	39	3.0	132	4.8	905
2.5	49	3.2	184	5.2	1,180
2.6	61	3.6	316	5.6	1,480
2.7	75	4.0	484	6.2	1,990
2.8	91	4.4	680	7.1	2,890

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	83	49	60	42	42	380	1,790	328	244	170	213
2	127	134	54	58	41	42	290	2,640	344	221	138	170
3	90	103	84	56	41	45	230	2,150	322	178	109	126
4	69	82	109	54	41	48	185	1,550	318	164	94	105
5	56	75	75	52	41	50	150	1,120	276	150	89	90
6	56	83	73	52	42	49	124	1,010	204	125	96	67
7	48	82	69	50	45	47	110	1,130	168	106	94	64
8	50	84	64	49	43	45	122	786	161	94	88	54
9	50	83	62	49	42	44	410	620	456	88	72	52
10	46	92	72	48	42	43	500	550	366	89	67	54
11	238	126	64	48	*44	*42	430	505	268	84	61	54
12	146	116	58	47	47	42	640	400	230	89	63	55
13	105	84	61	48	45	43	390	373	310	84	60	52
14	95	66	*64	52	44	44	270	384	364	75	60	54
15	80	70	53	60	43	46	215	596	308	66	58	47
16	76	76	60	a64	42	49	205	*892	292	72	50	68
17	70	65	61	a60	42	a50	260	1,520	234	98	54	48
18	51	68	61	a56	44	a49	620	828	196	70	44	47
19	57	70	63	a54	44	a48	1,060	554	182	68	46	46
20	59	50	69	a52	43	a48	619	691	170	75	51	44
21	56	55	148	a50	42	a47	436	881	156	150	50	46
22	59	57	113	a49	43	a46	326	722	146	146	48	55
23	73	52	97	a48	44	45	278	660	136	109	42	57
24	64	46	88	a47	43	44	242	578	128	92	44	55
25	55	46	75	a46	43	43	224	534	96	123	42	258
26	62	42	73	a45	42	42	248	459	132	131	44	181
27	86	48	68	a44	42	42	268	369	238	106	36	118
28	107	49	70	a43	42	43	296	500	186	86	38	86
29	124	49	62	a43	42	49	494	1,310	199	78	40	51
30	87	49	68	42	-	60	930	578	253	124	37	60
31	88	-	64	42	-	240	-	390	-	210	52	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,654	238	46	85.6	0.738	0.85
November	2,185	134	42	72.8	.628	.70
December	2,251	148	49	72.6	.626	.72
Calendar year 1939	62,678	1,940	39	172	1.48	20.13
January	1,568	64	42	50.6	.436	.50
February	1,241	47	41	42.8	.369	.40
March	1,617	240	42	52.2	.450	.52
April	10,952	1,060	110	365	3.15	3.51
May	27,070	2,640	369	873	7.53	8.68
June	7,167	456	96	239	2.06	2.30
July	3,595	244	66	116	1.00	1.15
August	2,035	170	36	65.6	.566	.65
September	2,477	258	44	82.6	.712	.79
Water year 1939-40	64,812	2,640	41	177	1.53	20.77

Peak discharge.- May 17 (2 p.m.) 1,810 sec.-ft.
* Winter discharge measurement made on this day.
a No gage height record; discharge computed on basis of records for East Branch, at Ausable Forks.
Note.- Stage-discharge relation affected by ice Dec. 30 to Apr. 18.

Ausable River near Ausable Forks, N. Y.

Location.- Water-stage recorder, lat. 44°27'05", long. 73°38'35", 1¾ miles downstream from confluence of East and West Branches of Ausable River and Ausable Forks, Clinton County.
Drainage area.- 448 square miles.
Records available.- September 1924 to September 1940. August 1910 to September 1925 at Ausable Forks 1¾ miles upstream.
Average discharge.- 16 years (1924-40), 682 second-feet.
Extremes.- Maximum discharge during year, 7,330 second-feet May 2 (gage height, 6.70 feet); minimum, 110 second-feet (regulated) Feb. 5, 6; minimum gage height, 1.24 feet (regulated) Nov. 15 and Aug. 24, 28.
1910-40: 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 (ice jam), Mar. 27, 1934; practically no flow July 21, 1912.
Remarks.- Records excellent except those for periods of ice effect or backwater from trash, 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 table, water year 1939-40, except periods of ice effect and of trash on control (gage height, in feet, and discharge, in second-feet)

1.1	97	1.9	391	4.2	2,610
1.2	122	2.3	630	5.0	3,850
1.4	181	2.9	1,085	6.0	5,740
1.6	253	3.5	1,690	6.6	7,090

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	440	422	180	190	120	116	1,300	5,220	1,180	594	560	449
2	400	406	175	185	118	116	960	7,080	1,130	607	394	464
3	254	293	210	180	114	125	860	6,300	1,100	492	297	472
4	207	242	262	170	112	140	740	4,780	920	412	251	294
5	192	220	214	165	110	155	*640	3,410	802	432	214	214
6	153	258	202	160	110	160	600	3,030	630	346	248	180
7	146	282	215	155	125	155	576	3,190	495	298	253	167
8	163	271	191	155	125	150	590	2,440	534	254	216	255
9	176	296	156	150	125	145	1,230	1,850	1,550	228	202	219
10	179	228	215	145	125	145	1,470	1,560	1,190	202	181	191
11	406	284	200	145	*140	140	1,200	1,410	868	226	185	201
12	434	326	175	140	145	*140	2,030	1,160	749	236	174	190
13	302	264	180	140	140	135	1,550	1,030	1,090	252	174	179
14	282	198	175	165	135	140	1,000	1,010	1,160	216	180	170
15	301	184	*130	180	130	145	758	1,400	899	200	166	c160
16	241	238	165	185	125	155	712	2,210	824	224	155	c155
17	234	216	160	175	125	160	846	4,050	670	259	162	c160
18	184	183	155	170	130	155	1,940	2,780	541	216	149	c140
19	192	175	155	160	130	150	3,240	1,720	477	207	151	c135
20	204	164	165	155	130	145	2,100	1,790	451	202	146	c135
21	196	170	360	150	125	145	1,540	2,720	432	288	148	c135
22	196	180	300	145	125	140	1,220	2,270	390	350	143	c145
23	210	175	270	140	125	140	958	1,930	362	284	143	c150
24	211	170	245	140	122	135	878	1,650	353	264	146	c145
25	193	155	225	135	122	135	928	1,450	345	319	149	359
26	193	160	210	135	120	130	984	1,300	347	416	151	468
27	234	165	200	130	120	130	1,010	1,120	626	405	149	301
28	260	175	220	130	118	135	1,130	1,740	552	287	148	220
29	315	180	210	125	118	150	1,520	4,610	465	232	143	171
30	252	180	205	122	-	220	2,820	2,190	572	435	141	154
31	238	-	200	122	-	840	-	1,560	-	726	155	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,568	440	146	245	0.547	0.63
November	6,860	422	155	229	.511	.57
December	6,325	360	130	204	.455	.62
Calendar year 1939	209,816	5,850	130	575	1.28	17.43
January	4,744	a190	122	153	.342	.39
February	3,609	145	110	124	.277	.30
March	5,172	840	116	167	.373	.43
April	37,330	3,240	576	1,244	2.78	3.10
May	79,740	7,080	1,010	2,572	5.74	6.62
June	21,504	1,350	345	717	1.60	1.78
July	10,109	726	200	326	.728	.84
August	6,064	560	141	196	.438	.50
September	6,758	472	135	225	.502	.56
Water year 1939-40	195,803	7,080	110	535	1.19	16.24

Peak discharge.- May 29 (2:30 a.m.) 6,530 sec.-ft.
* Winter discharge measurement made on this day.
c Backwater from trash, aquatic growth, and sludge; discharge computed on basis of one discharge measurement and records for three upstream stations.
Note.- Stage-discharge relation affected by ice Nov. 19, Nov. 22 to Dec. 3, Dec. 10 to Apr. 6.

Black Brook at Black Brook, N. Y.

Location.- Water-stage recorder, lat. 44°26'50", long. 73°44'45", 100 feet downstream from 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 1940.

Average discharge.- 16 years, 50.7 second-feet.

Extremes (regulated).- Maximum discharge during year, 287 second-feet Apr. 19 (gage height, 3.86 feet); minimum, 5.S second-feet Sept. S (gage height, 1.39 feet).
1924-40: 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 incomplete or no gage-height record, which are fair. Flow regulated by Fern Lake and Taylor Pond. Power plant above station not operated during year.

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.4	6.0	2.0	36	3.4	206
1.5	9.2	2.3	61	3.7	258
1.6	13.0	2.6	91		
1.8	23	3.0	144		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	19	32	38	17	16	47	120	a50	24	24	63
2	55	18	29	37	17	16	46	119	a50	20	14	55
3	20	14	32	36	16	16	56	111	a49	18	12	19
4	19	12	30	35	16	16	62	99	a48	17	10	11
5	16	12	22	35	15	16	a59	76	a42	16	10	9.2
6	9.5	18	25	34	15	17	61	60	31	14	30	7.9
7	12	20	24	33	16	17	59	46	24	12	38	7.0
8	42	21	20	32	18	17	66	42	33	10	35	6.0
9	49	24	16	32	21	*17	84	36	130	9.2	34	6.9
10	51	20	23	31	22	16	117	32	110	9.2	33	32
11	54	18	25	30	22	15	120	31	65	8.6	33	44
12	26	15	*19	30	*22	14	170	29	50	26	33	44
13	11	13	25	32	21	14	134	27	72	35	34	43
14	64	11	25	39	21	15	96	26	74	34	33	42
15	77	10	24	40	21	17	68	25	49	34	32	42
16	53	9.6	22	35	20	18	62	25	37	40	31	41
17	38	11	20	30	20	19	70	56	29	31	31	40
18	40	11	20	27	20	19	133	87	24	25	31	40
19	48	11	19	25	19	19	258	63	23	24	32	40
20	48	9.9	21	24	19	19	182	50	22	30	32	39
21	46	12	28	23	19	18	127	82	23	37	29	41
22	46	29	22	22	18	18	108	99	24	25	28	42
23	46	39	25	22	18	17	87	75	18	24	28	40
24	43	41	23	21	18	16	79	59	16	26	36	39
25	39	38	21	21	17	16	104	46	16	35	55	47
26	40	39	19	20	17	15	122	38	21	64	55	26
27	41	37	24	20	17	15	120	35	48	67	53	10
28	37	37	42	19	16	14	113	48	37	40	51	8.2
29	18	38	42	19	16	15	111	a80	29	31	50	7.6
30	9.2	34	40	18	-	19	113	a70	27	42	49	8.1
31	9.7	-	39	18	-	33	-	a54	-	44	51	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,171.4	77	9.2	37.8	-	-
November	641.5	41	9.6	21.4	-	-
December	800	42	18	25.8	-	-
Calendar year 1939	20,277.9	360	9	55.6	1.13	15.24
January	678	40	18	28.3	-	-
February	534	22	15	18.4	-	-
March	529	33	14	17.1	-	-
April	3,034	258	46	101	-	-
May	1,846	120	25	59.5	-	-
June	1,271	130	16	42.4	-	-
July	872.0	67	8.6	28.1	-	-
August	1,047	55	10	33.8	-	-
September	900.9	63	6.0	30.0	-	-
Water year 1939-40	13,524.8	258	6.0	37.0	.749	10.17

* Winter discharge measurement made on this day.
a No gage-height record or record incomplete; discharge determined on basis of records for nearby streams.
Note.- Stage-discharge relation affected by ice Nov. 12-14, Nov. 26 to Dec. 2, Dec. 8-16, 24, 25, Dec. 28 to Feb. 5, Feb. 8 to Mar. 2, Mar. 9-18, 21-28.

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 of Ausable River. Datum of gage is 545.32 feet above mean sea level (general adjustment of 1912).
Drainage area.- 198 square miles.
Records available.- September 1924 to September 1940.
Average discharge.- 16 years, 308 second-feet.
Extremes.- Maximum discharge during year, 4,920 second-feet May 29 (gage height, 6.60 feet); minimum, 30 second-feet Dec. 9 (gage height, 0.98 foot).
1924-40: Maximum discharge, 20,100 second-feet Sept. 22, 1938 (gage height, 12.91 feet, present site and datum, from hook-gage observation, or 11.2 feet, site and datum then in use, from floodmarks; maximum gage height observed, 11.4 feet, site and datum then in use, Mar. 28, 1925, from floodmarks (affected by backwater from West Branch of Ausable River); minimum discharge observed, 20 second-feet Aug. 11, 14, 28, 1934, former site.
Remarks.- Records excellent except those for periods of ice effect, which are fair.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 1

1.0	32	2.0	219	3.5	990
1.1	42	2.2	285	4.0	1,410
1.2	54	2.4	363	4.5	1,880
1.4	84	2.6	450	5.0	2,470
1.6	122	2.8	548	6.1	4,060
1.8	166	3.0	655		

May 2 to Sept. 30

1.0	31	1.4	79	2.0	216
1.1	40	1.6	115	2.3	321
1.2	51	1.8	160	2.6	450

Note.- Same as preceding table above 2.6 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	164	186	64	58	36	37	600	3,010	611	235	234	183
2	141	162	62	56	36	37	440	3,980	558	235	160	172
3	100	124	79	52	35	38	350	3,470	508	182	115	242
4	82	102	93	50	35	43	330	2,430	392	163	91	139
5	71	91	85	48	34	54	290	1,740	325	168	78	82
6	61	106	80	46	34	54	270	1,500	255	136	73	73
7	55	112	79	44	40	52	260	1,620	204	113	70	68
8	55	110	70	43	39	49	270	1,210	225	96	63	144
9	52	124	64	42	38	47	560	915	506	84	58	123
10	50	93	76	41	*37	*44	660	758	401	113	52	82
11	164	115	72	40	39	43	543	684	321	88	50	68
12	181	124	66	39	42	42	993	548	287	88	50	60
13	135	97	62	38	41	42	692	498	467	82	51	54
14	104	83	60	42	40	44	423	498	432	70	55	49
15	98	74	*54	52	39	48	319	722	333	63	49	47
16	79	98	56	56	38	54	304	1,070	313	66	43	43
17	73	91	56	54	38	60	388	2,240	245	91	41	42
18	68	84	54	52	40	60	961	1,310	196	82	41	39
19	64	78	52	50	40	58	1,390	858	165	73	40	38
20	65	72	56	48	40	56	915	887	153	74	42	36
21	61	68	130	46	39	54	708	1,290	141	104	41	36
22	62	68	114	44	39	52	533	1,050	134	115	39	38
23	70	63	104	43	39	50	401	908	121	100	37	43
24	68	60	96	42	38	48	380	777	107	105	36	42
25	62	49	90	41	38	47	428	667	106	126	36	123
26	62	54	82	40	38	46	464	628	121	137	36	147
27	81	56	78	39	38	46	479	564	241	109	36	79
28	89	60	72	38	37	48	584	1,260	210	82	35	78
29	125	63	68	38	37	54	839	2,680	220	70	34	76
30	106	65	64	37	-	90	1,640	1,120	245	233	32	66
31	98	-	60	37	-	360	-	690	-	309	37	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,746	181	50	88.6	0.447	0.52
November	2,732	166	49	91.1	.460	.51
December	2,298	130	52	74.1	.374	.43
Calendar year 1939	94,975	3,030	32	260	1.31	17.84
January	1,396	58	37	45.0	.227	.26
February	1,104	42	34	38.1	.192	.21
March	1,857	360	37	59.9	.303	.35
April	17,444	1,640	260	581	2.93	3.27
May	41,582	3,980	498	1,341	6.77	7.80
June	8,543	611	106	285	1.44	1.61
July	3,792	309	63	122	.616	.71
August	1,855	234	32	59.8	.302	.35
September	2,512	242	36	83.7	.423	.47
Water year 1939-40	87,661	3,980	32	240	1.21	16.49

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 18-20, 26-28, Dec. 10 to Apr. 10.

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 1940.
Average discharge.- 17 years (1923-40), 303 second-feet.
Extremes.- Maximum discharge during year, 3,210 second-feet May 29 (gage height, 6.01 feet); maximum gage height, 8.26 feet (ice jam) Mar. 31; minimum discharge, 34 second-feet Nov. 18 (gage height, 2.18 feet).
1923-40: 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, 27 second-feet Sept. 11, 1932 (gage height, 2.10 feet).
Remarks.- Records good except those for periods of ice effect or incomplete, 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 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 2

2.2	37	2.7	157	3.6	640
2.3	53	2.9	235	4.0	940
2.4	73	3.0	281	4.5	1,390
2.5	97	3.2	365	5.0	1,910
2.6	125	3.4	505	5.6	2,660

May 3 to Sept. 30

2.2	35	2.6	117	3.2	364
2.3	51	2.8	179	3.5	555
2.4	70	3.0	260	4.0	940

Note.- Same as preceding table above 4.0 feet.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	151	87	68	43	43	840	1,840	655	180	187	101
2	128	133	80	64	42	43	640	2,530	780	153	134	190
3	95	128	92	62	42	45	560	2,560	732	143	117	162
4	83	103	105	60	42	52	490	2,080	548	137	100	166
5	73	100	95	58	40	64	440	1,390	437	149	90	110
6	73	174	105	56	40	64	400	1,180	336	156	88	92
7	67	202	92	54	48	60	380	948	275	129	88	81
8	59	131	90	52	48	56	390	876	280	107	81	68
9	57	131	84	50	*47	*54	560	655	482	107	74	64
10	59	108	90	48	45	52	*1,100	555	443	104	72	72
11	85	100	86	47	47	50	974	495	376	117	68	72
12	128	103	73	45	50	50	1,260	443	336	112	64	70
13	99	108	74	47	48	50	1,050	406	406	107	60	72
14	87	92	70	50	47	52	647	370	406	104	68	64
15	69	84	68	60	47	60	505	406	314	85	66	66
16	78	95	66	66	45	68	531	450	284	104	62	57
17	85	108	*66	64	45	72	640	819	234	120	60	53
18	69	82	64	62	47	70	1,060	1,050	213	110	59	55
19	75	92	64	60	47	68	1,560	604	190	94	55	57
20	71	82	68	58	47	66	1,240	515	a180	94	53	55
21	73	76	155	56	45	64	1,240	1,060	a170	110	53	59
22	69	76	140	54	45	62	1,220	1,090	a160	146	57	60
23	71	70	125	52	45	60	822	740	a150	132	59	60
24	78	66	114	50	45	58	659	625	a140	110	55	57
25	71	64	104	48	45	56	718	522	a120	112	53	74
26	83	64	96	47	45	54	778	437	a150	183	53	104
27	97	66	90	47	45	54	762	406	a250	176	49	110
28	92	70	84	45	43	56	822	550	198	123	49	88
29	85	76	80	45	43	66	982	2,280	a185	110	49	74
30	90	80	76	43	-	106	1,320	1,310	a185	184	49	72
31	105	-	72	43	-	500	-	756	-	280	53	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,579	128	57	83.2	0.303	0.35
November	3,065	202	64	102	.371	.41
December	2,760	155	64	89.0	.324	.37
Calendar year 1939	102,765	3,120	50	282	1.03	13.90
January	1,661	68	43	53.6	.195	.22
February	1,308	50	40	45.1	.164	.18
March	2,275	500	43	73.4	.267	.31
April	24,920	1,560	380	831	3.02	3.37
May	29,948	2,560	370	966	3.51	4.05
June	9,615	780	a120	320	1.16	1.29
July	4,078	280	85	132	.480	.55
August	2,225	187	49	71.8	.261	.30
September	2,485	190	53	82.8	.301	.34
Water year 1939-40	86,919	2,560	40	237	.862	11.74

Peak discharge.- May 29 (3:15 p.m.) 3,210 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record or record incomplete; discharge computed on basis of weather records, records for stations on East Branch of Ausable River at Ausable Forks and West Branch of Ausable River near Newman, and recorded range of stage.
Note.- Stage-discharge relation affected by ice Nov. 15, 20-29, Dec. 9 to Apr. 10.

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 (general adjustment of 1912).

Records available.- July 1913 to September 1940.

Extremes.- Maximum gage height during year, 4.64 feet May 6; minimum, 1.07 feet Dec. 11. 1913-40: Maximum gage height observed, 5.09 feet Apr. 9, 1936; minimum, 1.06 feet Dec. 29, 1922.

Remarks.- Elevation of lake surface regulated by power plants and flood gates at Ticonderoga. Storage capacity not determined. Lake George has been regulated by the operation of a dam at its outlet for more than 100 years.

Gage height, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2.08	1.75	1.41	1.28	1.12	1.20	1.55	4.33	4.44	4.00	3.79	3.30
2	a2.05	1.72	1.38	1.27	1.12	1.21	1.62	4.37	4.42	3.98	3.80	3.31
3	a2.06	1.70	1.42	1.27	1.13	1.17	1.69	4.49	4.40	3.97	3.82	3.34
4	2.04	1.69	1.42	1.26	1.12	1.15	1.80	4.52	4.37	3.96	3.80	3.30
5	2.04	1.67	1.39	1.23	1.11	1.28	1.89	4.56	4.38	3.95	3.79	3.24
6	2.01	1.82	1.38	1.22	1.12	1.31	1.98	4.58	4.34	3.94	3.77	3.23
7	1.99	1.82	1.40	1.20	1.17	1.31	2.03	4.55	4.31	3.95	3.71	3.18
8	2.01	1.84	1.36	1.18	1.15	1.32	2.13	4.50	4.36	3.94	3.71	3.18
9	1.98	1.78	1.32	1.17	1.13	1.29	2.31	4.46	4.51	3.92	3.68	3.17
10	a1.97	1.78	1.28	1.16	1.16	1.26	2.44	4.44	4.34	3.91	3.67	3.22
11	a1.96	1.78	1.18	1.15	1.16	1.27	2.56	4.42	4.35	3.83	3.66	3.19
12	a1.94	1.71	1.27	1.15	1.17	1.27	2.75	4.37	4.36	3.85	3.66	3.14
13	a1.93	1.70	1.30	1.15	1.16	1.26	2.98	4.37	4.49	3.86	3.71	3.12
14	1.91	1.68	1.26	1.15	1.14	1.32	3.08	4.35	4.47	3.87	3.59	3.09
15	1.83	1.67	1.25	1.23	1.14	1.39	3.10	4.36	4.52	3.87	3.60	3.05
16	1.84	1.66	1.28	1.26	1.16	1.38	3.15	4.39	4.44	3.84	3.61	3.03
17	1.75	1.61	1.27	1.24	1.17	1.36	3.21	4.42	4.45	3.82	3.56	3.04
18	1.74	1.63	1.26	1.25	1.15	1.37	3.38	4.41	4.47	3.80	3.55	3.03
19	1.76	1.58	1.23	1.26	1.10	1.35	3.54	4.37	4.40	3.78	3.56	2.99
20	1.65	1.54	1.28	1.24	1.13	1.39	3.65	4.36	4.32	3.82	3.50	2.98
21	1.69	1.55	1.39	1.23	1.20	1.40	3.82	4.38	4.22	3.83	3.48	2.97
22	a1.70	1.52	1.38	1.23	1.24	1.40	3.97	4.38	4.15	3.86	3.48	2.92
23	1.67	1.50	1.34	1.22	1.22	1.43	4.04	4.36	4.10	3.87	3.45	2.93
24	1.64	1.46	1.33	1.21	1.21	1.40	4.10	4.34	4.05	3.89	3.40	2.97
25	1.61	1.44	1.33	1.20	1.20	1.38	4.15	4.31	4.08	3.90	3.36	2.92
26	1.56	1.46	1.32	1.21	1.20	1.35	4.20	4.31	4.09	3.89	3.30	2.94
27	1.59	1.45	1.27	1.20	1.21	1.30	4.24	4.32	4.11	3.85	3.29	2.93
28	1.65	1.45	1.27	1.16	1.23	1.27	4.26	4.35	4.08	3.82	3.27	2.90
29	1.66	1.44	1.28	1.15	1.20	1.27	4.29	4.43	4.09	3.84	3.25	2.84
30	1.64	1.43	1.27	1.14	-	1.32	4.31	4.46	4.04	3.91	3.21	2.83
31	1.66	-	1.29	1.13	-	1.47	-	4.41	-	3.87	3.24	-

a Record faulty; gage height estimated.
Note.- Gage height obtained from graph based on gage readings Jan. 19 to Mar. 21.

Monthly gage height, in feet, water year October 1939 to September 1940

Month	Maximum	Minimum	Mean
October	2.06	1.56	1.83
November	1.84	1.43	1.63
December	1.42	1.18	1.32
Calendar year 1939	4.09	1.18	2.90
January	1.28	1.13	1.21
February	1.24	1.10	1.16
March	1.47	1.15	1.32
April	4.31	1.55	3.07
May	4.58	4.31	4.41
June	4.52	4.04	4.30
July	4.00	3.78	3.88
August	3.82	3.21	3.56
September	3.34	2.83	3.08
Water year 1939-40	4.58	1.10	2.57

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 mouth of Hubbardton River, and 3¼ miles northwest of Fair Haven, Rutland County.

Drainage area.- 187 square miles.

Records available.- October 1928 to September 1940.

Average discharge.- 12 years, 249 second-feet.

Extremes.- Maximum discharge during year, 8,840 second-feet May 21, 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, 21.8 feet Mar. 31 (ice jam); minimum discharge, 2.7 second-feet (regulated) July 25; minimum daily, 4.6 second-feet Oct. 15.

1928-40: Maximum discharge, 10,300 second-feet Sept. 22, 1938, from rating curve extended above 1,200 second-feet on basis of computations of low 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 (regulated) Oct. 13, 1935.

Remarks.- Records good except those for periods of ice effect or shifting control, which are fair. Lake Bomoseen may produce seasonal storage. Flow regulated at low stages by power plant above station.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	569	114	70	52	42	1,700	575	590	132	45	54
2	150	356	73	*105	45	36	1,500	620	388	132	47	73
3	142	256	82	110	17	s	1,250	1,710	375	133	17	99
4	137	216	177	110	14	34	1,100	1,190	351	122	33	82
5	130	204	155	105	40	53	950	762	315	116	47	66
6	123	469	137	65	40	50	950	620	278	104	50	72
7	59	424	122	25	35	55	800	545	243	92	55	72
8	s.4	350	118	90	35	60	800	450	170	s2	45	12
9	114	318	108	100	55	14	1,100	400	175	76	61	50
10	114	251	89	115	33	22	1,300	339	194	91	12	78
11	116	228	117	110	36	53	1,350	267	173	85	38	76
12	118	211	93	115	60	46	1,900	267	166	110	50	73
13	124	188	104	65	75	46	2,250	271	440	112	48	77
14	49	175	113	22	60	48	1,150	301	462	91	52	35
15	4.6	164	100	110	30	s0	920	289	363	81	53	14
16	117	145	92	120	32	60	1,070	280	282	77	64	80
17	91	138	75	110	22	70	1,150	710	256	72	51	61
18	94	132	113	120	18	105	1,440	680	315	66	11	82
19	84	122	133	100	25	105	1,660	412	287	61	50	72
20	65	116	145	60	42	120	1,850	548	260	62	68	80
21	31	121	360	15	43	140	1,580	5,760	243	73	60	37
22	s.8	107	235	80	16	120	1,580	2,400	124	78	56	15
23	97	112	177	50	55	90	1,400	1,440	86	77	55	81
24	71	112	140	55	24	70	1,110	1,030	124	70	36	83
25	68	71	84	70	10	75	990	868	117	46	12	89
26	78	40	170	75	36	83	920	782	125	101	56	85
27	94	106	100	38	41	87	815	680	269	50	55	98
28	119	108	130	28	45	83	650	804	254	16	76	70
29	228	93	100	58	48	150	635	1,310	184	89	62	12
30	149	39	80	47	-	350	590	780	143	68	63	85
31	140	-	70	56	-	1,150	-	650	-	60	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,969.8	228	4.6	95.8	0.512	0.59
November	5,944	569	39	198	1.06	1.18
December	3,906	360	70	126	.674	.78
Calendar year 1939	94,061.5	4,310	4.6	258	1.38	18.69
January	2,399	120	15	77.4	.414	.48
February	1,084	75	10	37.4	.200	.22
March	3,505	1,150	s	113	.604	.70
April	36,460	2,250	590	1,215	6.50	7.25
May	27,660	5,760	229	892	4.77	5.50
June	7,752	590	86	258	1.38	1.54
July	2,625	133	16	84.7	.453	.52
August	1,459	76	11	47.1	.252	.29
September	1,963	99	12	65.4	.350	.39
Water year 1939-40	97,726.8	5,760	4.6	267	1.43	19.44

Peak discharge.- Apr. 13 (1 a.m.) 3,600 sec.-ft.; Apr. 20 (2 p.m.) 2,000 sec.-ft.; May 3 (2 p.m.) 2,350 sec.-ft.; May 21 (5 a.m.) 8,840 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 15, 16, 24, Dec. 26 to Apr. 10. Shifting-control method used, Apr. 11 to July 15, Aug. 31 to Sept. 30.

Otter Creek at Center Rutland, Vt.

Location.- Water-stage recorder, lat. 43°36'15", long. 73°00'50", at highway bridge in Center Rutland, Rutland County, 100 feet downstream from dam and 1 mile downstream from East Creek.

Drainage area.- 307 square miles.

Records available.- May 1928 to September 1940.

Average discharge.- 12 years, 566 second-feet.

Extremes.- Maximum discharge during year, 6,760 second-feet May 3 (gage height, 8.76 feet), from rating curve extended above 3,500 second-feet on basis of computation of flow over dam; minimum daily, 57 second-feet Aug. 18.
1928-40: Maximum discharge, 13,700 second-feet Sept. 22, 1938 (gage height, 12.45 feet), by computation of flow over dam; minimum daily, that of Aug. 18, 1940.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Flow affected by diurnal regulation and seasonal storage on East Creek at Pittsford and Chittenden.

Rating table, water year 1939-40 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 24 to Sept. 30)

0.5	56	2.1	395	5.0	2,220
.7	75	2.4	515	6.0	3,170
.9	100	2.7	655	7.0	4,290
1.2	150	3.0	810	8.5	6,310
1.5	214	3.5	1,100		
1.8	295	4.0	1,440		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	383	1,360	197	127	155	157	3,270	2,770	843	456	240	336
2	324	762	203	189	140	104	2,130	4,530	733	435	207	2,770
3	235	492	347	198	125	97	2,050	6,310	755	411	173	2,010
4	199	363	780	186	100	173	1,810	5,310	591	315	106	810
5	189	331	480	176	120	181	1,620	3,820	477	341	174	510
6	177	738	329	135	160	176	1,540	2,970	418	286	213	398
7	164	647	333	113	165	166	1,260	2,310	336	223	306	339
8	126	534	333	168	175	166	1,340	2,090	344	236	187	205
9	165	553	215	172	160	123	1,770	1,750	405	255	179	261
10	177	424	256	165	125	110	2,010	1,370	554	326	134	322
11	184	354	338	160	110	159	2,090	1,160	462	314	101	346
12	134	346	238	160	186	176	3,060	1,270	500	573	157	310
13	165	368	255	115	180	176	4,290	1,090	2,490	528	178	272
14	145	306	281	105	185	180	2,490	899	1,090	334	170	232
15	107	294	225	191	150	263	1,730	841	877	282	162	156
16	159	293	185	179	155	220	1,540	913	874	280	151	198
17	174	297	214	178	110	194	1,540	2,090	630	255	76	234
18	160	244	294	170	100	205	2,130	2,180	502	227	57	200
19	162	220	308	165	135	205	2,580	1,440	438	211	105	170
20	162	261	339	130	191	207	3,070	1,710	394	180	117	166
21	134	236	513	105	189	207	2,490	5,590	352	327	108	145
22	228	228	385	170	131	169	2,010	3,260	297	346	97	143
23	220	218	229	160	163	144	1,580	1,810	274	253	111	160
24	252	212	187	160	108	136	1,300	1,340	275	214	90	187
25	210	152	178	160	103	188	1,260	1,080	406	211	75	423
26	244	130	222	160	162	193	1,400	982	616	210	132	533
27	283	206	216	115	158	177	1,400	939	1,160	147	141	336
28	516	216	208	100	165	193	1,480	1,080	776	122	137	234
29	500	216	199	135	163	226	1,810	1,230	628	191	129	176
30	356	134	154	145	-	536	2,130	843	454	365	129	214
31	538	-	125	150	-	2,490	-	755	-	358	148	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,272	538	107	235	0.765	0.88
November	11,135	1,360	130	371	1.21	1.35
December	8,766	780	126	283	.922	1.06
Calendar year 1939	187,566	5,650	66	514	1.67	22.73
January	4,742	198	100	153	.498	.57
February	4,269	191	100	147	.479	.52
March	8,117	2,490	97	262	.853	.98
April	60,180	4,290	1,260	2,006	6.53	7.29
May	65,712	6,310	755	2,120	6.91	7.96
June	18,951	2,490	274	632	2.06	2.29
July	9,212	573	122	297	.967	1.12
August	4,490	306	57	145	.472	.54
September	12,796	2,770	143	427	1.39	1.55
Water year 1939-40	215,642	6,310	57	589	1.92	26.11

Peak discharge.- Apr. 1 (2 p.m.) 3,820 sec.-ft.; Apr. 13 (5 a.m.) 4,660 sec.-ft.; Apr. 20 (9 a.m.) 3,170 sec.-ft.; May 3 (10 a.m. to 12 m.) 6,760 sec.-ft.; May 21 (2 a.m.) 6,610 sec.-ft.; Sept. 2 (8 a.m.) 3,820 sec.-ft.

Note.- Discharge for periods of no gage-height record, Jan. 10-14, Jan. 18 to Feb. 11, Feb. 14-19, computed on basis of weather records, records for station at Middlebury, and records for stations on nearby streams.

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, Addision 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 1940.

Average discharge.- 24 years (1903-6, 1910-19, 1928-40), 986 second-feet.

Extremes.- Maximum discharge during year, 5,730 second-feet May 7 (gage height, 6.91 feet); minimum, 142 second-feet Aug. 26.

1903-7, 1910-20, 1928-40: 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, which are fair. Small seasonal storage in Chittenden Reservoir, on East Creek.

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	326	1,280	245	260	240	290	2,350	3,290	2,580	784	665	235
2	480	1,570	270	250	250	300	2,400	3,400	2,360	777	498	686
3	522	1,280	372	290	240	240	2,850	3,840	2,080	742	366	1,600
4	438	890	954	305	200	230	3,840	3,950	1,750	672	288	1,700
5	359	648	1,120	290	180	300	4,060	4,500	1,450	600	267	1,500
6	326	898	802	280	210	320	4,060	5,470	1,140	588	284	1,140
7	285	1,190	627	250	255	315	3,950	5,600	904	516	341	770
8	225	1,080	564	210	270	290	3,840	5,340	714	430	402	528
9	235	930	508	250	280	260	3,730	4,950	707	402	346	408
10	289	842	431	255	270	225	3,510	4,580	805	510	280	392
11	352	706	435	255	215	210	3,620	4,100	856	564	239	516
12	336	606	530	250	220	235	3,620	3,740	798	594	211	528
13	289	564	424	240	260	245	3,730	3,400	1,350	784	235	493
14	281	550	410	230	290	255	3,730	3,180	1,920	714	256	446
15	238	494	430	200	280	300	3,730	2,850	1,920	540	263	361
16	235	466	354	270	250	400	4,060	2,580	1,750	498	245	292
17	274	466	346	290	255	380	4,170	2,680	1,500	493	235	337
18	289	466	341	265	240	360	4,280	2,630	1,120	452	203	361
19	289	417	466	260	200	340	4,280	2,630	864	408	167	346
20	278	322	550	265	235	370	4,170	2,630	756	372	228	332
21	266	378	906	205	280	380	3,950	2,960	686	377	245	318
22	262	365	956	190	305	380	3,950	3,070	606	452	239	263
23	336	346	722	250	270	330	4,060	3,180	534	504	222	235
24	445	322	460	250	235	280	4,060	3,400	469	446	217	305
25	431	289	340	255	225	250	3,950	3,620	510	402	192	552
26	378	251	360	245	205	280	3,840	3,620	665	366	150	749
27	431	208	390	250	260	320	3,620	3,510	1,170	332	187	714
28	508	297	370	215	290	340	3,510	3,290	1,450	271	214	558
29	398	322	310	195	295	370	3,400	3,180	1,260	245	214	424
30	310	297	300	220	-	370	3,290	2,960	976	558	203	323
31	622	-	295	230	-	2,250	-	2,850	-	372	192	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11,773	898	225	380	0.605	0.70
November	18,740	1,570	208	625	.995	1.11
December	15,648	1,120	245	505	.804	.93
Calendar year 1939	354,361	5,860	180	971	1.55	21.00
January	7,670	305	190	247	.393	.45
February	7,205	305	180	248	.395	.43
March	11,915	2,250	210	384	.611	.71
April	111,610	4,280	2,350	3,720	5.92	6.61
May	110,980	5,600	2,580	3,580	5.70	6.57
June	35,650	2,580	469	1,188	1.89	2.11
July	16,265	872	245	525	.836	.96
August	8,294	665	150	268	.427	.49
September	17,412	1,700	235	580	.924	1.03
Water year 1939-40	373,162	5,600	150	1,020	1.62	22.10

Note.- Stage-discharge relation affected by ice Dec. 11, 12, 15, Dec. 24 to Apr. 2. Discharge for periods of backwater from aquatic vegetation, June 11 to Sept. 4, computed on basis of three discharge measurements and gage heights.

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 (general adjustment of 1929).

Drainage area.- 397 square miles (revised).

Records available.- May 1909 to September 1923, August 1928 to September 1940.

Average discharge.- 21 years (1914-23, 1928-40), 591 second-feet (adjusted for change in reservoir contents since October 1938).

Extremes.- Maximum discharge during year, 6,490 second-feet May 3 (gage height, 9.96 feet); minimum daily, 48 second-feet (regulated) Aug. 25.

1909-23, 1928-40: 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 Sept. 3, 1933.

Maximum discharge known, 52,000 second-feet Nov. 3, 1927 (gage height, 27.1 feet), by slope-area method.

Remarks.- Records good. Flow regulated by several small power plants above station and by Peacham Pond and Mollys Falls Reservoir on Mollys Brook, (combined usable capacity, 492,000,000 cubic feet, revised), which regulates run-off from 24 square miles, and since 1935 by East Barre Detention Reservoir (see p. 195) and Wrightsville Detention Reservoir (see p. 197), (combined usable capacity, 1,379,500,000 cubic feet).

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.9	48	3.4	141	4.0	379	6.0	1,900
3.0	62	3.6	201	4.5	675	8.0	3,980
3.2	96	3.8	280	5.0	1,030	10.0	6,490

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	1,400	137	125	90	90	1,800	2,600	1,400	357	364	94
2	242	775	122	185	90	90	1,350	2,900	1,190	386	265	610
3	223	509	266	150	59	84	1,300	5,300	1,110	294	222	442
4	205	359	747	145	60	94	1,250	3,540	990	241	131	256
5	186	286	448	135	90	100	1,100	2,600	816	270	141	192
6	144	630	296	100	95	94	1,050	2,300	675	207	197	164
7	113	569	318	80	90	100	960	2,200	576	169	202	134
8	83	439	294	115	75	110	960	2,000	439	187	186	104
9	121	382	224	85	100	95	1,450	1,810	519	221	191	122
10	157	338	189	*115	95	87	1,950	1,680	587	173	157	145
11	360	306	230	115	82	90	2,150	1,540	522	185	82	165
12	319	267	240	130	110	90	3,650	1,500	499	199	130	198
13	266	239	250	115	90	97	2,800	1,360	676	179	147	181
14	203	245	240	105	95	115	2,000	1,270	607	104	188	203
15	113	245	200	120	100	110	1,720	1,030	473	112	177	98
16	139	238	175	115	97	120	1,680	915	477	186	164	133
17	176	205	*155	110	87	92	2,100	1,540	378	197	118	144
18	169	182	202	115	83	105	3,000	1,720	349	195	65	149
19	162	147	219	115	100	120	3,320	1,270	341	168	109	155
20	165	160	222	84	*97	140	3,000	1,230	330	151	167	135
21	121	178	461	78	93	145	2,600	3,430	276	198	191	117
22	153	182	386	105	85	130	2,200	2,350	225	249	168	415
23	227	185	300	97	97	125	1,950	1,810	185	238	177	288
24	237	174	210	99	88	105	1,810	1,580	192	210	173	215
25	216	130	190	95	90	100	1,860	1,400	262	316	g48	683
25	202	75	240	105	95	120	2,000	1,190	254	446	109	603
27	384	152	200	95	92	*160	2,000	915	413	520	97	340
28	362	166	175	68	110	165	2,100	1,860	394	263	150	238
29	447	199	160	100	100	155	2,250	3,210	305	213	158	188
30	311	150	145	84	-	150	2,400	1,900	267	560	122	169
31	498	-	130	84	-	1,400	-	1,540	-	727	139	-

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	7,004	498	83	226	-8.64	217	0.547	0.63
November	9,512	1,400	75	317	-18.7	298	.751	.84
December	7,771	747	122	251	+2.32	253	.637	.73
Calendar year 1939	210,637	6,210	27	577	-7.58	570	1.44	19.47
January	3,369	185	68	109	-1.47	107	.270	.31
February	2,655	110	59	91.6	+4.17	95.7	.241	.26
March	4,758	1,400	84	153	+9.19	163	.411	.47
April	59,760	3,650	960	1,992	+158	2,150	5.42	6.04
May	61,490	5,300	915	1,984	+12.3	1,996	5.03	5.80
June	15,727	1,400	185	524	-42.3	482	1.21	1.35
July	8,101	727	104	261	-16.8	245	.617	.71
August	4,935	364	48	159	-56.7	102	.257	.30
September	7,080	683	94	236	+5.92	242	.610	.68
Water year 1939-40	192,162	5,300	48	525	+3.67	529	1.33	18.12

* Winter discharge measurement made on this day.

† Change in contents in Peacham Pond, Mollys Falls Reservoir, East Barre and Wrightsville Detention Reservoirs (combined usable capacity, 1,871,500,000 cubic feet).

g Computed from graph drawn on basis of outside gage readings.

Note.- Stage-discharge relation affected by ice Nov. 26, Dec. 11-17, Dec. 24 to Apr. 8.

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 (revised).
Records available.- October 1928 to September 1940.
Average discharge.- 12 years, 1,640 second-feet (adjusted for change in reservoir contents since October 1938).
Extremes.- Maximum discharge during year, 22,800 second-feet May 3 (gage height, 13.38 feet); minimum daily, 86 second-feet (regulated) Oct. 15.

1928-40: 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 computation of flow over dam at gage heights 18.72 feet, 23.54 feet, and 50.4 feet; minimum daily, 70 second-feet 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 above 12,000 second-feet, which are good, and those for period of ice effect, which are fair. Flow regulated by power plant and by reservoirs on Mollys Brook and, since 1937, by Waterbury Reservoir (see p. 201) (combined usable capacity, 3,304,300,000 cubic feet, revised), which regulate run-off from 24 square miles and 109 square miles, respectively, and since 1935 by East Barre Detention Reservoir (see p. 195) and Wrightsville Detention Reservoir (see p. 197) (combined usable capacity, 1,379,500,000 cubic feet).

Rating table, water year 1939-40, except period of ice effect (gage height, in feet, and discharge, in second-feet)

0.2	83	0.6	175	1.0	305	2.0	1,040	4.0	4,110
.3	98	.7	205	1.1	345	2.5	1,610	6.0	8,180
.4	117	.8	237	1.2	400	3.0	2,300	8.0	12,100
.5	145	.9	270	1.6	680	3.5	3,130	11.1	18,200

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	592	2,350	349	420	360	350	5,000	9,380	3,600	1,080	1,380	507
2	636	2,190	311	700	370	360	3,800	11,200	3,130	1,200	929	918
3	580	1,450	235	500	350	200	3,200	18,200	2,950	1,050	688	1,450
4	424	1,200	1,420	510	150	380	3,100	15,800	2,530	804	232	719
5	443	596	1,500	520	340	440	2,600	8,980	2,150	917	624	576
6	530	1,080	940	530	350	380	2,300	7,180	1,740	783	620	462
7	224	1,480	845	370	400	320	2,100	6,580	1,430	442	631	305
8	200	1,480	982	600	250	370	2,200	5,980	1,220	502	624	270
9	365	989	612	480	380	400	3,700	5,380	1,330	592	585	620
10	394	926	344	410	290	240	4,500	4,970	1,430	606	442	690
11	1,100	604	800	420	310	480	5,080	4,650	1,380	611	319	622
12	916	601	700	460	390	430	6,780	4,430	1,130	547	543	638
13	826	962	740	420	350	430	9,780	4,110	1,270	429	614	526
14	570	740	670	360	340	470	5,180	3,900	1,730	270	574	498
15	86	794	690	400	330	500	3,900	3,700	1,420	504	656	390
16	498	683	710	440	320	500	4,320	3,500	1,480	612	662	522
17	506	717	500	450	330	270	4,430	5,580	1,200	590	496	688
18	489	616	750	460	270	460	7,980	6,180	804	614	523	719
19	484	435	700	470	430	400	8,780	4,540	664	522	534	688
20	462	656	870	400	430	370	8,380	4,000	747	540	640	700
21	324	576	950	480	390	400	6,380	7,180	812	869	783	474
22	322	540	900	470	290	480	5,380	7,380	732	977	664	291
23	821	580	700	430	380	390	4,430	5,780	376	808	608	645
24	596	446	600	430	e370	470	3,900	4,970	690	610	522	572
25	696	480	470	460	190	510	4,000	3,310	666	390	458	612
26	716	268	700	390	*410	510	4,540	2,780	606	857	649	1,220
27	605	477	540	400	330	420	4,970	2,300	912	1,170	682	1,030
28	709	562	440	350	320	470	5,580	2,610	1,030	560	742	625
29	631	571	630	490	360	380	6,580	10,200	1,100	725	630	362
30	898	311	500	420	-	900	7,780	5,180	762	714	682	464
31	1,020	-	530	430	-	4,500	-	3,600	-	1,870	712	-

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	17,663	1,100	86	570	+43.3	613	0.587	0.68
November	25,360	2,350	268	845	+10.7	856	.820	.91
December	21,628	1,500	235	698	+1.90	700	.670	.77
Calendar year 1939	574,666	16,200	84	1,574	-15.6	1,559	1.49	20.27
January	14,070	700	350	454	-105	349	.334	.39
February	9,780	430	150	337	-50.0	287	.275	.30
March	17,180	4,500	200	554	-19.8	534	.511	.59
April	152,650	9,780	2,100	5,088	+798	5,886	5.64	6.29
May	193,530	18,200	2,300	6,243	-39.5	6,203	5.94	6.85
June	41,021	3,600	376	1,367	-81.8	1,286	1.23	1.37
July	22,765	1,870	270	734	-14.0	720	.690	.80
August	19,388	1,380	232	625	-322	303	.290	.34
September	18,803	1,450	270	627	-84.1	543	.520	.58
Water year 1939-40	553,838	18,200	86	1,513	+10.2	1,523	1.46	19.87

* 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 (combined usable capacity, 4,683,800,000 cubic feet).
Note.- Stage-discharge relation affected by ice Dec. 11 to Apr. 10

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 confluence with Stevens 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 1940.

Extremes.- Maximum gage height observed during year, 23.3 feet May 4; minimum, 0.2 foot August 19, 29-31.
1936, 1938-40: Maximum gage height, 36.0 feet Mar. 22, 1936; minimum, 0.1 foot on 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. 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. Gage read at 4 p. m.

Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height at 4 p.m., in feet, of water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	7.8	0.5	1.0	0.4	0.5	-	16.2	8.85	1.4	1.05	0.5
2	-	2.2	.7	1.0	.4	.5	7.0	18.0	3.8	1.55	.8	8.05
3	-	-	-	1.0	.4	.5	-	20.9	4.0	1.1	.7	3.3
4	-	1.5	-	1.0	.4	.6	-	23.3	4.6	1.3	.6	1.5
5	-	1.2	1.7	1.0	.4	.6	4.0	23.2	3.3	1.3	.5	1.1
6	-	-	1.6	.9	.4	.6	4.0	22.65	2.8	1.15	.45	.9
7	-	-	1.5	.8	.4	.5	4.0	21.8	2.3	.9	.35	.7
8	-	-	1.5	.7	.4	.5	3.4	20.8	2.1	.75	.3	.65
9	-	-	1.6	.6	.4	.5	3.0	19.7	2.6	.6	.3	.6
10	-	-	1.7	.5	.4	.5	-	18.25	2.6	.7	.25	.55
11	1.3	-	1.7	.5	.4	.5	8.0	16.7	2.3	.55	.4	1.5
12	-	1.5	1.5	.5	.4	.5	13.0	15.2	2.2	.75	.25	.9
13	-	1.5	1.5	.5	.4	.5	13.0	13.5	2.95	.8	.25	.7
14	-	1.3	1.5	.5	.4	.6	13.0	10.9	2.5	.65	.5	.6
15	.7	1.2	1.5	.5	.4	.7	13.5	3.9	1.8	.5	.4	.55
16	.6	1.2	1.5	.5	.4	.7	-	3.1	2.1	.45	.25	.45
17	.6	1.0	1.5	.5	.5	.7	5.0	-	1.55	.7	.25	.4
18	.5	1.0	1.5	.5	.4	.7	-	12.5	1.35	.55	.25	.35
19	.6	.9	1.3	.4	.4	.7	13.3	9.3	1.2	.45	.2	.3
20	.6	.9	1.1	.4	.5	.7	15.5	4.5	1.2	.4	.45	.3
21	.7	.9	-	.4	.4	.7	15.0	15.5	1.25	2.15	.6	.3
22	-	.9	-	.4	.4	.7	14.0	15.8	1.1	1.45	.4	-
23	-	.7	-	.4	.4	.7	12.6	14.75	1.05	1.3	.3	.75
24	-	.7	1.2	.4	.5	.7	9.3	13.45	.9	.8	.3	.5
25	.7	.7	1.2	.4	.5	.8	7.6	11.5	1.1	2.8	.25	6.0
26	1.3	.7	1.0	.4	.5	1.0	9.9	6.8	1.2	1.45	.25	3.05
27	2.1	.5	1.0	.4	.5	1.0	9.6	3.7	2.8	1.4	.25	1.6
28	2.0	.4	1.0	.4	.5	1.2	11.9	3.3	1.6	.95	.25	1.2
29	2.0	.5	1.2	.4	.5	1.2	13.2	14.2	1.55	.7	.2	1.0
30	1.25	.6	1.2	.4	-	1.4	14.6	13.55	-	.75	.2	.8
31	1.85	-	1.0	.4	-	3.1	-	11.75	-	3.5	.2.	-

Gage height and contents, water year October 1939 to September 1940

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	2.0	1.11	-	-
Oct. 31	7.5	7.58	+6.47	+2.42
Nov. 30	.6	.30	-7.28	-2.81
Dec. 31	1.0	.50	+.20	+.07
Calendar year 1939	-	-	-.49	-.02
Jan. 31	.4	.20	-.30	-.11
Feb. 29	.5	.25	+.05	+.02
Mar. 31	5.0	3.80	+3.55	+1.33
Apr. 30	15.5	54.8	+51.0	+19.7
May 31	9.8	13.25	-41.6	-15.5
June 30	1.4	.74	-12.5	-4.82
July 31	1.5	.80	+.06	+.02
Aug. 31	.3	.15	-.65	-.24
Sept.30	.7	.35	+.20	+.08
Water year 1939-40	-	-	-.76	-.02

*Gage height for last day of month is midnight gage height determined from stage graph constructed on basis of observer's readings and graph for station on Jail Branch, below reservoir.

Jail Branch at East Barre, Vt.

Location.- Water-stage 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 confluence with 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 1935 to September 1940.
Extremes.- Maximum discharge during year, 418 second-feet May 3; maximum gage height, 3.03 feet Apr. 1 (ice jam); minimum discharge, 2.1 second-feet Aug. 18, 19.
1920-23, 1933-40: Maximum discharge observed, 1,350 second-feet Apr. 10, 1922 (gage height, 8.38 feet, former site and datum), from rating curve extended above 900 second-feet; minimum observed, 0.5 second-foot Sept. 11, 1921.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Run-off affected by storage in East Barre Detention Reservoir since November 1935 (see p. 195). Diversions from reservoir in Orange Brook, a tributary upstream, for municipal use of city of Barre.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 1						Apr. 2 to Sept. 30					
0.1	2.5	0.6	18	1.1	86	0.08	2.1	0.6	19	1.2	120
.2	4.9	.7	25	1.2	112	.1	2.5	.7	26	1.3	154
.3	7.6	.8	34	1.3	140	.2	4.9	.8	36	1.4	194
.4	11	.9	48	1.4	176	.3	7.6	.9	50	1.6	295
.5	14	1.0	65	1.5	220	.4	11	1.0	69	1.8	425
						.5	14	1.1	92		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	167	b8	9.4	4.4	6	b190	338	192	28	14	5
2	11	48	9.1	8.5	4.2	6	b210	364	93	24	9	90
3	7.4	28	b40	7.6	4.2	6	b200	398	126	15	7	100
4	6.2	22	b70	7.1	4.2	6	138	398	102	23	f5.4	30
5	5.4	21	b35	6.5	4.2	6.5	87	391	71	26	4.7	15
6	5.2	83	b30	6.0	4.2	6.5	90	384	54	17	4.7	10
7	5.2	50	25	5.4	4.4	6.5	79	377	44	12	4.7	8
8	4.7	33	17	4.9	4.7	6.5	69	371	42	9.4	4.2	7
9	6.4	27	b15	4.7	4.7	6	122	364	56	8.2	3.5	7
10	6.6	20	b20	*4.4	4.7	6	199	351	50	8.2	3.2	8
11	18	25	b19	4.2	4.9	6.5	199	332	44	7.1	4.0	14
12	10	21	b16	4.2	5.2	6.5	279	307	42	11	4.3	12
13	8.7	14	b19	4.7	5.4	6.5	314	279	56	12	3.2	9
14	7.2	13	b16	4.9	5.4	6.5	301	236	44	7.9	6.9	7
15	5.7	b14	*b13	5.2	5.4	7	273	96	40	6.2	4.7	6
16	5.4	b13	b15	5.4	5.7	7	209	76	37	6.2	3.2	5.5
17	5.2	13	b15	6.0	5.5	7	159	237	26	7.1	2.6	5
18	5.9	13	b13	6.2	5.5	6.5	273	273	23	5.7	2.1	5
19	5.5	12	b13	6.2	*5.5	7	307	236	22	4.9	2.4	4.5
20	4.9	10	b17	5.7	6	7.5	326	177	19	6.5	6.0	4.5
21	6.4	b10	b40	5.4	6	7	320	332	18	33	6.0	f6.2
22	26	b9	b30	5.4	5.5	7	295	326	17	24	4.4	13
23	19	b8	b25	5.4	5.5	7.5	273	307	15	18	3.7	8.5
24	11	b7	b19	5.4	5.5	7.5	236	290	13	12	4.2	7.4
25	7.9	b6	16	5.2	5.5	8	213	252	18	52	3.7	129
26	18	b5	12	5.2	5	8	241	158	20	40	3.2	54
27	35	b5.2	9.4	5.2	5	8	263	85	45	21	3	f27
28	35	6.0	8.5	4.9	5	*f8.5	279	139	26	12	2.5	15
29	30	7.4	7.9	4.9	5.5	8.5	295	307	25	8.2	2.5	11
30	17	b8	8.5	4.7	-	10	320	290	19	12	2.5	9
31	57	-	9.7	4.7	-	b45	-	263	-	56	2.5	-

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	426.9	57	4.7	13.8	+2.42	16.2	0.491	0.57
November	718.6	167	5	24.0	-2.81	21.2	.642	.71
December	611.1	70	7.9	19.7	+.07	19.8	.600	.69
Calendar year 1939	18,410.4	404	2.3	50.4	-.02	50.4	1.53	20.72
January	173.6	9.4	4.2	5.60	-.11	5.49	.166	.19
February	146.9	6	4.2	5.07	+.02	5.09	.154	.17
March	255.0	45	6	8.23	+1.33	9.56	.290	.33
April	6,759	326	69	225	+19.7	245	7.42	8.28
May	8,734	398	76	282	-15.5	266	8.06	9.30
June	1,399	192	13	46.6	-4.82	41.8	1.27	1.41
July	533.6	56	4.9	17.2	+.02	17.2	.521	.60
August	138.0	14	2.1	4.45	-.24	4.21	.128	.15
September	632.6	129	4.5	21.1	+.08	21.2	.642	.72
Water year 1939-40	20,528.3	398	2.1	56.1	-.02	56.1	1.70	23.12

* Winter discharge measurement made on this day.
† Change in contents in East Barre Detention Reservoir.
b Stage-discharge relation affected by ice.
f Gage height partly estimated.
Note.- Discharge for periods of no gage-height record, Feb. 17 to Mar. 27, Aug. 2, 3, Aug. 27 to Sept. 20, Sept. 28-30, computed on basis of one discharge measurement, limits of stage as indicated by recorder chart, weather records, records for East Barre Detention Reservoir, and records for stations on nearby streams.

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. 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, October 1938 to September 1940.

Extremes.- Maximum gage height observed, 54.0 feet May 4; minimum observed, 0.5 foot Aug. 16, 17.
1936, 1938-40: Maximum gage height observed, 63.7 feet Mar. 22, 1936, from graph based on gage readings; minimum observed, 0.4 foot Sept. 4, 22, 23, 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 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, 5½ feet square, near base of dam. Gage read at 7:30 a.m.

Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height at 7:30 a.m., in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	-	1.4	2.2	1.3	1.3	-	32.8	-	3.4	3.7	-
2	3.0	8.8	1.5	2.1	1.3	1.3	10.9	36.6	7.6	-	-	2.7
3	2.8	-	2.6	2.1	1.3	1.3	11.5	46.0	6.0	-	2.5	-
4	-	-	6.0	2.1	1.2	1.3	11.0	54.0	5.0	-	2.0	-
5	-	-	-	1.9	1.3	1.3	10.5	53.8	4.6	-	1.8	-
6	-	-	-	1.8	1.4	1.3	8.6	52.6	3.0	-	1.6	-
7	-	-	-	1.8	1.4	1.3	6.4	49.4	2.9	-	1.5	-
8	1.2	4.0	-	1.6	1.3	1.4	6.5	46.8	2.6	-	1.3	-
9	1.0	-	-	1.4	1.3	1.4	6.8	43.6	3.2	-	1.2	-
10	1.3	3.5	2.7	1.3	1.4	1.4	8.6	39.8	3.4	-	1.0	-
11	3.4	3.2	2.8	1.3	1.4	1.3	9.5	36.0	3.5	-	1.0	-
12	4.1	3.6	2.7	1.3	1.4	1.3	13.6	32.6	3.5	-	1.0	-
13	3.6	3.4	2.6	1.4	1.4	1.3	20.2	27.6	3.6	-	.8	-
14	2.6	-	2.4	1.2	1.4	1.4	19.9	23.4	-	-	.8	1.6
15	-	-	2.2	1.4	1.4	1.4	17.8	18.8	-	-	.7	1.2
16	-	-	2.2	1.6	1.4	1.4	14.9	13.8	-	1.3	.6	1.0
17	-	2.6	2.2	1.6	1.4	1.4	12.1	10.6	-	1.4	.5	.9
18	-	2.1	2.2	1.5	1.4	1.4	15.0	14.2	-	-	.7	1.0
19	-	-	2.2	1.4	1.5	1.4	20.9	12.0	-	-	.7	1.2
20	-	-	2.3	1.4	1.5	1.4	24.0	9.6	-	-	1.3	1.2
21	-	-	3.6	1.3	1.5	1.5	24.2	11.5	-	1.8	1.2	-
22	-	-	4.1	1.3	1.4	1.5	23.8	19.0	-	1.9	1.2	3.8
23	-	-	3.7	1.3	1.3	1.4	21.4	17.4	1.8	-	1.0	-
24	-	-	3.1	1.3	1.3	1.4	18.7	14.4	1.7	-	.8	2.2
25	-	1.6	3.1	1.4	1.3	1.4	17.4	11.2	1.7	-	-	3.6
26	-	-	2.9	1.4	1.3	1.4	16.2	7.5	1.8	5.3	-	4.4
27	-	1.5	2.9	1.4	1.3	1.4	17.6	6.5	2.5	5.1	.7	3.0
28	-	1.5	2.6	1.4	1.3	1.5	21.2	4.7	-	3.6	.7	2.4
29	5.0	1.3	2.4	1.4	1.3	1.5	24.6	17.0	3.0	-	.8	2.4
30	-	1.4	2.2	1.3	-	1.6	28.4	18.4	3.0	3.3	1.0	2.0
31	-	-	2.2	1.3	-	4.9	-	17.2	-	-	-	-

Gage height and contents, water year October 1939 to September 1940

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	2.0	4.8	-	-
Oct. 31	6.3	18.5	+13.7	+5.11
Nov. 30	1.4	3.25	-15.25	-5.88
Dec. 31	2.2	5.35	+2.1	+.78
Calendar year 1939	-	-	+.3	+.01
Jan. 31	1.3	3.0	-2.35	-.88
Feb. 29	1.3	3.0	0	0
Mar. 31	6.4	18.85	+15.85	+5.92
Apr. 30	31.4	193.5	+174.65	+87.4
May 31	14.4	54.9	-138.6	-51.7
June 30	3.0	7.55	-47.35	-18.3
July 31	3.7	9.65	+2.1	+.78
Aug. 31	1.3	3.0	-6.65	-2.48
Sept.30	1.9	4.55	+1.55	+.60
Water year 1939-40	-	-	-.25	-.01

*Gage height for last day of month is midnight gage height determined from stage graph constructed on basis of observer's readings and stage graph for station on North Branch of Winooski River downstream from Reservoir.

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 1940.

Extremes.- Maximum discharge during year, 875 second-feet May 4 (gage height, 3.84 feet); minimum daily, 1.9 second-feet Aug. 26-28.
1933-40: Maximum discharge, 2,170 second-feet Apr. 12, 1934 (gage height, 6.53 feet), from rating curve extended above 920 second-feet; minimum daily, 0.5 second-foot Aug. 2, 1935.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Run-off affected by storage in Wrightsville Detention Reservoir since November 1935 (see p. 197). Diurnal fluctuation at low stages caused by small mill above station.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0	0.3	0.4	14	0.8	39	1.4	117	3.0	510
.1	2.4	.5	19	.9	48	1.6	152	3.5	705
.2	5.6	.6	24	1.0	59	2.0	234	3.9	900
.3	9.5	.7	31	1.2	86	2.5	359		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	309	21	27	14	16	300	660	359	85	75	17
2	67	301	22	25	13	16	360	750	252	95	49	63
3	44	199	51	23	13	16	370	850	181	69	37	75
4	31	122	175	22	13	16	359	875	141	54	f29	50
5	23	85	141	21	13	17	329	850	112	50	25	36
6	19	114	95	20	14	18	298	850	62	44	21	26
7	18	124	82	19	14	19	236	825	56	35	18	19
8	17	106	68	18	14	20	f216	800	51	27	16	14
9	15	90	54	17	14	19	f216	775	68	22	14	11
10	17	75	54	16	14	18	298	750	76	21	f13	11
11	95	71	55	e15	15	18	337	705	79	20	11	18
12	96	71	50	15	15	18	431	f660	f69	21	10	23
13	66	64	45	16	15	18	528	620	73	20	9.5	22
14	46	52	40	16	16	18	528	562	86	14	9.5	21
15	35	46	39	17	16	20	494	494	75	12	9	18
16	29	43	38	17	16	20	431	402	75	14	5	16
17	29	44	e37	18	*14	20	387	359	58	16	2	12
18	29	43	35	18	16	18	462	416	45	f16	2	10
19	24	41	36	18	17	20	545	373	43	f16	5	12
20	21	37	38	17	18	21	580	335	40	16	15	11
21	20	33	83	16	18	20	580	387	34	26	13	9.7
22	34	30	94	16	18	20	580	494	33	28	14	73
23	55	28	60	17	17	20	545	477	26	27	10	68
24	57	26	47	16	17	20	510	416	21	24	6	45
25	48	24	40	15	17	20	f477	346	22	28	f2.1	66
26	51	23	35	15	16	20	477	252	25	92	1.9	100
27	104	21	31	15	16	20	510	202	64	127	1.9	75
28	117	21	29	14	16	20	545	190	76	73	1.9	51
29	148	21	26	14	16	20	580	477	63	48	2.5	38
30	107	21	25	14	-	*26	620	494	66	72	12	30
31	106	-	27	14	-	90	-	462	-	100	16	-

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	1,634	148	15	52.7	+5.11	57.8	0.835	0.96
November	2,285	309	21	76.2	-5.88	70.3	1.02	1.13
December	1,673	175	21	54.0	+.78	54.8	.792	.91
Calendar year 1939	43,308.1	890	1.6	119	+.01	119	1.72	23.31
January	541	27	14	17.5	-.88	16.6	.240	.28
February	445	18	13	15.3	0	15.3	.221	.24
March	662	90	16	21.4	+5.92	27.3	.395	.45
April	13,129	620	216	438	+67.4	505	7.30	8.14
May	17,108	875	190	552	-51.7	500	7.23	8.33
June	2,431	359	21	81.0	-18.3	62.7	.906	1.01
July	1,312	127	12	42.3	+.78	43.1	.623	.72
August	456.3	75	1.9	14.7	-2.48	12.2	.176	.20
September	1,040.7	100	9.7	34.7	+.60	35.3	.510	.57
Water year 1939-40	42,717.0	875	1.9	117	-.01	117	1.69	22.94

* Winter discharge measurement made on this day.
† Change in contents in Wrightsville Detention Reservoir.
f Computed from partly estimated gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 9, 11-20, Dec. 23 to Feb. 24, Feb. 26 to Mar. 2, Mar. 4-12, 19-22, 25-28, Mar. 31 to Apr. 3. No gage-height record Apr. 10-24, May 13 to June 11, Aug. 5-9, 11-24; discharge computed on basis of 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 1940.

Extremes.- Maximum discharge during year, 3,600 second-feet May 3 (gage height, 6.70 feet), from rating curve extended above 1,100 second-feet on basis of computations of flow over dam and by slope-area determinations at gage heights 8.49 feet and 11.53 feet; minimum, 6.0 second-feet (regulated) Aug. 30.

1934-40: Maximum discharge, 9,750 second-feet Sept. 21, 1938 (gage height, 11.53 feet), by slope-area method; minimum, 4.8 second-feet (regulated) several times during August and September 1939.

Remarks.- Records good except those for periods of ice effect, which are fair. Some diurnal regulation at low stages caused by power plant above station.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.5	4.4	0.9	24	1.3	62	1.8	165	3.0	608	5.0	1,920
.6	7.6	1.0	32	1.4	78	2.0	222	3.5	860	5.5	2,360
.7	12	1.1	39	1.5	96	2.2	286	4.0	1,170		
.8	18	1.2	49	1.6	117	2.5	394	4.5	1,520		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	158	19	30	18	20	*522	950	279	47	25	11
2	28	71	21	27	18	16	345	980	222	46	16	82
3	20	49	61	26	18	19	364	2,040	190	38	17	56
4	17	37	118	25	18	19	324	730	222	38	18	36
5	16	34	65	24	18	20	279	492	160	39	22	29
6	12	66	51	23	18	20	270	367	126	34	17	22
7	10	66	51	21	19	21	263	296	106	30	15	15
8	12	56	45	23	19	20	256	238	106	31	13	18
9	17	53	37	20	19	20	375	202	113	28	16	23
10	15	44	45	20	17	21	467	173	106	25	8.1	18
11	24	41	45	*18	19	20	536	152	94	26	8.5	25
12	22	39	33	19	20	19	1,200	145	91	29	16	23
13	17	40	37	16	20	20	753	124	119	24	14	14
14	12	33	34	20	18	20	429	111	98	24	13	17
15	15	31	24	23	18	23	331	102	92	26	14	16
16	20	28	30	25	*18	23	317	100	83	24	8.1	23
17	15	33	31	23	16	22	500	365	68	23	8.1	14
18	14	22	34	24	18	21	890	266	61	23	9.0	14
19	14	28	30	22	19	23	1,050	185	58	21	15	16
20	14	26	34	18	19	24	755	282	48	18	17	8.8
21	12	22	71	20	19	24	567	1,240	48	41	13	16
22	22	23	51	23	20	22	421	608	47	35	16	32
23	30	23	42	21	20	22	342	379	41	29	8.1	27
24	21	20	38	21	18	22	327	306	39	26	13	22
25	19	13	37	21	19	23	379	253	42	21	12	66
26	19	16	35	20	19	*23	484	222	48	26	16	50
27	28	*24	33	17	19	22	562	187	61	27	13	34
28	24	20	31	18	19	24	655	872	49	22	12	28
29	31	20	30	21	18	26	730	889	48	23	10	25
30	30	15	30	19	-	37	832	406	44	20	11	29
31	52	-	31	19	-	490	-	306	-	36	7.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	642	52	10	20.7	0.272	0.31
November	1,151	158	13	38.4	.505	.56
December	1,274	118	19	41.1	.540	.62
Calendar year 1939	44,594.9	2,000	5.1	122	1.60	21.80
January	667	30	16	21.5	.283	.33
February	540	20	17	18.6	.244	.26
March	1,146	490	16	37.0	.486	.56
April	16,525	1,200	256	518	6.81	7.59
May	13,968	2,040	100	451	5.93	6.83
June	2,909	279	39	97.0	1.27	1.42
July	900	47	18	29.0	.381	.44
August	419.2	25	7.3	13.5	.177	.20
September	809.8	82	8.8	27.0	.355	.40
Water year 1939-40	39,951.0	2,040	7.3	109	1.43	19.52

Peak discharge.- Apr. 12 (6:30 p.m.) 1,760 sec.-ft.; Apr. 19 (7 p.m.) 1,640 sec.-ft.; May 3 (7 a.m.) 3,600 sec.-ft.; May 21 (8:30 a.m.) 1,720 sec.-ft.; May 28 (7:30 p.m.) 2,740 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 8 to Feb. 2, Mar. 31.

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 1940.

Average discharge.- 12 years, 251 second-feet.

Extremes.- Maximum discharge during year, 6,850 second-feet May 3 (gage height, 9.35 feet), 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, 5.2 second-feet (regulated) Nov. 24.

1928-40: 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 and above 2,000 second-feet and those for period Apr. 7-24, all of which are good, and those for periods of ice effect, which are fair. Considerable diurnal regulation.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

3.0	7.2	3.3	39	3.6	100	4.2	375	5.5	1,530	8.0	4,800
3.1	15	3.4	55	3.8	165	4.5	590	6.0	2,130	9.0	6,250
3.2	26	3.5	75	4.0	255	5.0	1,010	7.0	3,430		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	227	597	50	72	45	44	1,160	2,910	487	165	83	50
2	81	249	49	69	43	42	960	3,170	388	171	61	272
3	53	163	193	65	41	43	850	4,970	316	113	46	137
4	44	124	339	62	41	44	810	2,130	372	119	40	90
5	35	112	175	59	41	45	650	1,530	258	108	45	64
6	27	218	137	57	43	46	570	1,110	195	81	37	49
7	28	197	124	55	47	47	526	1,040	159	69	48	39
8	11	170	119	53	45	48	475	819	179	61	40	38
9	34	168	94	*52	45	49	598	638	242	54	35	34
10	34	126	123	50	42	49	710	533	223	66	28	47
11	281	146	115	46	45	48	676	474	179	55	20	85
12	109	137	70	48	47	47	1,500	427	165	67	36	51
13	65	111	90	45	47	46	1,260	372	284	61	29	42
14	56	89	95	50	47	46	686	348	212	49	49	38
15	67	87	60	57	46	51	638	352	234	46	48	38
16	53	82	85	60	45	50	967	360	206	39	34	32
17	50	95	90	56	*43	51	1,530	1,400	145	64	22	31
18	42	76	95	55	42	49	1,770	758	114	51	19	30
19	36	80	83	53	44	48	1,530	503	122	40	29	30
20	36	62	87	49	46	52	1,170	492	112	44	32	27
21	37	52	239	46	48	53	992	2,030	103	197	38	24
22	133	60	149	50	48	49	726	1,100	92	128	28	59
23	98	59	108	48	[illegible]	50	566	699	80	81	26	41
24	70	45	98	48	49	51	534	556	73	57	24	36
25	60	39	93	47	49	50	646	454	79	90	27	266
26	62	42	87	45	47	51	822	394	93	217	23	186
27	91	53	83	41	45	49	947	336	210	109	26	105
28	172	52	78	45	46	*50	1,130	1,600	132	67	24	74
29	192	49	75	47	46	63	1,460	1,710	114	53	22	63
30	107	48	76	47	-	85	2,070	767	134	107	19	53
31	229	-	77	46	-	950	-	543	-	196	20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,610	281	11	84.2	0.606	0.70
November	3,588	597	39	120	.863	.96
December	3,436	339	49	111	.799	.92
Calendar year 1939	85,495	2,840	11	234	1.68	22.87
January	1,625	72	41	52.4	.377	.43
February	1,311	49	41	45.2	.325	.35
March	2,446	950	42	78.9	.566	.65
April	28,931	2,070	475	964	6.94	7.74
May	34,525	4,970	336	1,114	8.01	9.24
June	5,702	487	73	190	1.37	1.53
July	2,825	217	39	91.1	.655	.76
August	1,056	83	19	34.1	.245	.28
September	2,131	272	24	71.0	.511	.57
Water year 1939-40	90,188	4,970	11	246	1.77	24.13

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 10-18, Dec. 25 to Apr. 6. Discharge for period Apr. 1-24 computed from graph based on twice-daily gage readings.

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 1940.

Extremes.- Maximum elevation during year, 613.45 feet May 4; minimum observed, 509.1 feet Mar. 28.
1938-40: Maximum elevation, that of 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 only, 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 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	h549.5	557.46	559.23	h558.5	h543.3	533.48	534.16	601.74	593.30	591.79	591.69	567.73
2	h550.1	558.53	559.50	h558.1	h543.0	533.01	537.67	606.54	592.53	591.78	591.61	568.49
3	550.26	559.26	560.53	557.71	h543.3	532.56	540.48	613.27	591.91	591.59	591.49	568.96
4	550.02	559.80	561.58	557.28	h543.3	h532.2	542.89	613.44	591.87	591.49	591.37	569.25
5	549.72	560.12	562.09	556.83	h542.6	h531.8	544.85	613.10	591.71	591.28	591.04	569.46
6	h549.4	561.08	562.31	h556.4	h542.1	h531.4	546.52	612.17	591.56	591.16	590.64	569.53
7	549.24	561.84	562.13	h556.0	h541.8	h530.9	547.98	611.32	591.50	591.10	590.25	568.96
8	549.05	562.49	562.35	h555.6	h541.6	h530.5	549.53	610.09	591.61	591.02	589.79	568.12
9	548.77	563.05	562.42	554.99	h541.2	h530.1	551.72	608.59	591.87	590.85	589.36	566.80
10	548.87	563.51	562.22	554.49	h540.9	h529.5	554.37	606.96	591.99	590.60	588.91	565.87
11	551.15	564.12	562.01	553.97	h540.5	h528.7	557.34	605.21	592.04	590.35	588.36	565.05
12	551.95	564.62	561.65	553.53	h540.2	h527.7	562.88	603.40	592.08	590.15	587.67	564.53
13	552.48	564.88	561.41	553.05	h539.9	h526.7	565.79	601.48	592.12	589.99	586.96	564.71
14	552.67	564.62	561.11	552.62	h539.6	h525.9	567.39	599.56	591.94	589.89	586.17	564.47
15	552.44	563.99	560.74	552.20	h539.2	h525.2	568.64	597.62	591.71	589.56	585.23	563.36
16	552.13	h563.7	560.41	551.75	h538.9	h524.7	570.15	595.69	591.58	589.30	584.49	561.74
17	551.78	563.46	560.08	551.28	h538.5	h524.1	572.79	596.59	591.58	589.09	583.72	559.61
18	551.40	563.16	559.79	550.81	h538.1	h523.1	577.15	595.29	591.55	588.84	582.95	557.84
19	551.01	562.84	559.50	550.33	537.81	h522.1	580.58	593.34	591.55	588.56	582.00	556.61
20	550.63	562.44	559.48	549.78	537.50	h521.1	582.85	592.34	591.55	588.44	580.95	555.68
21	550.27	562.03	560.38	549.29	537.10	h519.9	584.77	594.78	591.51	588.95	580.10	555.37
22	550.59	561.64	560.92	548.79	536.73	h518.7	586.07	595.16	591.47	589.16	579.27	556.08
23	550.86	561.24	561.31	548.29	536.34	h517.3	587.07	593.22	591.38	589.38	578.44	556.39
24	550.82	560.81	561.38	547.74	535.96	h515.9	588.15	591.90	591.29	589.57	577.41	556.67
25	550.62	560.35	561.10	h547.2	535.57	h514.4	589.43	592.06	591.20	589.85	576.41	557.72
26	551.04	559.83	560.79	546.71	h535.1	h512.7	591.06	592.12	591.24	590.85	575.32	558.36
27	h552.1	559.41	560.44	546.16	h534.8	h510.7	592.94	592.06	591.94	591.18	573.91	558.75
28	h553.2	559.01	560.04	h545.6	534.33	h509.6	594.06	592.43	592.12	591.37	572.61	559.05
29	h553.6	558.77	559.62	h545.1	533.92	h511.4	595.21	593.74	592.01	591.50	571.35	559.06
30	h553.9	559.00	559.26	h544.5	-	h514.1	597.51	594.53	591.57	591.65	570.03	558.58
31	h555.3	-	558.95	h543.9	-	526.52	-	594.19	-	591.76	568.80	-

h Obtained from graph constructed from twice-daily observer's readings, time of valve operation, and records for station on Waterbury River below reservoir.

Elevation and contents, water year October 1939 to September 1940

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.....	547.7	422.8	-	-
Oct. 31.....	555.3	561.8	+139.0	+51.9
Nov. 30.....	559.00	638.1	+76.3	+29.4
Dec. 31.....	558.95	637.0	-1.1	-.41
Calendar year 1939.	-	-	-254.2	-8.06
Jan. 31.....	543.9	360.6	-276.2	-103
Feb. 29.....	533.92	225.0	-135.8	-54.2
Mar. 31.....	526.52	147.3	-77.7	-29.0
Apr. 30.....	597.51	1,806.8	+1,659.5	+640
May 31.....	594.19	1,668.1	-138.7	-51.8
June 30.....	591.57	1,565.9	-102.2	-39.4
July 31.....	591.76	1,573.3	+7.4	+2.76
Aug. 31.....	568.80	862.8	-710.5	-265
Sept.30.....	558.58	629.4	-233.4	-90.0
Water year 1939-40.	-	-	+206.6	+6.53

*Elevation at midnight.

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 1940.

Extremes.- Maximum discharge during year, 1,500 second-feet (regulated) May 3 (gage height, 9.50 feet); minimum daily, 0.9 second-foot Sept. 28.
1935-40: Maximum discharge, 6,520 second-feet Mar. 18, 1936 (gage height, 19.38 feet); minimum daily, 0.6 second-foot July 10, 16, 17, 1938, Sept. 16, 1939.

Remarks.- Records excellent except those below 50 second-feet, which are good. Flow complete regulated by Waterbury Reservoir (see p. 201).

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 3						May 4 to Sept. 30					
4.7	0.6	5.4	21	6.9	240	4.76	0.9	5.4	19	7.1	293
4.8	1.3	5.6	34	7.2	330	4.8	1.2	5.6	31	7.5	435
4.9	2.7	5.8	52	7.6	480	4.9	2.4	5.8	48	8.0	665
5.0	4.7	6.0	74	8.1	720	5.0	4.2	6.0	69	8.5	935
5.1	7.5	6.3	116			5.1	6.6	6.2	96	9.0	1,230
5.2	11	6.6	172			5.2	9.8	6.5	145	9.5	1,500
						5.3	14	6.8	210		

Discharge, in second-feet, water year October 1939 to Septsmber 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	4.7	1.2	a161	152	101	12	298	660	210	98	399
2	1.7	3.3	1.2	a161	106	b101	8.9	304	660	210	98	146
3	55	2.4	20	a160	f1.7	101	9.6	546	531	210	96	2.1
4	107	2.3	3.3	a160	43	100	8.9	1,450	266	210	96	1.5
5	107	67	2.3	a160	148	101	8.9	1,450	238	210	175	1.3
6	107	57	53	a159	133	100	7.5	1,450	196	141	210	17
7	107	2.9	158	a159	104	98	7.8	1,450	125	99	208	192
8	107	2.6	69	a159	104	98	7.8	1,400	100	99	208	264
9	106	2.4	74	*158	104	96	12	1,400	102	129	208	384
10	106	2.3	158	156	102	110	13	1,400	102	157	208	306
11	38	2.4	158	156	102	141	16	1,400	100	157	238	275
12	1.9	2.3	158	156	102	141	30	1,400	111	135	309	176
13	1.6	42	156	156	104	b141	16	1,400	172	96	309	1.4
14	65	158	156	156	104	141	10	1,400	263	96	346	93
15	139	250	156	156	104	130	8.9	1,400	263	171	374	312
16	139	162	156	154	104	97	9.2	1,400	217	208	303	435
17	139	162	156	154	104	110	19	1,450	100	172	303	538
18	139	162	156	154	104	b139	29	1,450	99	153	303	451
19	139	162	158	152	*102	139	26	1,450	99	153	378	309
20	139	160	131	152	102	139	21	1,060	99	138	415	238
21	139	160	4.5	152	102	139	20	117	99	3.4	332	203
22	137	160	3.5	152	102	b137	14	456	99	55	303	2.1
23	133	160	2.7	152	102	b135	12	1,350	96	2.5	322	1.1
24	131	158	72	152	101	b133	13	982	98	1.7	360	1.0
25	131	160	162	152	102	b133	16	241	99	1.4	360	2.1
26	94	156	162	150	b101	133	18	241	99	3.2	370	1.2
27	2.1	156	162	150	b101	133	22	241	100	2.1	459	1.0
28	2.0	156	162	150	101	b91	472	332	100	1.7	423	.9
29	32	108	a162	150	101	2.1	720	237	240	35	403	47
30	93	1.7	a162	150	-	2.6	583	6.6	356	100	403	159
31	81	-	a162	152	-	22	-	421	-	102	399	-

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	2,751.3	139	1.6	88.8	+51.9	141	1.27	1.46
November	2,785.3	250	1.7	92.8	+29.4	122	1.10	1.23
December	3,297.5	162	1.2	106	-.41	106	.955	1.10
Calendar year 1939	78,335.0	1,550	.6	215	-8.06	207	1.86	25.24
January	4,801	161	150	155	-103	51.7	.466	.54
February	2,942.7	152	1.7	101	-54.2	47.3	.426	.46
March	3,386.7	141	2.1	109	-29.0	80.2	.723	.83
April	2,171.5	720	7.5	72.4	+640	713	6.42	7.16
May	29,582.6	1,450	6.6	954	-51.8	902	8.13	9.37
June	5,891	660	98	196	-39.4	157	1.41	1.58
July	3,460.0	210	1.4	112	+2.76	114	1.03	1.19
August	9,017	459	96	291	-265	25.6	.231	.27
September	4,959.7	538	.9	165	-90.0	75.3	.678	.76
Water year 1939-40	75,046.3	1,450	.9	205	+6.53	212	1.91	25.95

* Winter discharge measurement made on this day.
† Change in contents in Waterbury Reservoir.
a No gage-height record; discharge computed on basis of records for Waterbury Reservoir.
b Stage-discharge relation affected by ice.
f Computed from partly estimated gage-height record.
Note.- Discharge for periods Oct. 1-30, Nov. 23-27, Jan. 18-25, computed from stage graph constructed on basis of observer's twice-daily readings and records for 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 mouth of Gihon River.

Drainage area.- 310 square miles (revised).

Records available.- July 1910 to December 1913, September 1928 to September 1940.

Average discharge.- 12 years (1928-40), 519 second-feet.

Extremes.- Maximum discharge during year, 11,400 second-feet May 3 (gage height, 15.28 feet), from rating curve extended above 4,500 second-feet on basis of computations of flow by critical-depth method at control and over dam; minimum, 18 second-feet Aug. 12, 18, 19; minimum daily, 20 second-feet Aug. 18.

1910-13, 1928-40: Maximum discharge, 13,000 second-feet Mar. 18, 1936 (gage height, 16.48 feet), by computation of flow over dam; minimum, 11 second-feet Sept. 2, 1935; minimum daily, that of 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 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 3						May 4 to Sept. 30			
1.6	45	2.2	220	6.0	2,020	1.49	20	2.0	178
1.7	65	2.6	382	7.0	2,600	1.5	22	2.5	354
1.8	89	3.0	555	9.0	4,050	1.6	42	3.0	555
1.9	116	4.0	1,020	11.0	5,980	1.7	73		
2.0	147	5.0	1,520	13.0	8,370	Note.- Same as preceding table above 3.0 feet.			

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	485	1,720	130	190	170	130	2,240	4,300	544	370	186	22
2	402	921	158	210	160	110	1,870	4,840	531	462	170	134
3	268	541	188	200	130	50	1,670	9,930	534	360	141	248
4	218	359	616	190	50	110	1,520	6,510	481	230	92	196
5	175	292	335	170	110	130	1,100	2,740	342	361	166	139
6	157	606	264	160	135	180	857	1,920	361	223	168	158
7	179	601	247	115	135	150	920	1,570	270	149	130	132
8	130	459	274	*160	120	130	1,070	1,270	448	254	148	55
9	188	392	187	180	115	90	780	1,070	196	192	117	142
10	234	369	180	160	80	55	1,420	945	92	147	108	163
11	485	288	250	150	95	140	1,420	556	256	124	32	124
12	395	329	270	140	165	180	2,740	623	267	109	110	150
13	302	342	250	100	145	160	2,600	676	443	99	161	137
14	205	237	230	60	155	150	1,570	260	565	92	123	117
15	160	250	220	140	145	160	1,220	407	384	178	100	49
16	250	217	210	180	135	140	1,120	429	338	177	83	142
17	210	242	180	180	125	70	1,470	2,100	338	160	39	160
18	172	179	210	170	65	150	3,070	2,020	240	163	20	155
19	157	162	220	160	115	160	3,500	1,170	230	177	100	117
20	164	237	240	160	120	190	2,800	710	204	161	128	141
21	130	169	500	60	*130	180	2,240	2,480	198	41	111	135
22	245	169	350	120	130	170	1,820	1,670	142	217	101	211
23	378	130	280	160	115	140	1,320	1,020	67	228	103	328
24	280	152	230	140	115	70	1,220	797	205	252	110	246
25	254	153	210	130	50	190	1,720	636	222	198	38	360
26	265	111	230	140	115	210	2,240	531	148	292	78	589
27	386	157	210	160	115	210	2,480	479	257	393	103	344
28	386	143	210	70	110	200	2,930	537	247	228	124	200
29	537	146	200	160	100	*200	3,140	2,590	155	259	86	197
30	425	88	190	155	-	190	3,580	995	192	211	79	212
31	451	-	140	170	-	500	-	670	-	223	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,653	537	130	279	0.900	1.04
November	10,141	1,720	88	338	1.09	1.22
December	7,609	616	130	245	.790	.91
Calendar year 1939	190,743	6,890	42	523	†1.89	†22.88
January	4,640	210	80	150	.484	.56
February	3,450	170	50	119	.384	.41
March	4,875	500	50	157	.506	.58
April	57,647	3,580	780	1,922	6.20	6.92
May	56,451	9,930	260	1,821	5.87	6.77
June	8,555	565	67	295	.952	1.06
July	6,710	462	41	216	.697	.80
August	3,283	186	20	106	.342	.39
September	5,503	589	22	183	.590	.66
Water year 1939-40	177,817	9,930	20	486	1.57	21.32

Peak discharge.- May 3 (2 p.m.) 11,400 sec.-ft.
* Winter discharge measurement made on this day.
† Computed on basis of revised drainage area.
Note.- Stage-discharge relation affected by ice Dec. 10 to Apr. 5, Apr. 7, 9-12.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

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 (revised).
Records available.- October 1937 to September 1940. August 1929 to November 1937, at site near Milton, 3½ miles downstream, at which site drainage area is 698 square miles (revised).
Average discharge.- 11 years, 1,225 second-feet.
Extremes.- Maximum discharge during year, 22,300 second-feet May 3 (gage height, 12.25 feet), from rating curve extended above 8,400 second-feet on basis of computations of flow over dams at gage height 11.76 feet; minimum, 146 second-feet (regulated) Aug. 18; minimum daily, 156 second-feet Aug 18.
1929-40: 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 July 30, 1933.
Remarks.- Records good except those for period of ice effect, which are fair. Flow regulated at low stages by power plants above station.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30					
2.2	161	3.6	770	2.3	154	3.6	667	8.0	7,150
2.4	211	4.0	1,070	2.4	176	4.0	955	9.0	9,700
2.6	270	4.5	1,520	2.6	229	4.5	1,420	10.0	12,900
2.8	339	5.0	2,050	2.8	294	5.0	1,970	11.2	17,700
3.0	421	6.0	3,350	3.0	370	6.0	3,350		
3.2	520			3.2	457	7.0	5,050		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	784	3,350	370	530	420	310	5,600	8,110	1,040	1,090	504	165
2	1,290	2,770	380	470	410	340	4,800	10,000	1,020	1,630	386	306
3	860	1,650	400	500	380	270	4,100	16,100	1,080	1,060	343	663
4	702	1,220	1,350	520	250	220	3,600	17,700	1,010	793	230	506
5	573	992	1,100	530	300	180	3,000	8,320	860	800	231	399
6	471	1,970	720	520	170	380	2,300	5,250	373	711	282	301
7	522	1,990	770	450	350	350	2,200	3,990	610	530	291	238
8	560	1,460	710	480	360	420	2,100	3,350	521	462	293	255
9	512	1,260	730	470	330	350	3,300	2,690	759	464	273	215
10	508	1,090	690	490	280	260	3,400	2,280	640	421	258	190
11	1,330	1,050	580	480	240	310	3,300	2,090	436	394	188	266
12	1,380	1,030	660	450	260	190	5,850	1,630	432	327	209	278
13	994	915	610	430	400	270	6,270	1,680	1,290	299	207	262
14	816	819	560	320	390	340	4,070	1,370	1,700	198	235	244
15	741	725	560	420	390	380	2,980	1,140	1,090	268	241	240
16	640	680	640	370	350	410	3,430	1,320	864	337	191	202
17	646	620	520	480	310	430	3,830	3,400	736	526	165	173
18	570	580	560	480	290	360	6,270	6,050	571	463	156	223
19	503	520	620	460	350	230	8,110	3,350	505	360	158	234
20	462	540	580	420	310	370	6,490	2,350	701	354	252	220
21	496	500	1,100	340	350	480	5,250	2,960	586	557	234	213
22	539	500	1,150	430	340	460	4,330	4,330	530	712	220	760
23	888	470	850	340	360	420	3,350	2,550	374	458	209	782
24	844	450	720	410	330	350	2,760	1,850	426	472	194	593
25	702	430	620	400	230	350	3,120	1,520	446	436	196	758
26	622	420	560	300	340	300	4,150	1,270	470	483	235	1,320
27	1,010	430	600	350	220	450	4,690	1,090	1,180	729	191	898
28	1,030	410	580	290	*370	500	5,450	972	1,010	548	204	611
29	1,200	380	560	360	340	480	6,050	2,320	730	483	204	440
30	1,010	360	550	300	-	700	6,710	2,280	648	422	181	400
31	965	-	540	340	-	1,500	-	1,370	-	510	167	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	24,172	1,380	462	780	1.14	1.31
November	29,588	3,350	360	986	1.44	1.60
December	20,960	1,350	370	676	.985	1.14
Calendar year 1939	463,391	13,700	229	1,270	†1.85	†25.12
January	13,130	530	290	424	.618	.71
February	9,420	420	170	325	.474	.51
March	12,360	1,500	180	399	.582	.67
April	130,860	8,110	2,100	4,362	6.36	7.09
May	124,682	17,700	972	4,022	5.86	6.76
June	22,640	1,700	373	755	1.10	1.23
July	17,317	1,630	198	559	.815	.94
August	7,328	504	156	236	.344	.40
September	12,355	1,320	165	412	.601	.67
Water year 1939-40	424,812	17,700	156	1,161	1.69	23.03

* Winter discharge measurement made on this day.
† Based on revised drainage area.
Note.- Stage-discharge relation affected by ice Nov. 16 to Apr. 11.

Missisquoi River near North Troy, Vt.

Location.- Water-stage recorder, lat. 44°58'20", long. 72°23'15", just upstream from Big Falls, 1½ miles downstream from Jay Branch, and 2¾ miles upstream from North Troy, Troy County.

Drainage area.- 131 square miles.

Records available.- August 1931 to September 1940.

Extremes.- Maximum discharge during year, 5,500 second-feet May 3 (gage height, 12.87 feet), from rating curve extended above 2,100 second-feet on basis of computations of flow over dam at gage heights 7.72 feet and 11.40 feet; minimum daily, 20 second-feet August 16.
1931-40: Maximum discharge, that of May 3, 1940; minimum, 10 second-feet Aug. 22, 1934 (gage height, 0.81 foot).

Remarks.- Records good except those for periods of ice effect and of no gage-height record, which are fair. Some diurnal regulation from small power plant above station.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31						Apr. 1 to Sept. 30					
1.3	33	1.8	76	3.0	350	1.1	20	2.1	116	4.0	718
1.4	39	2.0	106	3.5	526	1.3	30	2.4	178	5.0	1,170
1.5	46	2.2	143	4.0	720	1.5	43	2.7	254	6.0	1,680
1.6	54	2.4	187	5.0	1,140	1.7	60	3.0	343	9.0	3,270
1.7	64	2.6	237			1.9	84	3.5	518	12.0	4,960

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	440	988	83	75	38	45	1,320	2,580	133	456	41	30
2	290	448	79	72	39	40	1,160	2,840	120	318	40	45
3	160	274	234	69	39	40	920	4,720	106	154	33	74
4	119	200	344	67	37	44	783	2,310	114	129	29	58
5	92	171	214	65	42	45	585	1,420	97	133	29	41
6	74	360	160	60	40	45	545	1,120	85	93	28	35
7	90	305	145	*56	46	46	474	1,050	76	70	41	32
8	80	250	130	60	42	48	428	783	57	71	36	38
9	75	424	120	59	43	49	595	635	146	50	31	22
10	100	253	130	52	41	50	890	537	125	50	25	23
11	470	366	110	54	45	49	880	461	92	52	28	25
12	250	268	100	53	49	46	1,600	537	79	45	22	30
13	197	182	103	51	46	45	1,270	417	394	49	36	35
14	143	139	97	50	45	48	676	360	288	44	32	30
15	141	135	92	53	*49	53	500	340	135	40	31	25
16	120	135	90	56	48	52	537	346	113	90	20	21
17	98	154	96	54	47	53	872	1,540	87	262	23	21
18	92	126	95	53	45	55	1,620	1,280	78	92	24	22
19	90	119	93	51	47	53	1,840	761	94	69	25	22
20	113	88	105	50	50	54	1,150	518	115	56	21	25
21	110	82	200	49	50	55	1,080	676	109	50	30	70
22	391	80	150	53	48	54	761	518	83	67	27	110
23	299	89	125	50	46	52	518	366	72	52	26	85
24	222	73	110	48	43	46	556	297	75	48	27	200
25	154	61	96	45	43	50	894	235	59	42	36	343
26	176	57	90	45	45	51	1,200	195	64	47	26	227
27	317	68	85	45	43	*62	1,370	165	112	46	24	108
28	240	70	80	45	44	51	1,570	331	97	43	23	73
29	207	69	76	45	44	52	1,730	321	85	40	21	58
30	156	69	75	43	-	75	2,050	202	134	41	22	52
31	258	-	78	42	-	700	-	150	-	49	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,754	470	74	186	1.42	1.63
November	6,103	988	57	203	1.55	1.73
December	3,784	344	75	122	.931	1.07
Calendar year 1939	96,012	3,020	25	260	1.98	26.97
January	1,670	75	42	53.9	.411	.47
February	1,284	50	37	44.3	.338	.36
March	2,198	700	40	70.9	.541	.62
April	30,374	2,050	428	1,012	7.73	8.62
May	28,031	4,720	150	904	6.90	7.96
June	3,424	394	57	114	.870	.97
July	2,850	458	40	91.9	.702	.81
August	880	41	20	28.4	.217	.25
September	1,979	343	21	66.0	.504	.56
Water year 1939-40	88,331	4,720	20	241	1.84	25.05

* Winter discharge measurement made on this day.
Note.- Discharge for periods of no gage-height record, Oct. 1-3, 7-12, Sept. 1-24, computed on basis of range in stage as indicated by recorder chart, weather records, and records for station near Richford. Stage-discharge relation affected by ice Dec. 6, Jan. 7 to Apr. 3, Apr. 5, 6, 9-12.

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 3¾ 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 1940.
Average discharge.- 20 years (1911-19, 1928-40), 933 second-feet.
Extremes.- Maximum discharge during year, 17,200 second-feet May 4 (gage height, 15.15 feet), from rating curve extended above 7,300 second-feet on basis of computations of flow over dam and slope-area determinations at gage heights 12.90 feet and 14.70 feet; minimum, 64 second-feet Aug. 26 (gage height, 2.41 feet).
1909-10, 1911-23, 1928-40: Maximum discharge, that of May 4, 1940; 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 above 7,300 second-feet on basis of computations of flow over dam and slope-area determinations at gage heights 12.90 feet and 14.70 feet.
Remarks.- Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low stages.

Rating tables, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30							
2.7	144	4.0	670	2.4	62	3.4	325	5.0	1,360	10.0	7,150
3.0	234	4.5	990	2.6	96	3.7	458	6.0	2,240	12.0	10,500
3.3	343	5.0	1,370	2.8	138	4.0	624	7.0	3,260	14.3	15,200
3.6	475	6.1	2,340	3.1	220	4.5	970	8.0	4,420		

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	2,340	265	330	160	170	5,400	7,790	379	589	118	102
2	1,100	2,060	282	310	155	160	4,700	9,260	346	1,010	108	140
3	620	1,210	493	300	155	160	4,100	15,200	317	606	102	205
4	430	885	906	290	155	175	3,500	14,300	306	397	104	199
5	356	760	858	280	150	195	3,000	7,470	295	362	100	138
6	331	1,410	620	*275	150	190	2,700	4,660	249	321	104	112
7	372	1,370	510	270	155	195	2,500	3,370	220	256	146	100
8	351	1,020	460	250	160	200	2,300	2,640	211	211	120	120
9	316	1,170	430	235	160	205	2,700	1,970	314	190	100	75
10	356	1,060	490	220	160	205	4,000	1,660	337	163	89	76
11	1,610	1,060	480	215	170	200	4,420	1,400	273	156	83	82
12	1,130	1,100	380	205	190	195	7,000	1,320	242	150	80	89
13	742	814	400	205	185	190	5,440	1,200	958	138	94	104
14	630	540	370	215	185	205	4,060	1,010	955	123	110	96
15	605	500	350	225	180	235	3,040	955	516	120	96	92
16	506	490	330	245	190	245	3,040	932	358	352	89	80
17	439	520	360	235	185	235	3,820	2,590	287	510	78	82
18	385	450	370	225	180	225	6,700	4,420	249	366	75	75
19	360	410	350	220	180	230	8,750	3,480	350	223	76	73
20	385	350	370	215	185	240	6,850	2,150	366	187	78	76
21	421	310	600	205	190	235	5,700	2,240	325	171	80	227
22	920	300	590	205	185	230	4,660	1,880	298	233	76	306
23	1,060	320	490	200	185	225	3,260	1,320	252	202	78	226
24	826	270	440	195	185	220	2,840	1,080	220	158	92	445
25	665	240	400	185	180	210	3,370	873	220	143	108	636
26	590	230	360	190	180	220	4,300	706	214	176	104	429
27	748	250	360	190	*180	220	4,660	649	273	176	68	256
28	796	260	350	175	175	220	5,190	565	302	146	72	190
29	736	250	330	170	170	220	5,570	706	291	125	72	150
30	595	245	320	170	-	320	6,400	565	370	129	70	143
31	668	-	310	165	-	1,300	-	429	-	127	73	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20,449	1,610	316	660	1.38	1.59
November	22,194	2,340	230	740	1.54	1.72
December	13,624	906	265	439	.916	1.06
Calendar year 1939	348,485	13,700	101	955	1.99	27.04
January	7,005	330	165	226	.472	.54
February	5,020	190	150	173	.361	.39
March	7,675	1,300	160	248	.518	.60
April	133,960	8,750	2,300	4,465	9.32	10.40
May	98,790	15,200	429	3,187	6.65	7.67
June	10,293	958	211	343	.716	.80
July	8,216	1,010	120	265	.553	.64
August	2,843	146	68	91.7	.191	.22
September	5,124	656	73	171	.357	.40
Water year 1939-40	335,193	15,200	68	916	1.91	26.03

Peak discharge.- Apr. 12 (1 p.m.) 8,110 sec.-ft.; Apr. 19 (2:30 a.m.) 10,100 sec.-ft.; May 4 (1 a.m.) 17,200 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 14-30, Dec. 6 to Apr. 10.

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 (general adjustment of 1929).

Records available.- May 1931 to September 1940.

Extremes.- Maximum gage height observed during year, 12.04 feet May 6; minimum observed, 7.41 feet Mar. 30.
1931-40: 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 for which gage heights are shown. Gage heights for period Jan. 9-26 are to top of ice.

Gage height, in feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	8.46	8.91	-	8.68	8.16	7.68	10.45	9.97	9.53	8.84	-
2	-	8.58	8.88	-	8.63	8.11	7.85	10.59	-	9.56	8.75	8.03
3	-	8.65	-	-	8.68	-	8.04	11.30	9.98	9.52	8.71	8.04
4	-	8.71	9.03	-	-	8.09	8.17	12.01	10.00	9.52	-	8.03
5	8.31	-	9.04	-	8.65	8.12	8.25	-	10.00	9.48	8.69	8.02
6	8.27	8.83	9.00	-	8.58	8.17	8.30	12.03	9.94	9.44	8.66	8.00
7	8.29	8.92	9.03	9.11	8.60	8.14	-	11.89	9.92	-	8.72	7.96
8	-	8.95	9.04	9.07	-	8.09	8.40	11.71	9.86	9.44	8.66	-
9	8.29	8.99	9.03	9.11	-	8.15	8.45	11.52	-	9.42	8.59	7.90
10	8.20	9.03	-	9.11	-	-	8.61	11.29	9.86	9.36	8.58	7.90
11	8.31	9.06	9.11	9.11	-	8.12	8.70	11.06	9.84	9.36	-	7.90
12	8.28	-	9.07	9.11	-	8.06	8.89	-	9.84	9.26	8.56	7.89
13	8.27	9.17	9.03	9.11	-	8.02	9.22	10.71	9.86	9.24	8.54	7.87
14	8.24	9.13	9.02	-	8.51	7.96	-	10.53	9.86	-	8.55	7.86
15	-	9.18	9.02	9.10	8.44	7.96	9.40	10.36	9.79	9.19	8.47	-
16	8.18	9.15	8.98	9.10	8.46	7.91	9.40	10.26	-	9.24	8.42	7.88
17	8.17	9.11	-	9.10	8.43	-	9.41	10.25	9.79	9.23	8.38	7.88
18	8.12	9.13	8.99	9.10	-	7.86	9.57	10.38	9.76	9.21	-	7.84
19	8.03	-	9.00	9.10	8.39	7.87	9.88	-	9.76	9.17	8.32	7.82
20	8.08	9.16	9.00	9.10	8.38	7.81	10.08	10.44	9.73	9.14	8.35	7.80
21	8.00	9.14	9.05	-	8.39	7.73	-	10.42	9.73	-	8.31	7.78
22	-	9.13	9.04	9.14	8.30	7.71	10.31	10.39	9.64	9.12	8.24	-
23	8.15	9.11	9.05	9.16	8.33	7.69	10.25	10.36	-	9.13	8.23	7.90
24	8.15	9.09	-	9.01	8.27	-	10.18	10.31	9.61	9.07	8.23	7.88
25	8.14	9.06	9.11	8.86	-	7.67	10.16	10.26	9.53	9.02	-	8.03
26	8.19	-	-	8.85	8.28	7.65	10.18	-	9.57	8.99	8.17	8.02
27	8.15	9.00	-	8.83	8.24	7.59	10.21	10.19	9.52	8.99	8.15	7.98
28	8.25	9.01	-	-	8.22	7.54	-	10.11	9.48	-	8.11	7.99
29	-	8.97	-	8.77	8.19	7.49	10.29	10.04	9.44	8.94	8.04	-
30	8.22	8.92	-	8.73	-	7.43	10.37	10.00	-	8.93	7.97	8.01
31	8.30	-	-	8.71	-	-	-	9.96	-	8.89	7.97	-

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 (general adjustment of 1929).

Drainage area.- 142 square miles.

Records available.- September 1938 to September 1940. May 1909 to September 1924 and November 1928 to May 1936 at site 0.65 mile upstream.

Average discharge.- 18 years (1909-19, 1929-35, 1938-40), 245 second-feet.

Extremes.- Maximum discharge during year, 2,740 second-feet May 3 (gage height, 8.65 feet from floodmarks); minimum daily, 10 second-feet Sept. 22.
1909-24, 1928-36, 1938-40: 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.

Remarks.- Records excellent except those below 80 and above 300 second-feet and those for periods of ice effect, which are good. Flow regulated by power plant and reservoirs above station.

Rating table, water year 1939-40, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.3	11	2.7	34	3.4	139	5.0	666
2.4	15	2.8	44	3.6	183	6.0	1,180
2.5	20	3.0	69	4.0	291	7.0	1,780
2.6	26	3.2	101	4.5	460	8.5	2,680

Discharge, in second-feet, water year October 1939 to September 1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	337	119	137	95	88	132	h1,240	289	106	104	30
2	122	371	104	144	78	85	136	h1,600	321	187	101	39
3	127	384	75	143	b72	35	129	h2,380	294	186	136	52
4	208	398	145	126	b66	105	182	2,680	316	190	82	39
5	219	396	182	b130	112	151	312	2,500	244	195	89	42
6	210	420	168	124	97	158	349	2,080	248	184	116	105
7	200	383	167	b120	95	139	330	1,660	304	156	135	134
8	167	385	185	b140	87	138	326	1,360	308	162	113	131
9	146	361	176	b62	92	101	364	1,180	76	151	133	171
10	145	346	154	b62	98	51	398	1,020	241	140	150	193
11	138	345	157	b80	57	111	420	910	208	121	146	162
12	161	248	134	b115	92	100	558	835	173	104	132	142
13	150	260	140	131	102	94	600	760	166	120	71	111
14	159	256	142	87	b105	98	579	712	211	46	63	63
15	151	233	126	119	#95	91	558	666	229	126	61	88
16	148	253	123	117	93	77	558	622	219	108	55	136
17	144	245	106	b120	93	34	579	689	225	129	58	189
18	136	253	152	b127	44	61	689	760	223	128	14	141
19	142	222	130	b123	88	82	760	885	213	138	129	142
20	129	205	146	b125	85	63	810	935	203	136	89	145
21	135	170	138	93	76	55	810	935	176	138	94	93
22	127	152	143	135	b85	72	785	885	170	140	127	10
23	149	130	142	b115	111	72	712	860	156	132	129	52
24	132	132	110	b135	86	123	666	785	161	144	116	107
25	134	129	124	b147	44	117	666	689	166	143	83	117
26	159	125	148	144	144	68	689	600	165	133	143	102
27	172	136	145	133	105	84	636	558	168	132	137	102
28	166	126	146	104	88	91	785	526	167	68	80	101
29	173	126	152	b147	91	79	885	400	167	104	66	65
30	191	91	157	b135	-	51	h988	189	161	106	54	120
31	237	-	115	96	-	114	-	343	-	133	55	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,908	237	122	158	1.11	1.29
November	7,617	420	91	254	1.79	1.99
December	4,351	185	75	140	.986	1.14
Calendar year 1939	97,056	2,060	67	266	1.87	25.43
January	3,716	147	82	120	.845	.97
February	2,576	144	44	88.8	.625	.67
March	2,768	158	34	89.3	.629	.72
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	4,266	195	46	138	.972	1.12
August	3,061	150	14	98.7	.695	.80
September	3,124	193	10	104	.732	.82
Water year 1939-40	91,390	2,680	10	250	1.76	23.92

\# Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
h Discharge computed on basis of once-daily staff-gage readings and floodmarks.

In addition to the records of stream flow obtained at gaging stations in the St. Lawrence River Basin and reported in the preceding pages, measurements of flow were made at other points, as shown in the following table.

Miscellaneous discharge measurements in St. Lawrence River Basin during water year October 1939 to September 1940†

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
1938				
Mar. 31	Clark ditch.....	Grays Creek.....	2 miles west of Seney, Mich.....	205
1939				
Apr. 13	....do.....	....do.....	....do.....	6.9
18	....do.....	....do.....	....do.....	31.0
22	....do.....	....do.....	....do.....	107
May 31	....do.....	....do.....	....do.....	3.8
June 28	....do.....	....do.....	....do.....	1.9
July 31	....do.....	....do.....	....do.....	.13
1940				
Aug. 26	Grays Creek spillway.	Grays Creek.....	1 mile upstream from mouth of Grays Creek, Mich.	2.2
Sept.18	....do.....	....do.....	....do.....	19.6
18	....do.....	....do.....	....do.....	41.6
18	....do.....	....do.....	....do.....	79.4
1938				
Mar. 31	Ditch.....	Pine Creek.....	6 miles west of Seney, Mich.....	22.1
31	....do.....	Driggs River....	9.5 miles west of Seney, Mich.....	58.1
1939				
Aug. 23	Diversion ditch from east bank of Driggs River.	Refuge pools....	SW¼ sec. 6, T. 45 N., R. 14 W., 2 miles southeast of Driggs River, near Seney, Mich.	28.4
1940				
July 22	....do.....	....do.....	....do.....	28.5
Aug. 26	....do.....	....do.....	....do.....	16.8
Sept.17	....do.....	....do.....	....do.....	14.5
1938				
Mar. 31	Ditch.....	Marsh Creek.....	14 miles west of Seney, Mich.....	74.3
1939				
Apr. 25	....do.....	....do.....	....do.....	62.3
1940				
June 24	Menomonee River.	Milwaukee River.	N. 70th St. Bridge in Wauwatosa, Wis.....	2,990
1939				
Dec. 20	Wolf Lake outlet.	Calumet River...	At lake outlet at Avenue "O", Chicago, Ill.	11.0
1940				
Apr. 1	....do.....	....do.....	....do.....	15.0
June 4	....do.....	....do.....	....do.....	11.0
Aug. 3	....do.....	....do.....	....do.....	0
1939				
Oct. 12	Boardman River..	Lake Michigan...	At Traverse City, Mich.....	238
Nov. 29	....do.....	....do.....	....do.....	234
1940				
Jan. 17	....do.....	....do.....	....do.....	219
Feb. 15	....do.....	....do.....	....do.....	205
Mar. 6	....do.....	....do.....	....do.....	220
1939				
Oct. 5	Thunder Bay River.	Lake Huron.....	Near Alpena, Mich.....	364
Nov. 15	....do.....	....do.....	....do.....	280
1940				
June 4	Clinton River...	Lake St. Clair..	At Rochester, Mich.....	79.9
4	Paint Creek.....	Clinton River...	....do.....	15.6
4	Stoney Creek....	....do.....	....do.....	22.1
Apr. 4	Miami & Erie Canal.	Maumee River....	Florida, Ohio.....	27.4
July 26	....do.....	....do.....	....do.....	21.4
Sept.24	....do.....	....do.....	....do.....	*17.5
1939				
Oct. 3	West channel of Genesee River.	Genesee River...	Diversion around power house of Rochester Gas & Electric Corporation, Driving Park Ave., Rochester, N. Y.	14.3
Dec. 13	Little Clear Pond outlet.	Upper Saranac Lake.	At Saranac Inn railroad station, N. Y.	5.33
1940				
Mar. 5	....do.....	....do.....	....do.....	4.87
Apr. 5	West Branch of Ausable River.	Ausable River...	At Ausable Forks, N. Y., just above mouth..	353

† Miscellaneous discharge measurements made in upper peninsula of Michigan during 1938 and 1939 are also included.
e Discharge obtained from rating curve.

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