

# Surface Water Supply of the United States 1952

## Part 1-A. North Atlantic Slope Basins, Maine to Connecticut

*Prepared under the direction of J. V. B. WELLS, Chief, Surface Water Branch*

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1231

*Prepared in cooperation with the States  
of Connecticut, Maine, Massachusetts,  
New Hampshire, Rhode Island, and  
Vermont, and with other agencies*



**UNITED STATES DEPARTMENT OF THE INTERIOR**

**Douglas McKay, *Secretary***

**GEOLOGICAL SURVEY**

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## PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

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SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1952. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 12,600 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1952, the Geological Survey and cooperating organizations were maintaining 6,700 gaging stations, including those in Alaska and Hawaii. Miscellaneous discharge measurements were made at many other points in the 1952 water year.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Connecticut: State Water Commission, E. J. McDonough, chairman, and Richard Martin, director, succeeded by W. S. Wise; city of Hartford, Department of Public Works, C. W. Cooke, director; city of New Britain, Board of Water Commissioners, J. J. Kiniry, chairman.

Maine: Maine Public Utilities Commission, F. E. Southard, chairman.

Massachusetts: State Department of Public Health, Vlado Getting, commissioner, and C. I. Sterling, Jr., chief sanitary engineer; State Department of Public Works, W. F. Callahan, commissioner; Metropolitan District Commission, E. F. Copell, commissioner, and H. J. Toole, director and chief engineer of Water Division.

New Hampshire: Water Resources Board, W. G. White, chairman.

Rhode Island: State Department of Public Works, Henry Ise<sup>1</sup>, chief of Division of Harbors and Rivers.

Vermont: Water Conservation Board, Philip Shutler, commissioner.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 36 gaging stations, of which 11 were in Massachusetts, 16 in New Hampshire, 1 in Rhode Island, and 8 in Vermont.

The following organizations aided in collecting records:

Connecticut: Metropolitan Water Bureau of Hartford, borough of Groton, cities of Bristol and Waterbury, Bridgeport Hydraulic Co., Collins Co., Connecticut Light & Power Co., Connecticut Power Co., Farmington River Power Co., Guilford-Chester Water Co., and Rockville Water & Aqueduct Co.

Maine: Bangor Hydro-Electric Co., St. Croix Paper Co., and Union Water Power Co.

Massachusetts: New England Power Association, Western Massachusetts Electric Co., and Worcester Electric Light Co.

New Hampshire: New England Power Association.

Vermont: New England Power Association.

Full cooperation exists between the Geological Survey of the United States Department of the Interior and the Water Resources Division, Department of Resources and Development, 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 herein designated as international gaging stations.

#### DIVISION OF WORK

The stream gaging was done by the Water Resources Division of the Geological Survey, Carl G. Paulsen, chief hydraulic engineer, under the direction of Joseph V. B. Wells, chief of the Surface Water Branch. The data for stations in the several States were collected and prepared for publication under the supervision of the district engineers at the offices listed below. The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, chief, Annual Reports Section.

<u>State</u>	<u>District office</u>	<u>Address</u>
Connecticut a/.....	Hartford.....	203 Federal Building.
Maine b/.....	Augusta.....	420 Statehouse.
Massachusetts c/.....	Boston.....	939 Post Office Building.
New Hampshire d/.....	Boston, Mass.....	Do.....
Rhode Island.....	Do.....	Do.....
Vermont.....	Do.....	Do.....

a/ Except for Connecticut River at Thompsonville.  
 b/ Including Androscoggin River near Errol and near Gorham, N. H., Diamond River near Wentworth Location, N. H., and Saco River near Conway, N. H.  
 c/ Including Connecticut River at Thompsonville, Conn.  
 d/ Except for Androscoggin River near Errol and near Gorham, Diamond River near Wentworth Location, and Saco River near Conway.

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

#### DEFINITION OF TERMS AND ABBREVIATIONS

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

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

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

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

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot

and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

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

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

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

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

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

#### DOWNSTREAM ORDER OF LISTING GAGING STATIONS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

#### EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data 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 fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These

methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

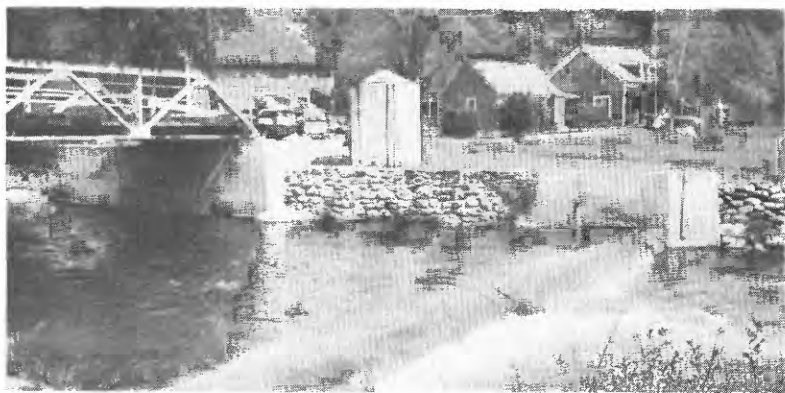
At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, 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, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed





A. OTTER BROOK NEAR KEENE, N. H.



B. PEQUABUCK RIVER AT FORESTVILLE, CONN.



C. MILL RIVER AT NORTHAMPTON, MASS.

FIGURE 1.—GAGING STATION STRUCTURES.

history of the types of gages, locations, and datums of previous gages for which discharge records are generally equivalent to those at the present site. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. 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, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the report number, "W" means water-supply paper. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff, in inches, are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff, in inches, resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as

an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the values for the maximum day and the minimum day for each month are underlined. If the value is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily values; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Values for cubic feet per second per square mile and runoff, in inches, are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the values of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

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

#### ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and runoff, in inches, are not published unless storage or diversion records are included to indicate 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. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

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 actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

#### PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:

A, North Atlantic slope basins, Maine to Connecticut.

B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:

A, South Atlantic slope basins, James River to Savannah River.

B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:

A, Ohio River basin except Cumberland and Tennessee River basins.

B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.

5. Hudson Bay and upper Mississippi River basins.

6. Missouri River basin, in two volumes:

A, Missouri River basin above Sioux City, Iowa.

B, Missouri River basin below Sioux City, Iowa.

7. Lower Mississippi River basin.

8. Western Gulf of Mexico basins.

9. Colorado River basin.

10. The Great Basin.

11. Pacific slope basins in California.

12. Pacific slope basins in Washington and upper Columbia River basin.

13. Snake River basin.

14. Pacific slope basins in Oregon and lower Columbia River basin.

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

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A

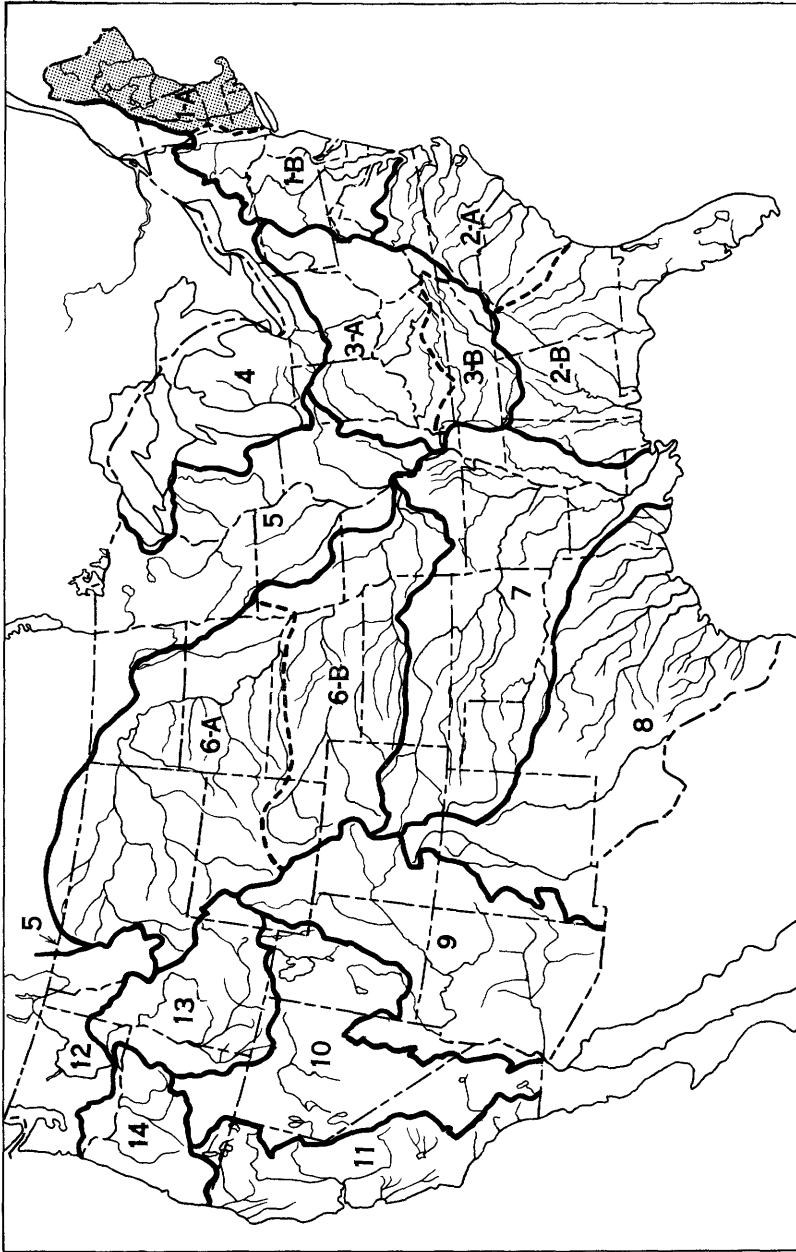


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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

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 offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901, 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 September 1890.
12th A, pt. 2	....do.....	1884 to June 30, 1891.
13th A, pt. 3	....do.....	1884-92.
14th A, pt. 2	Monthly discharge.....	1888-93.
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.	1895.
W 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	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.	1897.
W 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
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.....	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.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. Before 1951, records for the North Atlantic slope basins, Maine to Connecticut, were included with those of the other rivers in the North Atlantic slope basins.

Numbers of water-supply papers containing results of stream measurements in North Atlantic slope basins, Maine to Connecticut, 1899-1952

Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.
1899	35	1911	301	1923	561	1933	741	1943	971
1900	47	1912	321	1924	581	1934	756	1944	1001
1901	65, 75	1913	351	1925	601	1935	781	1945	1031
1902	82	1914	381	1926	621	1936	801	1946	1051
1903	97	1915	401	1927	641	1937	821	1947	1081
1904	124	1916	431	1928	661	1938	851	1948	1111
1905	165	1917	451	1929	681	1939	871	1949	1141
1906	201	1918	471	1930	696	1940	891	1950	1171
1907-8	241	1919-20	501	1931	711	1941	921	1951	1201
1909	261	1921	521	1932	726	1942	951	1952	1231
1910	281	1922	541						

The records at most of the stations discussed in these reports extend over many 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 are listed in the same order as the

streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

Each of the reports on the surface-water supply for the year 1939 (Water-Supply Paper 871 for the North Atlantic slope basins, Maine to Connecticut) contains, for the area included in that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record had been collected. These summaries were reprinted separately.

Reports also 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 may have been revised), as well as some records not contained in the annual series of water-supply papers. The following table lists reports of this type for the North Atlantic slope basins, Maine to Connecticut.

Reports containing compilations of records of discharge by States and drainage basins

Water-Supply Paper	Period	Report
198.....	1890-1906	Water resources of Kennebec River basin (Maine).
279.....	1904-9	Water resources of Penobscot River basin (Maine).
415.....	1848-1915	Surface waters of Massachusetts.
424.....	1875-1916	Surface waters of Vermont.
1105.....	1863-1945	Hydrology of Massachusetts, Part 1, summary of stream-flow and precipitation records.

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

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Connecticut...	1900-1927	Bull. 44, Water resources of Connecticut.....	State Geological and Natural History survey.
Do.....	1912-33	5th biennial report.....	State Water Commission.
Maine.....	1887-1920	1st annual report.....	Maine Water Power Commission.
New Hampshire..	1889-1922	Annual and statistical report, vol. 12.....	Public Service Commission.
Rhode Island..	1929-41	7th annual report.....	Department of Public Works.
Do.....	1929-50	Ground-water resources of Rhode Island.....	Rhode Island Development Council.

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: Connecticut, Maine, and Rhode Island.

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 special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following list gives the numbers and titles of these reports:

Water-Supply Paper

Title

162.....	Destructive floods in the United States in 1905.
636-C.....	The New England flood of November 1927.
771.....	Floods in the United States, magnitude and frequency.
798.....	The floods of March 1936, Part 1, New England rivers.
836-A.....	Stages and flood discharges of the Connecticut River at Hartford, Conn.
847.....	Maximum discharges at stream measurement stations through September 1938.
867.....	Hurricane floods of September 1938.
966.....	Minor floods of 1938 in North Atlantic States.
967-C.....	Flood of August 21, 1939, in town of Baldwin, Maine.
1137-I.....	Summary of Floods in the United States during 1950.

## RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below 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 1951 to September 1952 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey			
Stream	Location	Period	Collected by
Androscoggin River.....	Lewiston, Maine.....	1929-52	Central Maine Power Co.
Kennebec River.....	Bingham, Maine.....	1931-52	Do.
Penobscot River.....	Old Town, Maine.....	1915-52	T. W. Clark.
Race Brook.....	Orange, Conn.....	1911-52	New Haven Water Co.
Saco River.....	Hiram, Maine.....	1930-52	Central Maine Power Co.
Do.....	West Buxton, Maine.....	1940-52	Do.
Stillwater Branch	Stillwater, Maine.....	1915-52	T. W. Clark.
Penobscot River.			
Wepawang River.....	Orange, Conn.....	1911-52	New Haven Water Co.
West River.....	Guilford, Conn.....	1930-52	Do.

## HYDROLOGIC CONDITIONS

Streamflow during the 1952 water year was as a whole above normal for the North Atlantic slope basins, Maine to Connecticut. Runoff for the months of July, August, and September was below normal over most of the area with some record lows occurring in Maine during August. No noteworthy floods occurred during the year. For two key gaging stations in the area covered by this report, a comparison of monthly and yearly mean discharges during the 1952 water year with the median discharge for the 25-year period 1921-45 is shown in figure 3 on the following page.



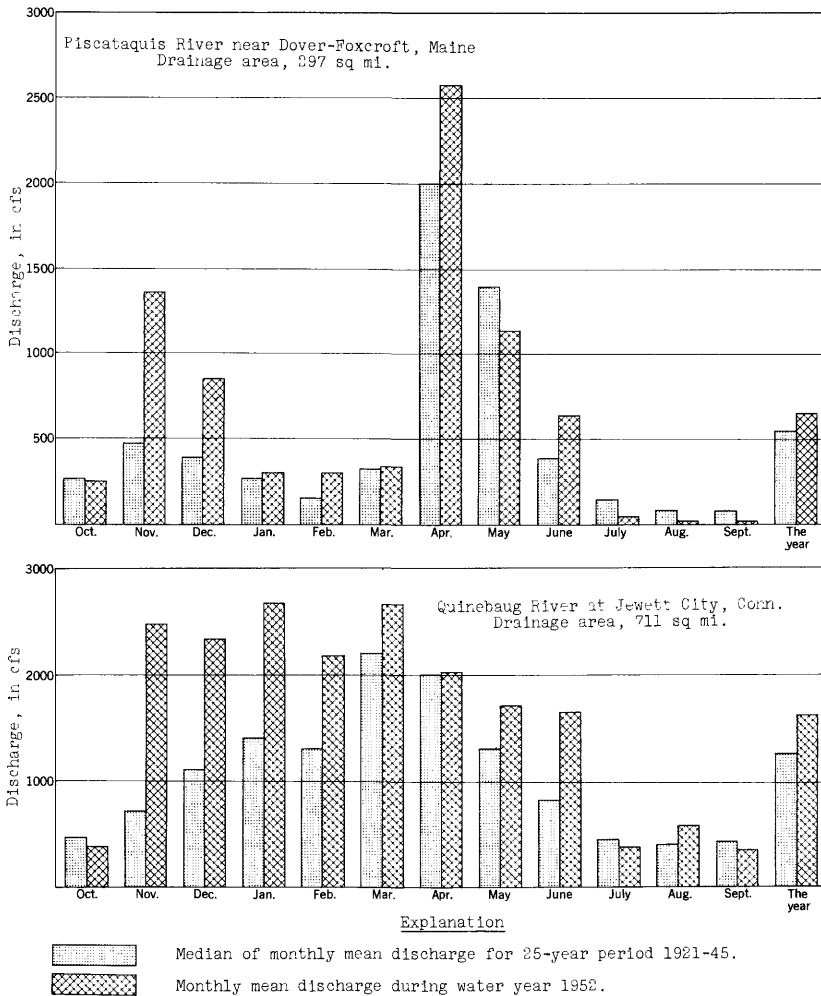


Figure 3.--Comparison of discharge at two key gaging stations during 1952 water year with median discharge for 25-year period.

## ST. JOHN RIVER BASIN

St. John River at Ninemile Bridge, Maine

Location.--Lat 46°42', long. 69°43', T. 12, R. 15, Aroostook County, on right bank 0.1 mile downstream from Ninemile Brook, 0.4 mile downstream from highway bridge at Ninemile, and 11 miles northeast of Clayton Lake post office.

Drainage area.--1,290 sq mi, approximately.

Records available.--November 1950 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,050 ft.

Extremes.--Maximum discharge during year, 19,200 cfs Apr. 27 (gage height, 8.10 ft); maximum gage height, 9.90 ft Apr. 17 (backwater from ice); minimum discharge, 98 cfs for several days in August and September (gage height, 0.45 ft).  
1950-52: Maximum discharge, that of Apr. 27, 1952; minimum, that of August and September 1952.

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

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.4	89	2.5	1,430
.8	172	3.0	2,180
1.2	318	4.0	4,230
1.6	551	5.0	7,050
2.0	882	8.0	18,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	524	1,490	975	635	530	325	270	15,200	2,210	472	103	98
2	491	1,620	945	610	510	320	280	12,300	6,110	384	108	98
3	466	1,630	920	580	490	315	305	9,750	10,500	323	103	98
4	441	7,770	880	550	480	310	330	7,920	7,720	291	99	99
5	412	10,900	865	545	470	305	375	6,480	5,690	254	108	124
6	418	8,400	855	525	460	300	440	5,750	*4,160	246	116	110
7	478	6,040	2,350	485	445	295	540	5,800	4,950	243	144	101
8	725	5,500	4,180	470	435	290	675	6,790	9,070	215	141	99
9	1,710	5,920	5,270	465	425	290	*865	8,460	8,410	189	118	99
10	*2,000	5,280	2,460	460	420	290	1,090	9,870	6,240	167	108	99
11	1,640	4,460	1,780	455	410	285	1,340	9,410	4,670	170	103	99
12	1,290	4,040	1,250	455	405	285	1,800	8,630	4,210	178	101	98
13	1,030	3,510	1,000	470	400	280	2,250	9,720	4,110	178	99	98
14	846	3,100	845	480	390	280	2,800	12,100	3,350	172	98	98
15	698	4,260	750	490	385	280	3,100	12,400	2,600	165	98	98
16	610	5,920	725	550	380	280	3,140	10,800	2,150	155	98	98
17	544	5,200	705	640	380	275	3,400	12,400	1,740	144	98	98
18	491	4,280	715	910	*375	270	3,200	10,700	1,680	128	130	98
19	447	5,440	730	1,180	375	270	3,000	7,960	1,780	120	258	98
20	401	2,690	765	1,310	370	265	7,790	6,120	1,620	110	172	98
21	368	2,280	800	1,300	365	260	12,000	5,200	1,630	104	*137	98
22	343	1,800	810	1,160	360	260	14,400	6,790	1,360	99	*130	110
23	318	1,580	775	1,070	355	255	17,000	7,150	1,070	99	124	114
24	309	1,640	705	965	350	255	18,600	5,830	864	99	201	108
25	435	1,570	690	880	345	260	18,200	4,590	740	99	175	101
26	2,320	1,230	680	810	340	265	18,900	3,970	749	99	155	101
27	3,060	1,150	680	*740	335	275	18,800	4,850	1,290	101	141	99
28	2,580	1,080	700	690	330	270	18,400	4,570	1,070	101	120	98
29	2,130	1,040	705	640	325	270	17,500	3,710	792	101	108	112
30	1,740	1,000	680	595	325	265	17,500	3,040	595	101	101	110
31	1,490	-	665	550	-	270	-	2,600	-	101	98	-
Total	30,723	109,820	34,875	21,665	11,640	8,715	208,090	240,880	103,130	5,408	3,893	3,057
Mean	991	3,661	1,125	699	401	281	6,936	7,770	3,438	174	126	102
Cfs/m	0.768	2.84	0.872	0.542	0.311	0.218	5.38	6.02	2.67	0.135	0.098	0.079
In.	0.89	3.17	1.00	0.62	0.34	0.25	6.00	6.94	2.98	0.16	0.11	0.09
Calendar year 1951: Max	18,800	Min	246	Mean	2,371	Cfs/m	1.84	In.	24.97			
Water year 1951-52: Max	18,900	Min	98	Mean	2,136	Cfs/m	1.66	In.	22.55			

Peak discharge (base, 10,000 cfs).--Nov. 5 (2 a.m.) 11,400 cfs (6.18 ft); Apr. 27 (1 a.m.) 19,200 cfs (8.10 ft); May 15 (2 a.m.) 12,900 cfs (6.57 ft); May 17 (12 m.) 12,700 cfs (6.50 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 23 to Apr. 23.

## St. John River at Dickey, Maine

Location.--Lat 47°06'40", long. 69°05'15", on right bank at Dickey, Aroostook County, 0.6 mile downstream from Little Black River and 2.5 miles upstream from Allagash River.

Drainage area.--2,700 sq mi, approximately.

Records available.--July 1910 to November 1911 (published as "near Dickey"), September 1946 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 590 ft (from topographic map). July 5, 1910, to Nov. 21, 1911, staff gage at site 1,000 ft downstream at different datum.

Average discharge.--6 years (1946-52), 4,570 cfs.

Extremes.--Maximum discharge during year, 38,200 cfs Apr. 30 (gage height, 12.33 ft); maximum gage height, 17.53 ft Apr. 18 (backwater from ice); minimum discharge, 360 cfs Aug. 16.

1910-11, 1946-52: Maximum discharge, 68,700 cfs May 9, 1947 (gage height, 16.30 ft), from rating curve extended above 33,000 cfs by logarithmic plotting; maximum gage height, 18.63 ft Apr. 20, 1950 (backwater from ice); minimum discharge, 129 cfs Sept. 17, 1948.

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

Revisions.--W 1141: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	354	5.0	5,810
1.8	578	7.0	11,600
2.2	940	9.0	19,500
3.0	1,890	12.0	36,000
4.0	3,600		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	2,490	2,510	1,780	1,000	790	605	*34,200	5,520	1,700	680	465
2	970	2,460	2,560	1,740	990	790	605	27,300	8,200	1,500	610	475
3	930	2,680	2,540	1,720	980	780	635	21,600	20,000	1,160	530	500
4	*902	9,370	2,410	1,720	970	770	705	17,900	17,500	1,130	450	505
5	854	20,000	2,490	1,750	960	770	780	15,000	13,400	1,170	490	510
6	864	15,900	2,710	1,920	950	760	885	13,700	10,300	1,110	530	510
7	1,030	11,200	4,760	2,190	940	750	1,020	14,600	9,790	1,050	600	480
8	1,300	9,250	9,200	2,020	940	750	1,160	18,000	16,600	950	620	450
9	2,130	9,910	10,400	*1,660	930	750	1,370	21,600	17,800	900	560	425
10	3,480	9,550	8,860	1,590	920	730	1,620	24,400	13,900	920	490	405
11	3,380	8,170	6,250	1,370	920	750	2,010	24,200	10,700	890	440	390
12	2,700	7,200	4,630	1,350	910	780	2,510	23,000	9,790	860	410	415
13	2,140	6,500	3,880	1,150	900	815	3,140	24,000	9,460	820	385	460
14	1,740	5,740	2,120	1,050	900	825	3,760	27,400	8,260	790	*370	520
15	1,480	6,450	1,100	1,030	890	815	4,320	29,800	6,550	780	365	540
16	1,300	10,300	1,200	1,020	885	800	4,520	25,700	5,350	770	360	510
17	1,170	10,600	1,320	1,080	875	780	4,650	24,000	4,500	760	540	470
18	1,080	9,070	1,470	1,170	865	750	5,100	22,400	3,930	760	1,020	435
19	1,000	7,400	1,620	1,440	865	730	6,810	18,000	3,720	770	1,500	410
20	902	5,950	1,760	1,720	855	705	5,710	14,600	3,700	820	1,220	475
21	845	4,740	2,010	1,740	845	685	13,100	12,600	3,440	860	900	510
22	798	3,950	2,140	1,620	845	680	16,800	14,400	3,230	840	850	540
23	741	3,460	2,040	1,490	835	670	22,000	16,400	2,750	770	870	500
24	732	3,800	1,980	1,590	835	670	32,200	13,900	2,270	720	1,260	460
25	921	3,800	1,890	1,290	825	680	31,600	11,300	2,270	680	1,190	430
26	2,540	3,060	1,860	1,230	815	660	33,900	9,700	2,480	660	1,080	*405
27	5,660	2,780	2,040	1,180	805	*660	36,300	10,300	2,490	780	*960	400
28	5,260	2,450	2,510	1,120	*800	645	37,400	10,600	2,660	1,000	800	395
29	4,180	1,980	2,350	1,070	790	635	37,700	9,010	2,290	1,200	650	390
30	3,380	2,250	2,040	1,040	-	625	38,000	7,480	1,690	1,080	*550	385
31	2,830	-	1,890	1,020	-	610	-	6,320	-	860	510	-
Total	58,279	202,480	96,540	44,640	25,840	22,610	350,915	563,410	224,740	29,060	21,780	13,765
Mean	1,880	6,749	3,114	1,440	891	729	11,700	18,170	7,491	937	703	459
Cfs/m	0.696	2.50	1.15	0.533	0.330	0.270	4.33	6.73	2.77	0.347	0.260	0.170
In.	0.80	2.79	1.33	0.61	0.36	0.31	4.83	7.76	3.09	0.40	0.30	0.19
Calendar year 1951: Max			40,300		Min 627	Mean 5,028	Cfs/m 1.86	In. 25.33				
Water year 1951-52: Max			38,000		Min 360	Mean 4,519	Cfs/m 1.67	In. 22.77				

Peak discharge (base, 27,000 cfs).--Apr. 30 (5 a.m.) 38,200 cfs (12.33 ft); May 15 (6 a.m.) 30,600 cfs (11.12 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record July 8 to Sept. 30; discharge estimated on basis of 4 discharge measurements and records for nearby stations. Stage-discharge relation affected by ice Dec. 17 to Apr. 23 (no gage-height record Dec. 17 to Jan. 8, Jan. 22 to Feb. 5; discharge estimated on basis of 1 discharge measurement and records for nearby stations).

## ST. JOHN RIVER BASIN

## Allagash River near Allagash, Maine

Location.--Lat 47°04'15", long. 69°04'50", on left bank a quarter of a mile upstream from Allagash Inn and 3 miles upstream from mouth and village of Allagash, Aroostook County.

Drainage area.--1,250 sq mi, approximately (not including about 240 sq mi drained by Chamberlain Lake through Telos Canal).

Records available.--July 1910 to November 1911, September 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 604.6 ft above mean sea level, datum of 1929. July 1910 to November 1911 staff gage at site 3 miles downstream at different datum.

Average discharge.--21 years (1931-52), 1,901 cfs.

Extremes.--Maximum discharge during year, 13,200 cfs May 13 (gage height, 8.61 ft); minimum, 188 cfs Sept. 11 (gage height, 1.80 ft).

1910-11, 1931-52: Maximum discharge, 23,400 cfs May 5, 1933 (gage height, 11.32 ft); maximum gage height, 13.14 ft May 1, 1939 (ice jam); minimum daily discharge, 91 cfs Mar. 9-15, 1948.

Remarks.--Records good except those for period of ice effect, which are fair. Some storage in lakes above station.

Revisions.--W 726: Drainage area. Revised figures of discharge, in cubic feet per second, for a period in water year 1911, superseding figures published in Water-Supply Paper 301 are given herewith:

Aug. 1, 1911..... 1,800  
Aug. 2, 1911..... 1,500

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
August.....	1,800	147	423	0.336	0.39

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	188	4.5	3,100
2.2	378	6.0	6,090
2.8	800	7.5	9,950
3.5	1,590	9.0	14,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	372	570	1,470	865	460	495	515	*10,400	2,360	990	510	200
2	372	583	1,410	820	450	470	570	9,260	3,120	990	420	212
3	367	605	1,370	790	430	440	620	7,790	3,650	980	390	224
4	*356	1,590	1,330	790	425	420	680	7,060	3,050	1,010	356	232
5	356	1,930	1,310	800	425	395	745	6,660	2,790	1,030	372	232
6	372	1,420	1,510	820	440	390	820	5,980	2,630	1,020	503	228
7	444	1,490	2,150	870	445	385	890	5,890	3,560	990	536	228
8	516	2,180	2,900	870	425	365	970	7,480	5,850	960	484	220
9	648	2,610	3,100	*820	440	355	1,040	9,310	6,380	1,040	432	208
10	633	2,770	2,880	735	420	350	1,170	11,300	5,960	3,280	408	200
11	536	2,880	2,420	640	415	370	1,290	12,100	5,670	4,110	384	192
12	477	2,910	2,360	555	450	420	1,430	12,100	6,090	2,980	356	257
13	426	2,770	2,020	495	530	415	1,550	13,000	5,890	2,200	323	323
14	384	2,580	1,330	460	570	410	1,690	12,900	5,230	1,680	*288	318
15	372	2,710	1,130	440	585	400	1,860	12,300	4,710	1,290	273	278
16	362	2,740	1,060	515	585	410	2,060	11,400	4,210	1,100	264	250
17	340	2,450	990	590	575	415	2,360	11,100	3,870	940	345	228
18	323	2,180	940	670	575	410	2,640	10,500	3,630	836	536	220
19	313	2,120	890	695	590	405	3,050	9,720	3,240	800	496	220
20	298	2,030	870	650	620	400	3,400	7,580	2,660	845	372	308
21	278	1,930	930	650	635	400	3,630	6,450	1,890	784	308	372
22	268	1,800	1,020	620	635	405	3,890	7,060	1,460	736	313	350
23	*264	1,890	990	600	625	415	4,350	6,990	1,310	598	350	303
24	264	1,800	970	585	620	440	5,080	6,750	3,370	530	334	268
25	340	1,690	910	555	600	450	6,680	7,380	4,770	470	298	242
26	900	1,520	890	525	575	490	7,580	7,310	4,190	408	264	*224
27	1,070	1,590	920	570	550	*495	8,460	6,720	2,450	402	237	228
28	800	1,380	990	565	*525	495	9,540	3,790	1,320	990	220	232
29	688	1,470	1,010	545	515	485	10,500	2,910	1,070	1,170	212	220
30	619	1,460	990	510	-	475	11,500	2,690	1,010	970	216	200
31	570	-	920	465	-	470	-	2,480	-	664	216	-
Total	14,328	57,628	43,080	20,080	15,135	13,140	100,560	254,360	107,390	36,773	11,016	7,397
Mean	462	1,921	1,435	648	522	424	3,352	8,205	3,580	1,186	355	247
Cfsm	0.370	1.54	1.13	0.518	0.418	0.339	2.68	6.56	2.86	0.949	0.284	0.198
In.	0.43	1.72	1.30	0.60	0.45	0.39	2.99	7.56	3.19	1.09	0.33	0.22
Calendar year 1951: Max			9,290		Min 264	Mean 1,962	Cfsm 1.57	In. 21.30				
Water year 1951-52: Max			13,000		Min 192	Mean 1,863	Cfsm 1.49	In. 20.27				

Peak discharge (base, 5,700 cfs).--Apr. 30 (9 a.m.) 11,600 cfs (8.07 ft); May 13 (5 p.m.) 13,200 cfs (8.61 ft); June 9 (11 a.m.) 6,470 cfs (6.17 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 15 to Apr. 24.

St. Francis River at outlet of Glazier Lake, near Connors, New Brunswick

(International gaging station)

Location.--Lat 47°12'25", long. 68°57'25", on left bank at outlet of Glazier Lake, 4 miles upstream from mouth and 6.5 miles west of Connors, Madawaska County.

Drainage area.--496 sq mi.

Records available.--October 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 550 ft (from International Boundary map).

Extremes.--Maximum discharge during year, 6,660 cfs May 1 (gage height, 9.83 ft); minimum, 125 cfs Sept. 29, 30 (gage height, 2.30 ft).

Remarks.--Records excellent above 300 cfs, good between 200 and 300 cfs, and fair below 200 cfs. Lake area above station has not yet been developed for storage.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.0	74	5.0	1,520
2.5	168	6.0	2,310
3.0	323	7.0	3,230
3.5	548	8.0	4,320
4.0	835	9.0	5,550
4.5	1,160	10.0	6,900

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	316	558	418	250	191	194	6,550	1,710	715	319	291
2	129	309	553	409	247	191	197	6,590	1,680	645	298	280
3	131	316	558	404	244	191	214	6,140	1,840	586	284	273
4	131	396	518	400	241	191	222	5,480	2,190	548	263	263
5	131	575	498	391	234	194	225	4,840	2,350	523	260	250
6	136	884	498	383	228	194	237	4,310	2,280	479	260	244
7	138	1,050	548	375	225	194	247	4,040	2,150	445	253	231
8	142	1,120	709	365	222	194	260	4,200	2,100	404	253	219
9	161	1,110	927	354	222	194	277	4,740	2,120	375	253	211
10	178	1,090	1,180	343	222	194	309	5,420	2,200	348	250	202
11	200	1,080	1,280	331	222	191	362	5,910	2,190	339	247	194
12	247	1,020	1,240	323	219	191	460	6,070	2,190	323	234	168
13	231	970	1,170	312	216	191	575	6,000	2,220	305	228	166
14	231	908	1,070	309	216	191	721	5,940	2,230	287	219	161
15	228	896	951	309	216	191	890	5,870	2,150	284	202	150
16	222	939	847	312	216	194	1,010	5,520	1,960	273	197	148
17	214	1,080	775	301	214	197	1,110	4,980	1,800	253	228	146
18	208	1,160	715	301	216	197	1,190	4,380	1,670	247	263	144
19	202	1,190	727	301	216	197	1,280	3,880	1,550	250	277	144
20	191	1,170	668	294	214	194	1,460	3,440	1,450	250	298	150
21	184	1,100	645	294	208	197	1,730	3,130	1,370	238	312	150
22	176	1,010	629	284	205	197	2,040	2,950	1,300	222	323	148
23	168	920	602	298	200	197	2,320	2,840	1,230	216	331	146
24	164	865	575	294	200	197	2,510	2,740	1,150	214	335	144
25	178	799	548	280	200	197	2,770	2,600	1,080	202	354	142
26	205	769	538	263	197	194	3,180	2,410	1,020	194	366	138
27	231	715	513	280	197	194	3,820	2,290	957	194	370	133
28	256	640	503	277	197	194	4,550	2,190	895	194	369	129
29	298	597	498	260	194	191	5,290	2,060	845	370	346	125
30	312	575	474	253	-	191	5,070	1,940	775	362	331	125
31	316	-	436	250	-	191	-	1,810	-	346	305	-
Total	6,068	25,569	21,932	9,969	6,298	6,002	45,730	131,260	50,643	10,747	8,821	5,415
Mean	196	852	707	322	217	194	1,520	4,230	1,630	347	285	180
Cfsm	0.39	1.72	1.43	0.65	0.44	0.39	3.06	8.53	3.41	0.70	0.57	0.36
In.	0.45	1.92	1.63	0.75	0.47	0.45	3.41	9.83	3.30	0.81	0.66	0.40
Calendar year 1951: Max	-	-	-	Min	-	Mean	-	Cfsm	-	In.	-	-
Water year 1951-52: Max	6,590	Min	125	Mean	897	Cfsm	1.81	In.	24.60	-	-	-

## St. John River at Fort Kent, Maine

Location.--Lat 47°14'55", long. 68°36'20", on left abutment of footbridge, in town of Fort Kent, Aroostook County, half a mile upstream from mouth of Fish River.

Drainage area.--4,790 sq mi, approximately (revised), not including 240 sq mi drained by Chamberlain Lake through Telos Canal.

Records available.--April 1906 to December 1915 (discontinued).

Gage.--Staff gage. Altitude of gage is 490 ft (from topographic map).

Average discharge.--9 years (1906-15), 7,750 cfs.

Extremes.--1906-15: Maximum discharge, 76,700 cfs May 13, 1909 (gage height, 19.7 ft, from graph based on gage readings); minimum daily, 475 cfs Oct. 5-8, 1906.

Revisions.--Figures of maximum discharge for the water years 1914 and 1915 have been revised to 68,300 cfs May 11, 1914 (gage height, 18.38 ft) and 43,200 cfs May 6, 1915 (gage height, 13.95 ft), superseding figures published in Water-Supply Papers 381 and 401, respectively.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1907, 1909-15, superseding figures published in Water-Supply Papers 241, 261, 281, 301, 321, 351, 381, and 401, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1906		1910		1912		1913	
Oct. 21.....	5,300	Apr. 9.....	34,800	May 8.....	46,500	Apr. 19.....	26,800
22.....	5,000	10.....	34,700	10.....	47,100	20.....	29,700
23.....	4,650	11.....	35,200	11.....	46,800	21.....	30,400
24.....	4,000	13.....	27,100	12.....	41,600	22.....	29,200
25.....	4,300	20.....	24,800	13.....	45,000	23.....	27,300
26.....	4,200	21.....	34,500	14.....	48,400	24.....	35,700
27.....	4,100	22.....	42,600	15.....	44,400	25.....	50,000
28.....	4,100	23.....	52,800	16.....	38,200	26.....	59,000
29.....	4,200	24.....	58,700	17.....	35,800	27.....	65,400
30.....	4,200	25.....	55,800	18.....	35,700	28.....	71,400
31.....	4,200	26.....	53,000	19.....	39,000	29.....	74,100
Nov. 2.....	4,100	27.....	51,300	20.....	36,200	30.....	75,000
3.....	4,000	28.....	47,400	21.....	33,500		
4.....	3,900	29.....	44,700	22.....	29,200		
5.....	3,800	30.....	39,500	23.....	25,500	May 1.....	24,600
6.....	3,800	Dec. 1.....	1,400	24.....	24,600	2.....	25,500
7.....	3,700	2.....	1,350	25.....	28,300	3.....	28,500
8.....	3,700	3.....	1,230	26.....	29,800	4.....	33,300
9.....	3,600			27.....	30,600	5.....	40,300
10.....	3,600	1911		28.....	24,100	6.....	45,800
11.....	3,600	Apr. 14.....	1,550	29.....	24,300	7.....	52,200
12.....	3,600	15.....	1,770	30.....	36,500	8.....	59,200
13.....	3,600	16.....	2,230	31.....	47,400	9.....	60,400
14.....	3,600	17.....	2,800	June 1.....	55,200	10.....	62,400
15.....	3,600	18.....	4,100	2.....	55,000	11.....	67,200
16.....	3,600	19.....	5,100	3.....	42,900	12.....	64,200
17.....	3,700	20.....	5,700	4.....	36,000	13.....	54,200
18.....	3,900	21.....	6,350	5.....	31,100	14.....	48,400
19.....	3,900	22.....	6,800	6.....	27,800	15.....	43,400
20.....	3,900	23.....	7,500	7.....	25,500	16.....	39,800
21.....	3,800	24.....	8,190	14.....	27,100	17.....	32,500
22.....	3,600	25.....	9,190	15.....	27,600	18.....	31,100
23.....	3,500	May 3.....	63,600	16.....	26,500	19.....	29,900
24.....	3,500	4.....	64,200	17.....	25,700	20.....	27,600
25.....	3,500			18.....	24,800	21.....	26,600
		1912		Dec. 24.....	5,220	22.....	25,000
1909		Apr. 23.....	25,700	25.....	5,000	24.....	24,600
Apr. 21.....	21,700	24.....	30,600	26.....	4,600	25.....	24,600
22.....	23,500	25.....	40,000	27.....	4,310	29.....	24,600
23.....	25,000	26.....	42,900	28.....	4,000	Dec. 2.....	4,750
24.....	27,000	27.....	58,100	29.....	3,830	3.....	5,180
25.....	28,500	28.....	56,700	30.....	3,830	4.....	5,000
26.....	35,000	29.....	48,200	31.....	3,830	5.....	5,700
27.....	26,400	30.....	45,000			6.....	5,400
June 18.....	3,620	May 1.....	43,700	1913		7.....	5,100
19.....	5,230	2.....	41,600	Jan. 1.....	3,830	8.....	4,850
20.....	12,300	3.....	40,800	2.....	3,850	9.....	4,550
		4.....	41,800	3.....	4,150	10.....	4,150
1910		5.....	43,400	4.....	4,600	11.....	3,880
Apr. 5.....	10,500	6.....	43,900	Apr. 2.....	25,000	12.....	3,600
6.....	17,000	7.....	45,000	3.....	27,100		3,450
8.....	31,100	8.....	43,400	4.....	26,200		

## St. John River at Fort Kent, Maine--Continued

Revised figures of monthly discharge, in cubic feet per second, 1907, 1909-15

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October 1906.....	29,000	475	6,570	1.37	1.58
November.....	4,100	3,500	3,690	.770	.86
Water year 1906-7.....	59,000	475	8,410	1.76	23.86
April 1909.....	35,000	1,950	14,300	2.99	3.34
June.....	17,500	3,460	8,320	1.74	1.94
Water year 1908-9.....	75,600	595	8,010	1.67	22.70
Calendar year 1909.....	75,600	1,050	9,740	2.03	27.62
April 1910.....	58,700	5,000	29,600	6.18	6.90
Water year 1908-10.....	58,700	1,060	7,990	1.67	22.66
December 1910.....	1,400	501	780	.163	.19
Calendar year 1910.....	58,700	501	6,590	1.38	18.70
April 1911.....	18,600	1,090	5,190	1.08	1.20
May.....	64,200	7,860	25,500	5.32	6.13
Water year 1910-11.....	64,200	501	4,560	.952	12.91
Calendar year 1911.....	64,200	519	4,630	.967	13.09
April 1912.....	58,100	1,150	16,100	3.36	3.75
May.....	48,400	24,100	38,100	7.95	9.16
June.....	55,200	5,490	22,400	4.68	5.22
Water year 1911-12.....	58,100	655	8,620	1.80	24.49
December 1912.....	6,690	3,830	5,150	1.08	1.24
Calendar year 1912.....	58,100	655	10,200	2.13	28.99
April 1913.....	75,000	12,700	30,600	6.39	7.13
Water year 1912-13.....	75,000	660	9,350	1.95	26.51
Calendar year 1913.....	75,000	660	8,290	1.73	23.49
May 1914.....	67,200	19,500	36,500	7.62	8.78
Water year 1913-14.....	67,200	1,060	6,630	1.38	18.78
December 1914.....	5,700	2,200	3,620	.756	.87
Calendar year 1914.....	67,200	1,060	6,580	1.37	18.64
Water year 1914-15.....	43,100	840	7,010	1.46	19.87

## St. John River below Fish River, at Fort Kent, Maine

(International gaging station)

Location.--Lat 47°15'25", long. 68°35'35", on right bank at Fort Kent, Aroostook County, a quarter of a mile downstream from Fish River.

Drainage area.--5,690 sq mi, approximately (not including about 240 sq mi drained by Chamberlain Lake through Teios Canal).

Records available.--October 1926 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 488.9 ft above mean sea level, datum of 1929. Prior to Oct. 10, 1933, staff gage on opposite bank at same datum.

Average discharge.--26 years, 9,515 cfs.

Extremes.--Maximum discharge during year, 69,300 cfs Apr. 30 (gage height, 18.58 ft); minimum, 937 cfs Sept. 30 (gage height, 1.06 ft).  
1926-52: Maximum discharge, 121,000 cfs May 5, 1933 (gage height, 25.1 ft); minimum daily, 510 cfs Mar. 13-15, 1948.

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

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

Rating tables, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22

Apr. 23 to Sept. 30

1.9	1,660	9.0	18,200	1.1	965	8.0	14,200
2.5	2,280	12.0	31,200	2.0	1,710	11.0	25,900
4.0	4,350	15.0	47,900	3.0	2,800	14.0	40,700
6.0	8,680			5.0	6,200	19.0	72,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,050	4,570	6,500	4,350	2,750	2,160	2,080	66,000	13,500	7,500	2,300	1,350
2	2,070	4,350	6,630	4,520	2,700	2,120	2,180	*56,900	14,900	6,900	2,000	1,260
3	2,040	4,730	6,430	4,370	2,640	2,080	2,180	47,800	26,300	6,300	1,760	1,260
4	*1,940	8,410	6,480	4,300	2,550	2,050	2,130	41,400	28,200	5,900	1,590	1,320
5	*1,870	22,600	6,320	4,190	2,500	2,020	2,070	37,000	23,800	5,600	1,590	1,290
6	1,930	21,700	6,830	4,190	2,500	2,000	2,060	33,700	20,100	5,200	1,700	1,300
7	2,060	17,000	8,490	3,970	2,450	1,980	2,130	32,900	18,800	5,000	2,090	1,260
8	2,530	15,200	14,500	3,860	2,400	1,950	2,170	39,200	26,000	4,700	2,130	1,220
9	3,220	15,800	17,500	3,700	2,350	1,950	2,550	45,100	31,300	4,750	1,940	1,190
10	4,380	16,200	16,700	*3,290	2,300	1,960	3,020	51,000	27,900	4,800	1,770	1,120
11	5,130	15,200	14,000	3,200	2,280	1,980	3,730	53,500	24,100	4,700	1,670	1,050
12	4,520	14,200	11,800	3,170	2,250	2,000	4,220	51,900	23,200	4,600	1,550	1,030
13	3,850	13,200	10,300	3,170	2,250	2,050	4,600	53,400	23,000	4,530	*1,510	1,120
14	3,410	12,300	6,590	3,080	2,240	2,100	4,760	56,100	20,900	3,860	1,330	1,290
15	3,030	12,400	5,720	3,030	2,240	2,100	5,240	58,600	18,500	3,400	1,240	1,350
16	2,700	15,700	5,300	3,080	2,220	2,100	5,440	53,200	16,100	3,130	1,160	1,320
17	2,490	17,500	4,500	3,100	2,210	2,090	6,060	48,800	14,200	2,880	1,350	1,200
18	2,310	15,800	4,600	3,240	2,200	2,080	7,310	46,700	13,000	2,660	3,880	1,120
19	2,180	14,000	5,000	3,600	2,200	2,070	8,900	40,900	11,900	2,600	5,720	1,090
20	2,080	12,300	4,800	3,790	2,190	2,060	13,400	35,000	11,200	2,610	4,150	1,270
21	1,930	10,700	5,110	3,880	2,190	2,040	33,000	29,800	10,000	2,790	3,020	1,300
22	1,860	8,600	5,600	3,980	2,180	2,040	45,500	30,300	9,030	2,640	2,520	1,370
23	1,790	8,840	5,910	3,880	2,180	2,050	48,600	24,000	8,280	2,410	2,490	1,210
24	1,700	9,500	5,700	3,790	2,170	2,080	49,700	22,000	8,490	2,150	3,010	1,220
25	2,120	8,330	5,300	3,660	2,170	2,100	49,600	20,000	10,500	1,900	2,800	1,120
26	2,880	6,960	5,000	3,570	2,160	*2,180	53,800	19,500	11,800	1,730	2,440	1,090
27	6,690	6,680	4,800	3,450	*2,160	2,150	58,900	19,200	10,800	1,660	2,130	1,040
28	2,920	6,480	4,910	3,300	2,180	2,090	62,800	20,000	9,300	2,170	1,970	1,020
29	6,740	6,040	4,800	3,170	2,160	2,030	66,200	20,000	8,500	3,910	*1,700	1,020
30	5,740	6,210	4,300	3,050	-	2,000	68,800	19,000	8,200	3,590	1,650	980
31	5,070	-	4,000	2,900	-	1,980	-	15,500	-	2,880	1,440	-
Total	100,430	351,500	224,220	111,850	66,950	63,620	623,130	1,187,400	501,800	119,400	67,500	35,880
Mean	3,240	11,720	7,233	3,608	2,309	2,052	20,770	38,300	16,730	3,852	2,177	1,196
Cfs/m	0.569	2.06	1.27	0.634	0.406	0.361	3.65	6.73	2.94	0.677	0.363	0.210
In.	0.66	2.30	1.46	0.73	0.44	0.42	4.07	7.76	3.28	0.76	0.44	0.23
Calendar year 1951: Max			71,800	Min	1,700	Mean	10,440	Cfs/m	1.83	In.	24.90	
Water year 1951-52: Max			68,800	Min	980		9,436	Cfs/m	1.66	In.	22.57	

Peak discharge (base, 45,000 cfs).--Apr. 30 (12 m.) 69,300 cfs (18.58 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record May 23-31, June 27 to July 12; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Dec. 15 to Apr. 22 (no gage-height record Dec. 16-22, Apr. 7-13).



## Fish River near Fort Kent, Maine

Location.--Lat 47°14'15", long. 68°34'55", on right bank 300 ft upstream from highway bridge at Fort Kent Mills, 2 miles upstream from mouth, and 2 miles south of Fort Kent, Aroostook County.

Drainage area.--871 sq mi.

Records available.--July 1903 to December 1908, May to November 1911, September 1929 to September 1952. Published as "at Wallgrass" 1903-8, 1911.

Gage.--Water-stage recorder. Datum of gage is 511.4 ft above mean sea level, datum of 1929. July 1903 to December 1908 and May to November 1911, chain gage at site 10 miles upstream at different datum.

Average discharge.--23 years, 1,360 cfs.

Extremes.--Maximum discharge during year, 8,530 cfs Apr. 30 (gage height, 9.01 ft); minimum, 77 cfs Sept. 30 (gage height, 2.21 ft).  
1903-8, 1911, 1929-52: Maximum discharge, 11,000 cfs Apr. 26, 1934, May 8, 1947; maximum gage height, 10.50 ft Apr. 26, 1934; minimum discharge, 46 cfs Oct. 9, 10, 1950.

Remarks.--Records excellent except those below 100 cfs, which are good, and those for period of ice effect, which are fair. Large lake area above station has not yet been developed for storage.

Revisions.--W 1001: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	75	4.0	930
2.4	125	5.0	1,860
2.6	187	6.0	3,210
3.0	335	7.5	5,730
3.5	592	9.0	8,510

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	339	617	1,220	1,090	855	375	330	*8,420	3,270	1,340	323	158
2	335	617	1,210	1,050	815	375	330	8,160	3,370	1,250	319	155
3	335	726	1,210	1,030	785	370	340	7,930	3,320	1,160	295	165
4	*331	1,010	1,190	1,030	745	360	350	7,600	3,210	1,140	287	174
5	311	1,030	1,150	1,030	785	360	370	7,300	3,070	1,070	291	156
6	335	1,080	1,210	1,070	710	350	380	7,080	2,940	986	287	155
7	366	1,160	1,400	1,010	680	340	405	6,900	3,050	930	276	143
8	369	1,360	*995	1,550	675	330	435	7,290	3,350	879	272	134
9	427	1,570	1,700	1,000	665	325	485	7,750	3,480	829	261	131
10	417	1,660	1,800	980	675	325	535	7,930	3,480	773	253	128
11	408	1,700	1,870	945	660	345	580	7,910	3,500	733	246	125
12	389	1,760	1,900	925	695	400	680	7,810	3,670	712	235	125
13	384	1,770	1,870	895	760	380	725	7,950	3,630	667	225	128
14	384	1,780	1,860	855	800	370	830	7,790	3,530	635	*218	125
15	379	1,820	1,790	970	800	370	930	7,580	3,370	604	201	125
16	379	1,830	1,860	930	775	380	1,070	7,300	3,160	569	197	122
17	375	1,850	1,820	960	710	380	1,220	7,050	3,050	534	235	114
18	370	1,870	1,610	970	640	370	2,480	6,750	2,870	512	243	103
19	366	1,870	1,560	1,020	590	365	2,810	6,400	2,710	501	184	106
20	344	1,800	1,530	1,070	540	360	3,550	6,100	2,510	474	211	125
21	339	1,770	1,500	930	500	360	4,190	5,790	2,380	453	207	114
22	335	1,690	1,450	915	460	360	4,630	5,660	2,240	432	211	106
23	335	1,670	1,390	910	415	355	5,050	5,480	2,100	413	211	101
24	*327	1,600	1,350	910	390	365	5,350	5,260	1,970	369	194	98
25	422	1,540	1,300	895	380	415	5,840	4,970	1,890	353	187	98
26	592	1,480	1,290	930	360	*420	6,600	4,680	1,840	344	181	101
27	563	1,440	1,300	910	*355	395	7,160	4,430	1,740	335	174	98
28	575	1,350	1,310	895	355	380	7,730	4,170	1,620	357	168	81
29	592	1,300	1,300	900	355	370	8,180	3,990	1,630	357	174	89
30	623	1,260	1,210	930	-	355	8,510	3,770	1,430	344	184	80
31	648	-	1,130	870	-	345	-	3,510	-	335	165	-
Total	12,714	44,000	45,840	29,820	17,930	11,350	82,035	200,710	83,280	20,410	7,115	3,675
Mean	410	1,467	1,479	962	618	366	2,735	6,475	2,776	658	230	122
Cfsm	0.471	1.68	1.70	1.10	0.710	0.420	3.14	7.43	3.19	0.755	0.264	0.140
In.	0.54	1.87	1.96	1.27	0.77	0.48	3.50	8.57	3.56	0.87	0.30	0.16

Calendar year 1951: Max 8,580 Min 311 Mean 1,697 Cfsm 1.95 In. 26.45

Water year 1951-52: Max 8,510 Min 80 Mean 1,527 Cfsm 1.75 In. 23.65

Peak discharge (base, 5,700 cfs).--Apr. 30 (6 to 9 a.m.) 8,530 cfs (9.01 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 19 to Apr. 16.

## St. John River at Van Buren, Maine

Location.--Lat 47°09'35", long. 67°55'55", painted vertically on second pier from Van Buren side of International Bridge on route between Van Buren, Aroostook County, and St. Leonard, New Brunswick, 13 miles above Grand Falls, New Brunswick.

Drainage area.--8,270 sq mi, approximately.

Records available.--May 1908 to September 1928 (discontinued).

Gage.--Staff gage. Datum of gage is 407.69 ft above mean sea level, unadjusted. Prior to Mar. 20, 1911, staff gage 700 ft downstream at same datum, gage heights published as mean sea level elevations.

Average discharge.--20 years, 14,100 cfs.

Extremes.--1911-12: Maximum discharge during water year not determined; minimum daily, 1,120 cfs Mar. 11.

1912-13: Maximum discharge during water year, 119,000 cfs Apr. 29 (gage height, 26.9 ft); minimum daily, 2,080 cfs Sept. 14, 15.

1913-14: Maximum discharge during water year, 105,000 cfs (revised) May 12 (gage height, 24.7 ft); minimum, 1,880 cfs Apr. 5-7.

1908-28: Maximum discharge, 135,000 cfs (revised) May 2, 1923 (gage height, 29.2 ft); minimum daily, 720 cfs Mar. 18, 31, 1923.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	May 12, 1914	105,000	24.7
401.....	1915	May 9, 1915	90,100	22.4
431.....	1916	Apr. 27, 1916	85,300	21.66
451.....	1917	June 20, 1917	94,000	23.0
471.....	1918	May 2, 1918	105,000	24.7
501.....	1919	May 20, 1919	103,000	24.4
501.....	1920	May 11, 1920	105,000	24.7
521.....	1921	Apr. 30, 1921	92,000	22.7
541.....	1922	June 20, 1922	109,000	25.3
561.....	1923	May 2, 1923	135,000	29.2
581.....	1924	May 17, 1924	111,000	25.55
601.....	1925	May 7, 1925	96,000	23.3
621.....	1926	May 19, 1926	92,700	22.8
641.....	1927	Apr. 24, 1927	88,200	22.1
661.....	1928	May 8, 1928	118,000	26.7

Cooperation.--Station established by International Commission, River St. John and maintained by that Commission until May 6, 1912. Winter gage heights at Grand Falls, New Brunswick, furnished by H. S. Ferguson, consulting engineer, New York, N. Y. and New Brunswick, Electric Power Commission, St. John, New Brunswick, Canada.

Revisions.--Revised figures of discharge, in cubic feet per second, for some periods in 1908, 1912-17, 1921, superseding figures published in Water-Supply Papers 281, 321, 351, 381, 401, 431, 451, and 521, are given herein. Complete tables of daily discharge are given for the water years 1912-14, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1908		1914		1916		1916	
Aug. 29.....	4,920	Aug. 8.....	3,070	Aug. 7.....	6,700	Sept. 8.....	2,830
30.....	4,350	9.....	3,160	8.....	7,260	9.....	2,910
31.....	3,960	10.....	3,670	9.....	7,380	10.....	2,910
Sept. 1.....	3,740	11.....	3,940	10.....	7,380	11.....	2,590
2.....	3,540	12.....	3,850	11.....	7,030	12.....	2,910
3.....	3,590	13.....	3,940	12.....	6,610	13.....	2,830
4.....	3,200	14.....	4,130	13.....	6,260	14.....	2,590
13.....	81,000	15.....	3,580	14.....	5,530	15.....	2,440
		16.....	3,950	15.....	4,820	16.....	2,590
1914		17.....	7,730	16.....	4,420	17.....	2,440
Nov. 16.....	5,300	18.....	7,140	17.....	4,130	18.....	2,290
17.....	5,100	19.....	6,060	18.....	3,850	19.....	2,830
18.....	4,900	20.....	5,740	19.....	3,850	20.....	2,750
19.....	4,700	21.....	5,840	20.....	3,580	21.....	2,590
20.....	4,700	22.....	5,320	21.....	3,410	22.....	2,750
21.....	4,900	23.....	4,820	22.....	3,580	23.....	2,750
22.....	5,800	24.....	4,620	23.....	3,240	24.....	2,670
23.....	6,800	25.....	4,130	24.....	2,990	25.....	2,590
24.....	7,800	26.....	4,320	25.....	2,670	26.....	2,910
25.....	7,700	27.....	5,120	26.....	2,520	27.....	2,830
26.....	7,600	28.....	5,840	27.....	2,750	28.....	2,750
27.....	7,500	29.....	5,530	28.....	2,670	29.....	2,590
28.....	7,300	30.....	4,920	29.....	2,910	30.....	2,440
29.....	7,200	31.....	4,720	30.....	2,670		
30.....	7,200			31.....	2,440		
Aug. 1.....	4,320	1916		Sept. 1.....	2,290	Sept. 1.....	5,740
2.....	3,940	Aug. 1.....	7,730	2.....	2,290	2.....	5,320
3.....	3,670	2.....	6,920	3.....	2,290	3.....	5,320
4.....	3,410	3.....	5,950	4.....	2,360	4.....	5,740
5.....	3,240	4.....	5,420	5.....	2,750	5.....	5,320
6.....	3,070	5.....	5,220	6.....	2,590	6.....	5,320
7.....	2,910	6.....	5,530	7.....	2,590	7.....	4,920

## St. John River at Van Buren, Maine--Continued

Revised figures of discharge, in cubic feet per second, 1908, 1912-17, 1921--Continued

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1917		1917		1921		1921	
Sept. 8.....	4,720	Sept. 30.....	2,150	July 20.....	4,920	Sept. 11.....	2,440
9.....	4,320			21.....	4,320	12.....	2,440
10.....	4,130			22.....	4,320	13.....	2,910
11.....	3,940	1921		23.....	4,320	14.....	3,240
12.....	3,760	July 1.....	3,760	24.....	5,120	15.....	2,070
13.....	3,760	2.....	3,410	25.....	4,320	16.....	3,760
14.....	3,410	3.....	3,070	26.....	3,940	17.....	4,520
15.....	3,410	4.....	2,910	27.....	3,410	18.....	4,130
16.....	3,070	5.....	2,750	28.....	3,240	19.....	3,940
17.....	2,910	6.....	2,590	29.....	3,070	20.....	3,760
18.....	2,910	7.....	2,440	30.....	2,750	21.....	3,240
19.....	2,910	8.....	2,290	31.....	2,750	22.....	3,240
20.....	2,750	9.....	2,440	Sept. 1.....	3,940	23.....	4,130
21.....	2,750	10.....	2,440	2.....	3,940	24.....	5,320
22.....	2,750	11.....	3,760	3.....	4,720	25.....	4,920
23.....	2,590	12.....	3,940	4.....	4,130	26.....	4,520
24.....	2,750	13.....	3,760	5.....	3,410	27.....	5,530
25.....	2,750	14.....	3,940	6.....	3,240	28.....	5,320
26.....	2,440	15.....	4,520	7.....	3,240	29.....	4,920
27.....	2,290	16.....	4,720	8.....	3,070	30.....	4,320
28.....	2,290	17.....	4,720	9.....	2,750		
29.....	2,290	18.....	4,720	10.....	2,440		
29.....	2,150	19.....	5,320				

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
August 1908.....	12,400	3,960	7,540	0.912	1.05
September.....	3,740	1,930	2,510	.304	.34
November 1914.....	9,760	4,700	7,270	.879	.98
Calendar year 1914.....	102,000	1,880	11,200	1.35	18.41
August 1915.....	7,730	2,910	4,570	.553	.64
September.....	22,400	1,740	5,220	.631	.70
Water year 1914-15.....	86,500	1,740	12,700	1.54	20.87
Calendar year 1915.....	86,500	1,740	13,400	1.62	21.98
August 1916.....	7,730	2,440	4,760	.576	.66
September.....	2,910	2,290	2,630	.318	.35
Water year 1915-16.....	84,600	2,600	12,600	1.52	20.80
Calendar year 1916.....	84,600	1,890	12,100	1.46	19.92
September 1917.....	5,590	1,930	3,620	.438	.49
Water year 1916-17.....	91,400	1,930	16,100	1.95	26.56
Calendar year 1917.....	91,400	1,930	16,800	2.03	27.59
July 1921.....	5,320	2,290	3,630	.439	.51
September.....	5,530	2,440	3,920	.462	.52
Water year 1920-21.....	89,400	2,040	13,600	1.64	22.39
Calendar year 1921.....	89,400	2,040	12,800	1.55	21.04

Discharge, in cubic feet per second, water year October 1911 to September 1912

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,560	3,160	5,580	3,790	1,870	1,500	2,050	76,000	93,400	13,900	4,700	7,970
2	4,660	2,750	5,480	3,700	1,820	1,480	2,010	71,000	96,000	12,800	6,520	7,480
3	4,220	2,750	5,500	3,600	1,790	1,450	2,020	66,000	84,200	12,200	7,000	7,000
4	4,010	2,360	5,560	3,500	1,760	1,400	2,100	70,000	72,600	11,100	6,050	7,000
5	4,010	2,180	5,640	3,400	1,740	1,350	2,210	71,300	61,900	10,600	5,820	6,050
6	3,800	2,000	5,560	3,300	1,700	1,300	2,300	67,800	55,500	10,000	5,140	5,590
7	3,800	2,560	5,560	3,200	1,670	1,250	2,440	71,400	50,500	9,980	4,700	5,590
8	4,220	2,950	5,550	3,060	1,620	1,220	2,570	72,600	47,000	8,470	4,700	5,140
9	4,660	2,750	5,540	2,980	1,600	1,170	2,700	76,200	44,000	7,970	4,260	4,920
10	4,880	4,010	5,600	2,870	1,560	1,160	2,950	83,600	40,600	7,480	5,820	4,700
11	4,010	6,020	5,760	2,780	1,540	1,120	3,950	84,900	36,800	7,000	12,800	5,140
12	3,580	6,260	5,780	2,710	1,520	1,180	5,400	80,400	35,000	6,520	39,600	4,920
13	2,950	5,790	5,840	2,650	1,480	1,220	7,300	81,000	35,000	5,820	50,500	4,920
14	2,750	5,560	5,920	2,580	1,450	1,280	9,800	88,800	43,500	5,590	44,500	4,700
15	2,560	6,260	6,160	2,520	1,430	1,350	11,500	92,700	46,500	6,050	35,400	4,700
16	2,180	5,790	5,940	2,450	1,400	1,480	14,200	83,000	42,500	5,590	27,400	4,700
17	2,750	8,980	5,600	2,400	1,380	1,590	17,000	76,600	40,600	5,360	22,200	4,700
18	2,560	8,980	5,400	2,370	1,370	1,700	20,600	70,800	42,500	5,140	18,200	4,480
19	2,560	8,700	5,100	2,320	1,350	1,750	24,500	74,400	42,000	4,700	16,000	4,260
20	2,560	8,500	4,950	2,300	1,350	1,720	29,500	71,400	37,700	4,700	13,900	4,050
21	2,750	8,100	4,580	2,280	1,390	1,700	34,000	61,900	34,100	4,700	11,400	4,050
22	2,560	7,760	4,260	2,240	1,420	1,640	39,000	54,000	30,600	4,700	10,000	4,260
23	2,560	7,400	4,000	2,220	1,490	1,610	46,200	47,500	27,400	4,700	11,100	5,590
24	3,370	7,100	3,570	2,180	1,550	1,580	56,500	44,500	24,400	4,480	10,600	9,240
25	4,220	6,800	3,920	2,120	1,580	1,550	69,000	49,500	21,800	4,260	10,600	8,470
26	4,010	6,540	4,050	2,100	1,570	1,540	96,500	61,400	20,200	4,260	10,000	7,000
27	4,440	6,300	4,070	2,070	1,570	1,550	115,000	58,600	18,500	4,700	10,300	6,520
28	4,010	6,140	4,100	2,020	1,530	1,600	105,000	50,500	16,900	4,260	10,600	6,050
29	3,800	5,920	4,080	2,000	1,510	1,730	90,300	46,500	15,700	4,260	10,600	5,590
30	3,370	5,740	3,970	1,940	-	1,870	85,000	59,700	14,800	3,840	9,760	5,140
31	3,370	-	3,850	1,880	-	2,050	-	78,000	-	4,260	8,980	-
Total	110,740	165,910	156,370	81,530	45,010	46,090	903,600	\$2,142	\$1,272.2	208,390	449,150	169,920
Mean	3,570	5,530	5,040	2,630	1,550	1,490	30,100	69,100	42,400	6,720	14,500	5,660
Cfsm	0.432	0.669	0.609	0.318	0.187	0.180	3.64	8.35	5.13	0.812	1.75	0.684
In.	0.50	0.75	0.70	0.37	0.20	0.21	4.06	9.64	5.72	0.94	2.02	0.76
Calendar year 1911: Max	134,000	Min	920	Mean	9,430	Cfsm	1.14	In.	15.48			
Water year 1911-12: Max	115,000	Min	1,120	Mean	15,700	Cfsm	1.90	In.	25.87			

\* Expressed in thousands.

Note.--No gage-height record Nov. 19 to May 5; discharge estimated on basis of gage heights collected at site 13 miles downstream.

## St. John River at Van Buren, Maine--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,140	24,400	14,500	6,700	7,800	2,680	36,500	98,600	37,700	8,220	7,260	3,410
2	5,140	23,300	14,500	6,730	7,300	2,680	36,000	92,300	35,000	8,980	7,590	3,580
3	5,360	21,800	15,100	6,800	6,900	2,680	38,000	70,200	35,400	8,470	6,180	3,410
4	5,140	21,500	13,200	7,800	6,400	2,690	38,000	63,600	36,800	11,100	5,950	3,070
5	5,590	19,800	17,800	9,300	5,850	2,640	38,800	60,800	36,300	11,100	5,950	3,070
6	8,220	18,200	22,200	8,300	5,500	2,560	40,500	58,600	34,100	9,760	5,740	2,750
7	7,970	17,600	24,300	7,690	5,100	2,430	39,000	57,000	31,500	8,220	5,320	2,590
8	7,480	26,600	22,800	7,750	4,950	2,430	37,000	52,500	28,200	7,480	4,920	2,440
9	7,000	47,500	19,400	7,300	4,750	2,430	32,200	47,500	25,100	6,520	4,520	2,590
10	6,520	55,500	16,700	7,260	4,480	2,430	31,700	42,500	22,600	6,050	4,320	2,440
11	6,050	45,500	18,300	7,230	4,100	2,340	30,000	38,600	20,800	6,280	4,520	2,220
12	5,590	38,600	19,400	7,230	3,800	2,460	28,700	35,000	18,800	7,970	4,720	2,150
13	5,360	34,100	17,900	7,200	3,650	2,700	28,000	31,500	17,900	8,980	4,520	2,550
14	5,360	29,800	13,200	7,000	3,470	3,000	29,000	28,200	16,900	11,400	4,320	2,080
15	5,590	27,400	10,800	7,000	3,320	3,220	29,100	25,900	15,700	11,400	4,130	2,080
16	5,360	25,100	12,300	6,780	3,130	3,220	27,000	24,000	15,100	11,100	3,760	2,590
17	5,590	22,900	13,400	6,400	3,090	4,200	29,900	22,200	14,500	10,000	3,410	2,440
18	5,590	21,500	12,200	6,200	2,890	4,800	27,800	21,200	14,800	9,500	3,240	2,440
19	5,590	20,800	11,400	6,200	2,890	5,400	37,700	20,800	15,100	10,000	3,070	2,440
20	5,140	19,500	12,100	6,200	2,770	6,400	42,000	21,500	14,800	15,400	3,070	2,440
21	5,140	18,200	11,600	6,230	2,750	7,800	47,500	23,300	13,000	16,300	2,910	2,290
22	5,140	17,600	10,000	6,230	2,780	15,600	47,500	22,600	12,800	15,900	2,910	2,150
23	5,140	16,900	9,200	6,900	2,700	17,200	45,500	22,600	11,900	11,900	2,750	2,910
24	5,590	16,900	9,300	7,500	2,680	20,900	44,500	24,400	11,400	10,300	2,750	4,920
25	7,240	16,300	9,500	8,180	2,780	25,900	51,500	26,600	10,600	9,500	2,750	5,320
26	16,900	19,500	9,200	8,450	2,870	27,500	70,800	26,200	9,500	8,720	3,070	5,740
27	36,800	17,200	8,800	8,600	2,770	28,800	97,200	26,200	8,980	7,970	3,410	6,590
28	42,500	15,400	8,300	8,840	2,690	28,500	115,000	26,200	8,470	7,240	3,410	5,320
29	35,900	14,500	7,700	8,600	-	29,000	119,000	25,900	8,220	7,480	3,760	4,720
30	30,600	14,500	6,700	8,300	-	31,500	114,000	28,800	8,220	8,470	3,580	4,130
31	27,000	-	6,700	8,000	-	34,000	-	38,900	-	8,220	3,410	-
Total	336,730	728,400	418,500	228,900	114,160	329,890	4,127.4	1,197	589,590	297,930	130,200	96,470
Mean	10,900	24,300	13,500	7,380	4,080	10,600	47,600	38,600	19,700	9,610	4,200	3,220
Cfs/m	1.32	2.94	1.83	0.892	0.493	1.28	5.76	4.67	2.38	1.16	0.508	0.389
In.	1.52	3.28	1.88	1.03	0.51	1.48	6.43	5.38	2.66	1.34	0.59	0.43

Calendar year 1912: Max 115,000 Min 1,120 Mean 16,600 Cfs/m 2.25 In. 30.60  
 Water year 1912-13: Max 119,000 Min 2,080 Mean 18,200 Cfs/m 1.96 In. 26.53

\* Expressed in thousands

Note.--Stage-discharge relation affected by ice Dec. 4 to Apr. 17 (no gage-height record Apr. 8-11).

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,440	13,300	8,400	3,500	2,080	2,770	2,080	43,000	35,200	9,240	3,180	2,910
2	3,080	12,200	8,240	3,350	2,080	2,770	2,080	42,500	31,500	9,370	2,850	2,990
3	3,880	10,080	8,440	3,080	2,080	2,770	1,980	45,500	29,800	10,200	3,070	5,410
4	3,080	10,000	9,000	3,050	2,080	2,770	1,880	51,000	26,800	9,990	3,240	4,220
5	2,880	9,500	9,200	2,910	2,080	2,770	1,880	57,700	27,000	8,980	3,240	3,940
6	2,700	8,980	9,700	3,050	2,080	2,770	1,880	69,000	30,400	8,220	3,160	3,580
7	3,080	8,470	9,700	3,050	2,080	2,770	1,880	79,800	29,400	7,480	2,910	3,850
8	3,250	8,220	9,400	2,910	2,080	2,770	2,520	88,200	27,200	6,880	2,750	5,530
9	3,080	8,220	9,300	2,910	2,080	2,770	2,910	92,700	24,400	6,400	2,850	8,100
10	2,700	8,220	9,100	2,910	2,080	2,770	3,350	96,600	21,800	6,050	2,590	12,800
11	2,700	8,720	8,800	2,910	2,190	2,640	3,820	102,000	20,000	5,480	2,670	12,800
12	2,700	8,470	8,200	2,770	2,190	2,520	3,990	102,000	18,200	6,050	2,750	11,000
13	2,530	8,720	7,600	2,770	2,190	2,520	4,330	93,400	17,400	5,940	2,520	8,720
14	2,700	8,720	7,000	2,640	2,190	2,410	4,510	83,000	16,800	5,250	2,440	7,140
15	2,700	8,220	6,400	2,640	2,190	2,410	4,510	75,600	16,200	4,810	2,590	6,160
16	2,880	7,970	5,900	2,520	2,410	2,520	4,890	70,200	16,600	4,920	2,750	5,530
17	3,060	7,480	5,400	2,300	2,300	2,410	5,090	62,700	18,000	4,810	2,830	4,720
18	3,440	7,000	5,000	2,300	2,300	2,410	5,290	56,200	18,400	4,920	2,910	4,130
19	4,050	6,760	4,750	2,410	2,300	2,410	6,440	52,200	17,200	5,250	2,910	3,760
20	4,920	7,240	4,650	2,410	2,410	2,410	9,790	50,200	16,000	5,030	2,910	3,410
21	7,240	7,970	4,700	2,410	2,520	2,410	10,800	49,200	15,200	4,700	2,830	3,240
22	11,100	7,970	4,700	2,300	2,640	2,410	13,500	47,000	13,900	4,810	2,990	3,580
23	16,300	8,980	4,400	2,300	2,640	2,410	14,700	43,200	12,800	4,590	3,410	3,160
24	16,300	11,400	4,300	2,190	2,640	2,410	16,700	45,000	12,500	4,050	3,070	3,070
25	14,200	11,600	4,270	2,190	2,640	2,410	19,500	44,800	11,900	3,640	4,040	3,500
26	15,300	11,600	4,250	2,190	2,640	2,410	23,000	42,000	11,400	3,440	4,420	3,760
27	13,300	11,400	4,300	2,080	2,640	2,410	26,800	40,600	10,400	3,340	3,940	3,580
28	14,500	10,600	4,350	2,080	2,770	2,190	45,000	43,500	9,630	3,160	3,410	3,160
29	15,100	9,600	4,600	2,080	-	2,190	50,000	46,000	9,240	2,970	3,070	3,240
30	15,100	9,000	4,700	2,080	-	2,080	50,000	42,800	8,850	2,790	2,670	3,410
31	14,500	-	4,590	2,080	-	2,080	-	38,600	-	2,880	2,590	-
Total	212,710	277,330	203,300	80,340	64,600	77,770	345,200	1,894.7	573,720	175,540	93,840	152,140
Mean	6,860	9,240	6,560	2,590	2,310	2,510	11,500	61,100	19,100	5,660	3,030	5,070
Cfs/m	0.830	1.12	0.793	0.313	0.279	0.304	1.39	7.40	2.31	0.684	0.366	0.613
In.	0.96	1.25	0.91	0.36	0.29	0.35	1.55	8.53	2.58	0.79	0.42	0.68

Calendar year 1913: Max 119,000 Min 2,080 Mean 14,000 Cfs/m 1.69 In. 22.97  
 Water year 1913-14: Max 102,000 Min 1,880 Mean 11,400 Cfs/m 1.38 In. 18.67

\* Expressed in thousands.

Note.--Stage-discharge relation affected by ice Nov. 28 to Apr. 30.

## Machias River near Ashland, Maine

Location.--Lat 46°37'40", long. 68°26'05", on right bank just upstream from highway bridge, 0.8 mile upstream from confluence with Aroostook River and 1½ miles west of Ashland, Aroostook County.

Drainage area.--328 sq mi.

Records available.--June 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 535 ft (from topographic map).

Extremes.--1951: Maximum discharge during period June to September, 1,980 cfs July 8 (gage height, 3.95 ft); minimum, 43 cfs July 1 (gage height, 1.07 ft).  
1951-52: Maximum daily discharge during water year, 4,650 cfs Apr. 27, 28; minimum, 5.4 cfs Sept. 17 (gage height, 0.64 ft).

Remarks.--Records excellent except those below 25 cfs and those for periods of ice effect or no gage-height record, which are fair. Flow partly regulated by Machias and Howe Lakes (combined capacity, about 280,000,000 cu ft), used for log driving.

Discharge, in cubic feet per second, 1951-52

1951									
Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	58	180	207	18	-	775	136	154
2	-	150	176	232	17	-	768	154	168
3	-	259	176	232	18	-	704	275	172
4	-	143	254	273	19	-	644	352	157
5	-	145	277	302	20	-	651	331	140
6	-	1,060	232	297	21	-	651	302	129
7	-	1,310	199	273	22	-	732	277	126
8	-	1,850	*176	232	23	192	658	302	129
9	-	1,400	165	207	24	172	468	273	129
10	-	1,120	172	195	25	280	341	224	126
11	-	798	199	187	26	335	282	195	122
12	-	732	350	176	27	350	259	172	106
13	-	828	480	172	28	400	236	165	103
14	-	835	321	*157	29	330	220	157	100
15	-	775	203	154	30	275	203	146	91
					31	-	191	154	-
Total.....						-	19,247	7,163	5,248
Mean.....						-	621	231	175

\* Discharge measurement made on this day.

1951-52

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	140	355	240	158	106	220	3,750	600	330	116	23
2	84	140	345	230	154	106	270	*3,400	1,000	157	103	25
3	*84	199	330	230	154	102	330	3,000	1,820	150	94	30
4	81	590	320	215	150	102	425	2,600	1,550	132	196	29
5	79	902	315	210	150	106	600	2,200	1,200	94	83	25
6	91	880	375	205	146	102	900	1,880	900	89	72	23
7	113	835	440	205	142	102	940	1,600	1,400	*89	67	21
8	146	1,020	575	200	140	100	1,020	1,640	3,500	94	61	20
9	191	1,190	820	196	136	100	1,150	1,700	2,600	79	180	19
10	184	1,050	760	196	132	100	1,300	1,740	2,050	79	205	19
11	165	1,050	625	*196	130	100	1,450	1,770	1,500	77	225	18
12	150	865	550	190	126	102	1,620	1,780	1,000	79	205	20
13	140	753	425	184	126	112	1,900	1,780	820	79	*225	23
14	136	732	320	172	122	110	1,940	1,740	740	74	205	22
15	129	790	360	172	122	106	2,100	1,700	670	74	255	9.6
16	122	812	385	210	122	106	2,400	1,600	550	69	245	6.4
17	106	705	365	230	122	100	2,700	1,480	480	114	47	6.1
18	100	535	345	235	122	100	3,250	1,320	460	285	54	6.4
19	97	385	360	240	122	97	3,400	1,200	540	96	50	8.5
20	94	504	385	230	122	97	3,400	1,120	658	69	43	15
21	89	468	400	230	122	110	3,500	1,000	500	69	37	12
22	*81	427	410	215	122	140	3,750	1,040	475	395	31	10
23	79	425	405	205	120	166	3,950	1,150	306	138	46	9.1
24	77	440	395	205	116	190	4,150	1,060	362	58	44	8.5
25	116	405	375	196	112	205	4,300	870	427	59	39	8.0
26	228	320	340	188	*110	215	4,500	780	470	74	34	9.6
27	241	275	320	184	102	215	4,650	910	720	122	31	11
28	211	400	300	180	102	*215	4,650	900	220	180	29	11
29	136	390	285	172	102	210	4,550	810	180	199	26	8.5
30	136	375	275	168	-	196	*3,750	730	210	176	25	9.1
31	140	-	260	166	-	196	-	660	-	390	*24	-
Total	3,912	18,002	12,520	6,295	3,706	4,114	73,065	48,920	27,908	4,169	3,097	465.8
Mean	126	600	404	203	128	133	2,436	1,578	930	134	99.9	15.5
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1951: Max	-	-	-	Min	-	Mean	-	Cfsm	-	In.	-	-
Water year 1951-52: Max	4,650	Min	6.1	Mean	563	Cfsm	1.72	In.	23.34	-	-	-

\* Discharge measurement made on this day.

Note.--No gage-height record Mar. 29 to June 17, Aug. 17-30; discharge estimated on basis of weather records and records for nearby gaging stations. Stage-discharge relation affected by ice Nov. 23 to Mar. 26 (no gage-height record Jan. 30 to Feb. 5; discharge estimated on basis of weather records).

## Aroostook River at Washburn, Maine

Location.--Lat 46°46'35", long. 66°09'30", on right bank just upstream from Bangor & Aroostook Railroad bridge, 0.1 mile downstream from Salmon Brook and 1 mile south of railroad station at Washburn, Aroostook County.

Drainage area.--1,620 sq mi, approximately.

Records available.--August 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 436.4 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1948, at datum 2.0 ft higher.

Average discharge.--22 years, 2,516 cfs (unadjusted).

Extremes.--Maximum discharge during year, 18,700 cfs Apr. 30 (gage height, 9.09 ft); maximum gage height, 10.51 ft Apr. 20 (backwater from ice); minimum, 79 cfs Sept. 18 (gage height, 1.40 ft).  
1930-52: Maximum discharge, 37,800 cfs Mar. 22, 1936 (gage height, 11.80 ft); maximum gage height, 15.78 ft Apr. 6, 1951 (backwater from ice); minimum daily discharge, 75 cfs Feb. 13-15, 1948.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by Squapan Lake (capacity, 2,554,000,000 cu ft) and by Millinocket Lake (capacity, 1,007,000,000 cu ft), used for power, and Machias and Rowe Lakes (combined capacity, about 280,000,000 cu ft), used for log driving.

Revisions (water years).--W 951: 1935.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	79	3.0	1,380
1.6	148	4.0	3,010
1.8	238	6.0	7,730
2.0	350	8.0	14,300
2.5	778	10.0	23,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	558	1,190	1,560	1,640	1,150	1,280	1,140	18,100	2,800	1,180	650	338
2	524	1,180	1,730	1,580	1,110	1,160	1,120	16,300	3,400	1,070	544	238
3	*467	1,490	1,960	1,510	1,050	1,030	1,210	13,400	5,830	936	285	238
4	428	3,300	2,210	1,440	730	1,120	1,380	11,200	6,780	851	248	326
5	406	5,060	2,550	1,380	1,050	1,270	1,320	9,820	5,610	738	344	296
6	392	4,670	2,880	1,320	1,090	1,280	1,450	8,360	4,370	524	274	233
7	482	4,110	*3,220	1,270	1,100	1,270	1,700	7,670	9,370	467	224	156
8	678	4,370	3,700	1,210	1,120	1,280	2,110	9,920	17,600	467	195	137
9	958	5,490	4,310	1,150	990	1,160	2,640	13,700	16,700	584	190	118
10	1,090	5,460	4,420	1,110	820	1,090	3,300	14,400	13,000	567	274	111
11	1,010	5,040	4,020	*1,070	730	1,200	4,350	13,900	9,560	550	399	115
12	882	4,690	3,660	1,030	870	1,300	5,150	12,900	9,340	603	350	111
13	778	4,420	3,400	990	960	1,270	6,350	12,700	8,650	822	*338	108
14	678	4,040	3,180	870	1,030	1,340	7,450	13,200	6,830	524	326	105
15	718	4,020	3,010	1,010	1,010	1,370	8,890	12,700	5,490	338	332	105
16	575	4,040	2,880	1,140	1,030	1,420	9,500	10,700	4,350	326	364	108
17	524	4,080	2,770	1,270	1,060	1,440	10,300	9,720	3,400	290	443	98
18	515	3,730	2,640	1,380	960	1,410	11,200	9,250	2,970	350	200	85
19	490	3,300	2,530	1,460	1,100	1,390	12,200	8,240	2,750	575	350	85
20	436	3,050	2,460	1,660	1,140	1,360	13,900	6,810	3,010	378	264	95
21	420	2,680	2,590	1,410	1,140	1,370	16,000	6,700	2,750	344	141	105
22	399	2,230	2,640	1,640	1,160	1,370	17,000	7,510	2,480	320	130	111
23	385	2,440	2,530	1,580	1,200	1,450	16,600	9,070	1,840	650	269	111
24	357	2,530	2,390	1,510	1,180	1,320	16,500	8,860	1,680	285	238	115
25	524	1,970	2,190	1,420	935	*1,390	16,600	7,260	1,680	219	467	111
26	1,310	1,450	2,130	1,380	1,160	1,370	16,060	6,060	1,840	204	406	115
27	1,940	1,350	2,030	1,460	1,140	1,340	17,200	5,340	1,900	274	302	*111
28	1,820	1,350	1,960	1,040	1,190	1,310	17,800	4,850	1,700	550	678	111
29	1,510	1,370	1,860	1,280	*1,250	1,270	17,700	6,020	1,200	778	650	108
30	1,350	1,420	1,790	1,250	-	1,230	*18,500	3,750	1,090	728	558	101
31	1,230	-	1,720	1,210	-	1,200	-	3,180	-	575	558	-
Total	23,834	95,500	83,020	40,650	30,455	40,080	277,040	301,590	159,950	16,867	10,791	4,305
Mean	769	3,183	2,678	1,311	1,050	1,293	9,235	9,729	5,332	544	348	144
( $\bar{x}$ )	+8	+5	-44	-197	-261	-440	+728	+218	+147	-38	-158	-29

Adjusted for change in contents, in Millinocket and Squapan Lakes

Mean	777	3,188	2,634	1,114	789	853	9,983	9,947	5,499	506	190	115
Cfsm	0.480	1.97	1.63	0.668	0.487	0.527	6.15	6.14	3.39	0.312	0.117	0.071
In.	0.55	2.20	1.88	0.79	0.53	0.61	6.86	7.08	3.78	0.36	0.13	0.08

	Observed					Adjusted						
Calendar year 1951:	Max	20,300	Min	357	Mean	3,029	Mean	3,031	Cfsm	1.87	In.	25.38
Water year 1951-52:	Max	18,500	Min	85	Mean	2,962	Mean	2,945	Cfsm	1.82	In.	24.85

Peak discharge (base, 13,000 cfs).--Apr. 30 (10 to 11 p.m.) 18,700 cfs (9 03 ft).

\* Discharge measurement made on this day.

† Change in contents, in Millinocket and Squapan Lakes, equivalent in cubic feet per second.

Note.--Stage-discharge relation affected by ice Nov. 26 to Apr. 17, Apr. 20 (no gage-height record Jan. 2-10; discharge estimated on basis of records for nearby stations).

## Aroostook River at Fort Fairfield, Maine

Location.--Lat 46°46'25", long. 67°49'55", on upstream side of right truss of bridge on route 165 at Fort Fairfield, Aroostook County, 3 miles upstream from the international boundary line and 7½ miles below the mouth of Little Madawaska Stream.

Drainage area.--2,230 sq mi, approximately.

Records available.--August 1903 to December 1910 (discontinued).

Gage.--Chain gage. Altitude of gage is 340 ft (from topographic map).

Average discharge.--7 years (1903-10), 3,330 cfs.

Extremes.--1903-10: Maximum discharge, 34,500 cfs May 1, 1907 (gage height, 15.05 ft); minimum, 130 cfs several times during August, September, and October 1905 (gage height, 3.0 ft).

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1904, 1909-11, superseding figures published in Water-Supply Papers 124, 261, and 281, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1903		1903		1910	
Oct. 1.....	275	Oct. 29.....	310	Oct. 5.....	400
2.....	240	30.....	240	6.....	525
3.....	210	31.....	275	7.....	720
4.....	240			8.....	900
5.....	210	1909		9.....	990
6.....	180	Apr. 14.....	2,750	10.....	1,090
7.....	180	15.....	3,100	11.....	975
8.....	210	16.....	3,730	12.....	840
9.....	240	17.....	4,400	13.....	700
10.....	180	18.....	4,950	14.....	580
11.....	155	19.....	5,400	15.....	500
12.....	180	20.....	6,300	16.....	425
13.....	210	21.....	7,600	17.....	380
14.....	240	22.....	9,900	18.....	330
15.....	210	23.....	11,600	Nov. 11.....	3,020
16.....	240	24.....	13,500	12.....	2,800
17.....	210	25.....	15,700	13.....	1,940
18.....	240	26.....	17,800	14.....	1,670
19.....	275	Dec. 11.....	4,000	15.....	1,400
20.....	435	12.....	3,700	16.....	1,100
21.....	435	13.....	3,400	17.....	900
22.....	390	14.....	3,170	18.....	765
23.....	350			19.....	660
24.....	350	1910		20.....	600
25.....	350	Apr. 5.....	5,400	21.....	540
26.....	310	6.....	10,000	22.....	505
27.....	310	Oct. 3.....	320	23.....	470
28.....	310	4.....	345	24.....	480

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October 1903.....	435	155	267	0.120	0.14
Water year 1903-4.....	29,000	155	2,640	1.18	16.13
April 1909.....	18,900	320	6,480	2.91	3.25
Water year 1908-9.....	33,000	310	3,430	1.54	20.85
December 1909.....	9,500	1,800	4,010	1.80	2.08
Calendar year 1909.....	33,000	510	4,610	2.07	28.02
April 1910.....	25,600	2,000	15,500	6.95	7.75
Water year 1909-10.....	25,600	275	4,560	2.04	27.73
October 1910.....	1,220	210	581	.261	.30
November.....	3,420	469	1,290	.578	.64
Calendar year 1910.....	25,600	210	3,420	1.53	20.79

## Meduxnekeag River near Houlton, Maine

Location.--Lat 46°06'15", long. 67°52'00", on right bank 0.3 mile downstream from South Branch and 2 miles upstream from Houlton, Aroostook County.

Drainage area.--175 sq mi.

Records available.--November 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 333.9 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1941-52), 276 cfs.

Extremes.--Maximum discharge during year, 3,180 cfs Apr. 21 (gage height, 6.70 ft); minimum, 4.6 cfs Sept. 18, 19 (gage height, 2.14 ft).  
1940-52: Maximum discharge, 5,440 cfs May 5, 1947, gage height, 8.56 ft; maximum gage height, 8.57 ft Apr. 22, 1950; minimum discharge, 3.6 cfs Sept. 19, 1946 (gage height, 2.09 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair. Small diurnal fluctuation due to saw mills upstream from station.

Revisions (water years).--W 1031: 1944.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 10

Apr. 11 to Sept. 30

2.5	43	3.5	425	2.1	2.9	3.0	196
2.6	65	4.0	698	2.2	8.0	3.2	282
2.8	122	4.6	1,120	2.3	17	3.5	425
3.0	196			2.4	29	4.0	698
				2.5	45	5.0	1,440
				2.6	67	6.0	2,450
				2.8	122	6.6	3,070

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	217	265	160	205	112	240	878	247	81	10	5.1
2	68	221	247	154	192	112	265	734	550	74	9.5	6.8
3	63	390	230	146	172	116	300	*618	992	69	8.7	8.7
4	61	980	217	140	158	120	340	529	777	56	8.0	10
5	*58	1,070	221	136	172	122	370	466	568	54	8.0	9.5
6	58	795	323	132	192	130	670	410	445	47	8.7	8.7
7	63	618	734	130	180	132	760	371	870	43	8.7	9.5
8	88	892	1,120	*126	170	122	820	410	1,830	42	8.7	6.8
9	173	1,110	1,100	122	*170	102	900	476	1,500	39	7.4	6.2
10	169	930	846	120	166	97	1,080	450	1,000	39	6.8	5.1
11	140	722	634	116	158	88	1,490	400	728	39	7.4	5.1
12	116	595	585	112	184	88	1,590	368	681	39	*7.4	5.1
13	103	508	555	102	210	94	1,570	466	578	37	6.8	5.1
14	78	461	520	102	215	130	1,550	461	476	37	6.2	5.1
15	81	456	475	106	196	142	1,960	445	391	37	*5.7	5.1
16	70	461	445	116	176	142	2,190	425	328	32	5.1	5.7
17	61	568	420	130	160	140	2,110	492	287	28	8.7	5.1
18	61	657	395	160	158	140	1,980	461	269	22	14	4.6
19	73	595	370	196	158	132	1,950	391	247	22	13	5.1
20	83	497	340	240	158	130	2,520	333	256	17	10	6.8
21	65	415	325	275	158	136	3,050	319	234	16	8.0	6.8
22	73	366	305	250	158	158	2,430	524	209	17	10	7.4
23	52	352	280	240	154	196	1,870	618	184	20	12	7.4
24	61	352	275	275	146	*240	1,660	518	157	20	11	6.8
25	94	328	250	275	130	210	1,440	420	132	17	9.5	6.2
26	221	347	235	260	122	205	1,300	381	126	15	8.7	6.8
27	221	352	215	285	120	200	1,250	471	180	12	7.4	8.0
28	213	330	200	285	116	205	1,170	456	169	12	7.4	8.0
29	196	325	192	280	116	210	1,070	391	119	15	6.8	7.4
30	192	320	180	275	-	210	*1,000	328	110	15	6.2	6.8
31	196	-	170	240	-	215	-	278	-	12	5.7	-
Total	3,326	16,230	12,669	5,686	4,770	4,576	40,905	14,286	14,640	1,025	261.5	200.8
Mean	107	541	409	183	154	148	1,364	461	488	33.0	8.44	6.69
Cfs/m	0.611	3.09	2.34	1.05	0.957	0.846	7.79	2.63	2.79	0.189	0.048	0.033
In.	0.70	3.45	2.70	1.21	1.01	0.98	8.69	3.03	3.11	0.22	0.06	0.04

Calendar year 1951: Max 3,370 Min 38 Mean 391 Cfs/m 2.23 In. 30.34  
Water year 1951-52: Max 3,050 Min 4.6 Mean 324 Cfs/m 1.85 In. 25.20

Peak discharge (base, 2,100 cfs).--Apr. 16 (6 to 8 p.m.) 2,280 cfs (5.86 ft); Apr. 21 (4 to 5 a.m.) 3,180 cfs (8.70 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28 to Dec. 1, Dec. 13 to Apr. 10.



## St. Croix River at Vanceboro, Maine

Location.--Lat 45°34'10", long. 67°25'45", on right bank at international highway bridge in Vanceboro, Washington County, 400 ft downstream from outlet of Spednik Lake.

Drainage area.--435 sq mi, approximately.

Records available.--October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 367.75 ft above mean sea level, datum of 1929.

Average discharge.--23 years (1925-52), 671 cfs.

Extremes.--Maximum discharge during year, 3,810 cfs June 11 (gage height, 8.69 ft); minimum, 160 cfs Oct. 16 (gage height, 3.50 ft).

1929-52: Maximum discharge, 4,010 cfs Mar. 23, 1936 (gage height, 8.81 ft); minimum, 1.9 cfs several times during October and November 1936 (gage height, 1.91 ft).

Remarks.--Records excellent except those below 150 cfs, which are good. Flow regulated by Chiputneticook Lakes (combined usable capacity, about 13,200,000,000 cu ft).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 20

Jan. 21 to Sept. 30

3.7	201	3.7	169	6.2	1,270
4.2	329	4.2	311	7.5	2,430
5.0	615	5.0	590	8.7	3,820
5.7	980				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	938	215	261	450	452	1,760	440	1,060	755	1,420	212	265
2	932	215	264	450	448	1,710	237	1,060	775	1,430	212	295
3	920	219	264	454	448	1,670	244	775	795	1,420	212	298
4	914	226	345	458	448	1,730	610	568	1,370	1,410	212	298
5	908	235	416	461	448	1,810	525	860	1,670	1,400	214	298
6	896	231	416	461	452	1,770	257	1,070	1,630	1,400	217	295
7	884	234	265	461	452	1,730	260	1,070	1,650	1,430	*560	295
8	884	236	215	461	*452	1,700	262	1,060	1,720	1,440	805	295
9	890	238	212	670	455	1,650	265	1,060	1,660	1,420	805	495
10	878	241	215	932	455	1,600	270	1,060	2,520	1,400	795	765
11	866	243	215	932	625	1,580	273	1,060	3,290	1,360	795	755
12	866	246	217	932	1,010	1,600	276	1,050	3,720	1,370	790	1,080
13	854	246	217	920	1,010	1,630	276	1,060	3,680	1,360	785	1,260
14	837	246	219	914	1,010	1,600	284	1,060	2,720	1,440	785	1,240
15	832	251	219	908	1,010	1,580	595	1,060	2,390	1,510	780	1,210
16	700	253	222	908	1,010	1,440	842	1,430	2,180	1,500	780	865
17	826	256	325	908	1,000	1,040	869	1,810	2,080	1,470	470	861
18	820	256	419	908	1,000	845	880	1,800	1,800	1,450	237	856
19	809	256	430	908	1,340	650	1,190	1,790	1,470	1,430	237	852
20	809	256	430	620	1,730	755	1,530	1,760	1,470	1,410	240	652
21	798	256	433	265	1,610	715	1,540	1,390	1,100	1,390	240	648
22	787	256	433	265	1,760	610	1,710	1,130	904	1,370	650	643
23	782	256	436	268	1,720	577	1,920	1,030	1,240	785	836	*630
24	772	256	436	268	1,680	577	*1,860	922	1,440	311	825	570
25	777	256	444	390	1,650	573	905	928	1,420	311	615	495
26	430	256	447	438	1,600	573	257	825	1,410	311	1,110	495
27	206	261	447	438	1,570	573	257	785	1,400	311	1,270	360
28	206	261	447	448	1,530	581	745	795	1,390	311	1,260	292
29	210	261	450	448	1,670	581	1,060	755	1,380	311	1,240	292
30	210	261	450	452	-	586	1,060	755	1,360	311	685	292
31	212	-	450	452	-	566	-	765	-	240	193	-
Total	22,653	7,379	10,679	18,246	30,465	36,182	21,719	33,643	52,589	34,452	19,267	17,347
Mean	731	246	344	589	1,051	1,167	724	1,085	1,746	1,111	622	578
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 3,510 Min 164 Mean 984 Cfsm - In. -

Water year 1951-52: Max 3,720 Min 193 Mean 832 Cfsm - In. -

\* Discharge measurement made on this day.

## Grand Lake Stream at Grand Lake Stream, Maine

Location.--Lat 45°10'25", long. 67°46'05", on left bank at Big Falls, 0.5 mile southeast of village of Grand Lake Stream, Washington County, 0.8 mile downstream from outlet of dam of Grand Lake.

Drainage area.--224 sq mi.

Records available.--October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 273.96 ft above mean sea level, datum of 1929.

Average discharge.--23 years (1929-52), 344 cfs.

Extremes.--Maximum discharge during year, 2,840 cfs June 12 (gage height, 6.35 ft); minimum, 37 cfs Nov. 3, 4, 5 (gage height, 1.17 ft).  
1928-52: Maximum discharge, that of June 12, 1952; minimum daily, 5 cfs Dec. 3-6, 11, 1945.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Grand and other lakes (combined usable capacity, about 8,250,000 cu ft). Records do not include water diverted through Farm Cove dam for about two weeks during June.

Revisions.--W 971: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	39	2.2	225
1.3	48	2.6	361
1.4	58	3.2	640
1.5	70	3.8	960
1.6	83	4.5	1,390
1.8	118	5.2	1,920
2.0	167	6.3	2,800

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	655	116	114	141	162	195	780	184	187	192	1,330	775
2	635	134	114	141	162	192	195	178	189	192	1,280	785
3	620	90	116	141	162	192	198	178	189	192	1,250	760
4	600	37	116	142	164	192	198	178	192	192	1,400	750
5	585	82	184	142	167	195	198	181	195	485	1,640	730
6	570	146	451	144	167	195	204	181	195	650	1,610	710
7	561	149	460	144	167	660	204	189	201	640	*1,570	695
8	566	136	270	146	*167	665	204	195	195	635	1,530	675
9	561	110	125	146	170	660	201	195	198	625	1,480	655
10	541	108	125	146	173	655	201	195	585	615	1,430	640
11	*527	108	330	146	175	650	198	195	1,550	450	1,400	635
12	512	108	493	146	181	*650	195	198	2,690	198	1,370	620
13	479	108	495	146	181	645	195	195	2,780	198	1,340	615
14	474	108	500	148	181	640	198	195	2,000	198	1,310	605
15	460	108	505	148	181	635	201	195	1,530	198	1,250	595
16	446	110	507	148	181	630	198	195	1,510	198	1,200	585
17	437	112	507	148	184	630	198	195	700	195	930	561
18	424	116	507	148	187	765	198	195	207	195	690	551
19	410	116	505	148	187	1,190	198	195	201	198	920	541
20	406	116	505	149	187	1,180	201	195	201	195	1,130	556
21	389	116	315	152	187	1,160	198	198	198	195	1,090	541
22	377	116	146	154	187	1,140	201	201	198	195	1,060	531
23	369	116	146	156	189	1,120	201	198	195	785	1,040	*527
24	361	116	146	157	189	1,100	201	195	195	1,160	1,000	522
25	381	116	144	157	189	1,090	198	195	195	1,130	960	512
26	385	116	144	157	189	1,070	195	198	198	1,100	930	498
27	373	114	144	159	192	1,040	198	201	198	1,080	900	488
28	365	245	144	159	192	1,030	195	198	195	1,060	872	470
29	389	114	144	159	192	1,010	198	192	195	1,040	834	460
30	250	114	144	167	-	1,000	195	187	192	1,030	828	380
31	101	-	141	162	-	984	-	187	-	1,400	796	-
Total	14,209	3,501	8,687	4,647	5,192	23,160	6,543	5,957	17,654	16,816	36,370	17,948
Mean	458	117	280	150	179	747	218	192	588	542	1,173	598
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1951: Max	1,860			Min 37		Mean 565		Cfsm -		In. -		
Water year 1951-52: Max	2,780			Min 37		Mean 439		Cfsm -		In. -		

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 13-15, Jan. 4-7, 9-19, Mar. 10, 11; discharge estimated on basis of recorded range in stage. Stage-discharge relation affected by ice Dec. 19-29, Jan. 21-23.

## St. Croix River near Baileyville, Maine

Location.--Lat 45°15'55", long. 67°28'35", in township of Baileyville, Washington County, on right bank 700 ft downstream from powerhouse of St. Croix Paper Co. at Grand Falls and 8 miles upstream from village of Woodland.

Drainage area.--1,320 sq mi, approximately.

Records available.--November 1919 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 148.8 ft above mean sea level, datum of 1929.

Average discharge.--33 years (1919-52), 2,158 cfs.

Extremes.--1921-22: Maximum discharge during water year, 7,900 cfs Aug. 29 (gage height, 5.88 ft); minimum daily, 425 cfs Feb. 15.

1951-52: Maximum discharge during water year, 8,650 cfs June 13 (gage height, 6.32 ft); minimum daily, 257 cfs July 6.

1919-52: Maximum discharge, about 23,300 cfs May 1, 1923 (gage height, 13.90 ft); minimum daily, 100 cfs (estimated) July 20, 1924, when plant was closed down.

Remarks.--Records excellent except those below 700 cfs, which are good. Flow regulated by Chiputneticook Lakes, Grand and other lakes (combined usable capacity, about 25,000,000,000 cu ft).

Revisions.--Revised figures of discharge for the water year 1922, superseding figures published in Water-Supply Paper 541, are given herewith.

Discharge, in cubic feet per second, water year October 1921 to September 1922

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	885	660	1,050	797	600	680	3,700	1,960	942	1,130	1,570	5,580
2	720	764	1,020	907	520	660	2,650	2,100	1,060	1,050	1,470	4,065
3	852	742	1,060	976	501	630	3,120	1,780	942	981	1,450	3,170
4	852	863	964	1,050	482	630	2,830	1,840	916	1,200	1,450	2,830
5	852	1,010	1,080	1,060	444	510	2,580	1,860	1,050	1,440	1,610	2,580
6	863	731	1,100	1,050	444	630	2,660	1,440	1,050	1,660	1,160	2,340
7	918	907	1,170	1,060	492	737	2,920	770	1,020	2,420	1,440	2,020
8	918	968	1,160	950	520	878	3,520	1,370	1,030	2,660	1,550	2,000
9	797	819	1,120	920	510	1,120	3,030	1,900	1,050	2,260	1,270	1,900
10	610	830	1,060	950	530	1,440	3,810	1,470	1,060	2,340	1,440	1,340
11	520	964	976	918	540	1,610	4,820	1,580	830	2,180	1,230	1,610
12	501	896	1,040	929	472	978	5,580	1,500	1,020	2,260	1,230	1,740
13	501	852	1,050	988	530	1,520	6,540	1,500	1,090	2,340	1,090	1,740
14	550	1,010	1,060	1,010	482	1,940	5,960	1,100	1,050	2,260	1,540	1,740
15	520	976	988	852	425	2,340	5,390	1,160	1,090	2,260	1,340	1,740
16	540	976	952	964	650	2,660	3,970	1,290	1,090	1,990	1,290	1,590
17	830	918	1,020	907	720	2,660	3,520	1,240	1,080	2,420	1,270	1,580
18	775	1,000	1,200	819	700	2,580	3,700	1,290	878	2,100	1,200	1,580
19	720	1,040	1,080	874	640	2,060	3,340	1,200	1,010	2,020	1,370	1,920
20	775	952	1,020	863	710	1,590	3,080	1,100	1,050	1,870	1,080	1,960
21	775	964	964	830	775	2,020	3,170	1,000	1,060	1,760	1,390	1,860
22	753	964	1,010	788	797	1,980	2,830	1,500	968	1,800	1,570	1,750
23	620	1,020	1,000	700	775	2,020	1,910	1,450	1,090	1,510	1,470	1,720
24	852	976	988	640	720	2,580	2,120	1,440	1,050	1,690	1,590	1,360
25	874	1,060	896	600	720	2,660	2,100	1,230	835	1,720	1,310	1,330
26	797	1,070	907	660	630	2,100	2,000	1,190	1,010	1,720	1,230	1,710
27	742	952	988	540	640	2,910	2,220	1,050	1,100	1,580	1,020	1,570
28	700	952	964	510	720	3,080	2,400	942	1,060	1,580	5,540	1,550
29	640	1,020	918	650	-	3,520	2,500	1,020	1,020	1,580	6,540	1,540
30	570	1,020	929	560	-	3,790	938	1,090	1,100	1,230	6,540	1,540
31	600	-	940	680	-	3,970	-	1,050	-	1,540	5,360	-
Total	22,422	27,896	31,654	26,000	16,689	58,483	98,908	42,412	30,581	56,551	59,210	60,950
Mean	723	930	1,020	839	596	1,890	3,300	1,370	1,020	1,820	1,910	2,030
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1921: Max	7,140			Min 501		Mean 1,760	Cfsm -		In. -			
Water year 1921-22: Max	6,540			Min 425		Mean 1,460	Cfsm -		In. -			

## ST. CROIX RIVER BASIN

## St. Croix River near Baileyville, Maine--Continued

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 13

June 14 to Sept. 30

1.3	1,070	0.3	267	1.1	795
1.4	1,160	.4	320	1.3	950
1.8	1,550	.5	380	1.6	1,190
2.3	2,090	.6	442	2.0	1,590
3.0	2,910	.7	508	2.5	2,140
5.0	6,100	.8	578	3.0	2,770
6.1	8,200	.9	648	4.5	5,020
		1.0	720	6.2	8,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,560	2,670	1,750	2,600	3,080	3,050	3,460	2,510	2,190	2,560	2,020	525
2	2,530	2,680	1,140	2,620	3,140	2,510	3,180	2,660	2,460	2,550	2,150	1,450
3	2,550	3,040	1,980	2,400	2,290	3,210	2,930	2,600	3,270	2,640	1,250	1,490
4	2,670	4,410	1,920	2,550	2,380	3,080	3,240	2,260	3,540	1,450	1,830	1,480
5	2,720	3,510	1,910	2,360	2,650	2,830	3,420	2,480	2,910	995	1,630	1,490
6	2,670	3,240	1,920	1,560	2,710	2,830	4,190	2,520	3,230	257	*1,950	1,480
7	2,140	*3,180	1,820	2,350	2,680	2,560	5,270	2,530	3,990	1,480	1,770	990
8	2,270	5,380	*1,720	2,670	2,640	3,260	5,060	2,490	5,050	2,450	1,980	1,720
9	2,660	6,420	1,270	2,660	2,640	2,670	5,080	2,520	5,990	2,510	1,810	1,530
10	2,730	5,520	1,900	2,670	3,000	3,340	5,080	2,500	5,660	2,540	1,200	1,540
11	*2,760	3,790	1,950	2,320	2,870	3,720	5,600	1,410	4,920	2,510	1,960	2,060
12	2,700	3,110	1,950	2,550	3,230	*4,200	5,900	2,440	5,920	2,420	1,810	2,270
13	2,780	2,740	1,950	1,380	3,440	4,280	4,920	2,590	8,200	1,440	1,930	2,320
14	2,260	2,670	1,900	2,440	3,430	4,500	4,700	2,600	8,220	1,800	1,820	1,350
15	1,840	2,670	1,890	2,570	3,460	4,330	6,180	2,520	6,950	2,430	1,920	1,640
16	1,790	2,490	1,870	2,590	3,440	4,310	7,230	2,520	5,560	2,380	1,900	1,470
17	1,940	2,660	1,570	2,610	2,710	4,240	7,230	2,590	4,500	2,330	1,220	1,570
18	1,920	*1,550	1,850	2,440	3,140	3,540	6,950	1,850	4,440	2,400	1,980	1,460
19	1,890	2,490	1,720	2,550	3,260	3,060	6,700	2,290	3,660	2,490	2,020	1,410
20	1,830	2,660	1,610	1,640	3,350	3,140	6,110	2,680	3,920	1,360	2,000	1,540
21	1,310	2,610	1,650	2,910	3,290	3,320	6,170	2,530	3,190	1,950	2,010	1,270
22	1,540	2,730	2,670	*3,020	3,520	3,360	5,810	2,260	1,540	2,310	1,810	1,170
23	1,530	2,700	2,270	4,070	3,480	2,830	5,840	2,730	2,320	2,160	1,940	*1,210
24	1,540	2,670	1,710	4,550	2,380	3,630	5,650	3,120	2,540	2,150	1,080	1,300
25	1,560	1,680	1,880	4,160	2,430	3,540	4,250	2,130	2,410	2,150	1,860	1,220
26	1,630	2,580	2,360	4,160	2,760	3,580	3,170	2,210	2,460	2,180	1,740	1,220
27	1,730	2,670	2,760	3,810	2,630	3,600	1,830	2,600	2,500	1,280	1,820	1,170
28	1,420	2,340	2,550	4,350	2,840	3,410	2,190	2,640	2,500	2,000	1,980	895
29	2,160	1,980	2,640	3,520	3,070	3,220	2,600	2,650	1,440	1,950	1,790	1,560
30	2,560	1,840	1,970	3,010	-	2,770	3,020	2,660	2,330	2,190	1,990	1,170
31	2,560	-	2,650	3,030	-	3,350	-	2,650	-	2,040	1,100	-
Total	66,750	90,690	60,700	88,120	85,940	105,270	142,960	75,740	117,810	63,332	55,270	42,970
Mean	2,153	3,023	1,958	2,843	2,963	3,396	4,765	2,443	3,927	2,043	1,783	1,432
Cfs/m	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1951: Max	14,000	Min	930	Mean	3,105	Cfs/m	-	In.	-			
Water year 1951-52: Max	8,220	Min	257	Mean	2,720	Cfs/m	-	In.	-			

\* Discharge measurement made on this day.

## St. Croix River at Spragues Falls, near Baring, Maine

Location.--Lat 45°10'00", long. 67°24'20", near right bank on downstream side of railroad bridge, 0.4 mile upstream from present dam of St. Croix Paper Co. at Woodland, Washington County.

Drainage area.--1,350 sq mi, approximately.

Records available.--December 1902 to September 1905 (discontinued).

Gage.--Chain gage. Altitude of gage is 130 ft (from topographic map).

Extremes.--1902-5: Maximum discharge, 14,600 cfs Apr. 12, 1904 (gage height, 12.50 ft); minimum, 525 cfs Oct. 11, 12, 1904 (gage height, 5.9 ft).

Remarks.--Flow regulated by Chiputneticook Lakes, Grand and other lakes (combined capacity, about 25,000,000,000 cu ft).

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1903, superseding figures published in Water-Supply Paper 97, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1903		1903		1903	
Jan. 6.....	1,890	Jan. 26.....	3,640	Feb. 15.....	2,440
7.....	1,890	27.....	3,240	16.....	2,440
8.....	1,780	28.....	3,080	17.....	2,440
9.....	1,720	29.....	2,920	18.....	2,380
10.....	1,660	30.....	2,780	19.....	2,380
11.....	1,780	31.....	2,710	20.....	2,510
12.....	1,950	Feb. 1.....	2,710	21.....	2,780
13.....	2,130	2.....	2,640	22.....	3,080
14.....	2,070	3.....	2,580	23.....	3,080
15.....	1,950	4.....	2,580	24.....	3,160
16.....	1,950	5.....	2,580	25.....	3,240
17.....	1,830	6.....	2,510	26.....	3,430
18.....	1,830	7.....	2,510	27.....	3,640
19.....	1,830	8.....	2,510	28.....	4,090
20.....	1,830	9.....	2,510	Mar. 1.....	4,090
21.....	2,260	10.....	2,440	2.....	3,860
22.....	2,780	11.....	2,440	3.....	3,740
23.....	2,920	12.....	2,440	4.....	3,640
24.....	3,240	13.....	2,440	5.....	3,640
25.....	3,640	14.....	2,440	6.....	3,860
				7.....	4,090

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
January 1903.....	3,640	1,660	2,330	1.73	1.99
February.....	4,090	2,380	2,730	2.02	2.10
March.....	10,935	3,640	6,800	5.04	5.81
Calendar year 1903.....	10,935	525	2,526	1.87	25.39

## MACHIAS RIVER BASIN

Machias River at Whitneyville, Maine

Location.--Lat 44°43'25", long. 67°31'15", on right bank 800 ft downstream from highway bridge at Whitneyville, Washington County.

Drainage area.--457 sq mi.

Records available.--October 1905 to September 1921, September 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 37.22 ft above mean sea level, datum of 1929, Oct. 1, 1905, to Sept. 30, 1921, staff and chain gages on highway bridge at different datum.

Average discharge.--39 years (1905-21, 1929-52), 936 cfs.

Extremes.--Maximum and minimum discharges for the water years 1910-15, 1952 and revised maximum discharges for water years 1909, 1916-21 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1909.....	Sept. 30, 1909	11,500	†14.75	-	-	-
1910.....	Oct. 1, 1909	*11,000	-	Sept. 10, 11, 1910	†105	-
1911.....	Mar. 30, 1911	4,800	†9.2	Aug. 14, 1911	†60	-
1912.....	June 1, 1912	5,730	†10.05	July 9-15, 1912	†132	-
1913.....	Oct. 25, 1912	6,500	†10.75	Many days	†191	-
1914.....	Apr. 10, 1914	5,790	†10.1	Sept. 28-30, 1914	†45	-
1915.....	May 3, 1915	7,020	†11.2	Oct. 1-3, 16-18, 1914	†30	-
1916.....	May 18, 1916	4,430	†8.8	-	-	-
1917.....	June 18, 1917	7,000	†11.0	-	-	-
1918.....	Apr. 23, 1918	6,010	†10.1	-	-	-
1919.....	May 27, 1919	5,800	†9.9	-	-	-
1920.....	Apr. 7, 1920	9,310	†13.1	-	-	-
1921.....	Dec. 16, 1920	4,580	†8.8	-	-	-
1952.....	Nov. 28, 1951	5,070	9.16	Aug. 1, 1952	39	2.60

\* Occurred 12:01 a.m. Oct. 1, 1909, stage falling; peak occurred Sept. 30, 1909.

† From graph based on gage readings.

\* Minimum daily discharge.

1905-21, 1929-52: Maximum discharge, 11,800 cfs Nov. 28, 1950 (gage height, 14.70 ft, from floodmarks), from rating curve extended above 5,200 cfs by logarithmic plotting; maximum gage height, 16.18 ft Mar. 14, 1936 (ice jam); minimum daily discharge, 3.5 cfs Oct. 12, 1939, when flow was held back by cofferdams during reconstruction of highway bridge upstream.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some storage in lakes above station.

Revisions (water years).--W 241: 1903-4. W 971: Drainage area. Revised figures of discharge, in cubic feet per second, for some periods in the water years 1907-15, superseding figures published in Water-Supply Papers 241, 261, 281, 301, 321, 351, 381, and 401, are given herein. Complete tables of daily discharge are given for the water years 1910-15, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1906		1908		1908		1909	
Dec. 22.....	1,070	Jan. 5.....	875	Dec. 22.....	336	Feb. 13.....	785
23.....	1,010	6.....	830	23.....	292	14.....	825
24.....	930	7.....	925	24.....	250	15.....	865
25.....	865	8.....	880	25.....	260	16.....	850
26.....	765	9.....	1,800	26.....	250	17.....	845
27.....	700	10.....	1,490	27.....	250	18.....	840
28.....	630	11.....	1,270	28.....	250	19.....	815
29.....	575	12.....	1,080	29.....	250	20.....	795
30.....	545	13.....	1,130	30.....	250	21.....	875
31.....	530	14.....	1,290	31.....	250	22.....	1,140
		Feb. 16.....	1,290			23.....	1,480
		17.....	2,920			24.....	1,800
1907		18.....	2,120	1909		25.....	2,120
Jan. 1.....	670	19.....	1,720	Jan. 25.....	547	26.....	2,470
2.....	1,190	20.....	1,550	26.....	520	27.....	2,810
3.....	1,070	21.....	1,550	27.....	475	28.....	2,650
4.....	985	Mar. 16.....	1,890	28.....	435	29.....	2,380
5.....	950	17.....	2,920	29.....	410	30.....	2,200
6.....	925	18.....	1,890	30.....	385	31.....	1,970
7.....	875	19.....	1,500	31.....	375		1,780
8.....	815	20.....	1,360	Feb. 1.....	370	4.....	1,580
9.....	740	21.....	1,280	2.....	370	5.....	1,470
10.....	655	22.....	1,280	3.....	370	6.....	1,380
Dec. 29.....	1,280	Dec. 13.....	755	4.....	375	7.....	1,300
30.....	1,210	14.....	755	5.....	370	8.....	1,240
31.....	1,130	15.....	698	6.....	365	9.....	1,190
		16.....	642	7.....	405	10.....	1,140
1908		17.....	587	8.....	430	11.....	1,100
Jan. 1.....	1,070	18.....	534	9.....	440	12.....	1,040
2.....	1,010	19.....	482	10.....	440		
3.....	950	20.....	431	11.....	505		
4.....	925	21.....	382	12.....	630		

## Machias River at Whitneyville, Maine--Continued

Revised figures of monthly discharge, in cubic feet per second, 1906-9

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1906.....	1,070	382	576	1.26	1.45
Calendar year 1906..	5,460	10	1,030	2.25	30.73
January 1907.....	1,190	420	608	1.33	1.53
Water year 1906-7...	5,020	10	871	1.91	25.82
December 1907.....	2,650	587	1,310	2.87	3.31
Calendar year 1907..	5,020	138	1,010	2.21	30.05
January 1908.....	1,800	485	903	1.98	2.28
February.....	2,920	755	1,050	2.30	2.48
March.....	3,100	935	1,470	3.22	3.71
Water year 1907-8...	4,180	77	1,090	2.39	32.40
December 1908.....	1,070	260	483	1.06	1.22
Calendar year 1908..	4,080	77	915	2.00	27.26
January 1909.....	5,680	250	993	2.17	2.50
February.....	2,180	370	970	2.12	2.21
March.....	8,160	587	1,860	4.07	4.69
August.....	-	-	272	.573	.66
Water year 1908-9...	11,100	-	1,200	2.63	35.85

Discharge, in cubic feet per second, water year October 1909 to September 1910

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,570	698	1,490	655	1,800	740	1,070	3,480	1,280	1,070	433	191
2	6,010	642	1,350	650	1,460	780	1,070	3,380	1,210	1,070	387	161
3	3,580	587	1,210	640	1,140	825	1,070	3,280	1,140	1,280	343	161
4	2,290	937	1,140	640	935	865	1,070	3,180	1,070	1,490	387	161
5	1,720	1,000	1,070	635	875	900	1,070	2,740	1,000	1,800	433	161
6	1,280	1,070	1,070	630	785	925	1,070	2,290	937	1,420	482	161
7	1,000	1,000	1,070	625	700	935	1,140	1,880	937	1,070	482	161
8	814	937	1,070	610	725	3,580	1,140	1,490	937	937	482	332
9	698	937	1,070	600	640	3,190	1,140	1,280	937	1,070	433	118
10	587	875	937	585	585	2,290	1,140	1,280	1,000	1,070	343	105
11	534	814	814	565	535	1,560	1,070	1,210	1,000	875	343	105
12	482	755	875	535	510	1,320	1,000	1,070	1,000	642	300	132
13	482	755	937	515	480	1,210	937	1,070	1,000	587	260	161
14	482	1,000	1,000	510	460	1,120	937	1,490	1,000	534	224	161
15	534	1,490	1,070	490	435	1,070	1,000	1,880	1,000	482	224	161
16	642	1,640	1,140	480	410	1,010	1,070	2,200	1,000	482	191	161
17	642	1,720	1,210	480	410	980	1,070	2,650	1,000	433	191	161
18	642	1,800	1,070	490	400	950	1,140	2,920	937	387	191	161
19	642	1,800	937	490	410	935	1,350	3,010	937	387	224	191
20	614	1,720	875	510	410	937	1,960	2,920	968	365	224	224
21	614	1,350	814	755	420	937	3,380	2,830	1,000	343	224	260
22	587	1,070	755	935	430	1,000	2,650	2,650	1,040	343	224	300
23	587	814	755	1,560	435	1,070	2,650	2,470	1,070	343	208	343
24	587	698	755	2,650	435	1,070	2,650	2,290	1,210	387	191	343
25	875	698	755	1,560	445	1,070	2,650	2,120	1,280	433	191	343
26	1,000	3,190	698	1,310	470	1,140	2,650	1,960	1,210	482	191	387
27	1,000	5,020	698	1,210	535	1,210	3,100	1,800	1,210	534	191	387
28	937	3,580	700	1,140	670	1,140	3,580	1,640	1,140	482	191	482
29	875	2,650	695	1,140	-	1,070	3,680	1,490	1,070	482	191	642
30	814	1,800	670	1,280	-	1,070	3,680	1,350	1,070	482	191	642
31	755	-	660	2,120	-	1,070	-	1,380	-	482	191	-
Total	41,876	43,047	29,350	26,995	17,945	37,969	53,184	66,680	31,590	22,244	8,764	7,259
Mean	1,350	1,430	947	871	641	1,220	1,770	2,150	1,050	718	283	242
Cfs/m	2.95	3.13	2.10	1.91	1.40	2.67	3.87	4.70	2.30	1.57	0.619	0.530
In.	3.40	3.49	2.42	2.20	1.46	3.08	4.32	5.42	2.57	1.81	0.71	0.59
Calendar year 1909: Max	11,100			Min -				Cfs/m 3.09		In. 41.79		
Water year 1909-10: Max	9,570			Min 105			Mean 1,060	Cfs/m 2.32		In. 31.47		

Note.--Stage-discharge relation affected by ice Dec. 28 to Mar. 29.

## Machias River at Whitneyville, Maine--Continued

Discharge, in cubic feet per second, water year October 1910 to September 1911

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	587	107	300	642	80	178	3,010	1,720	1,560	1,070	178	161
2	387	107	387	814	80	170	2,200	1,720	1,580	937	141	161
3	300	107	343	1,000	83	160	1,800	1,640	1,490	755	124	161
4	260	107	343	1,250	94	156	1,420	1,560	1,560	642	107	191
5	224	107	300	1,210	108	148	1,070	1,490	1,640	534	107	224
6	224	107	280	937	178	140	1,420	1,420	1,720	482	107	260
7	178	107	224	698	260	138	1,800	1,420	1,800	387	107	280
8	141	107	191	587	320	134	1,800	1,490	2,040	300	107	280
9	141	107	161	510	345	128	1,800	1,560	2,000	260	94	224
10	141	141	132	435	350	120	1,720	1,560	2,290	224	80	224
11	124	141	105	410	350	108	1,640	1,560	2,120	224	80	224
12	107	141	105	385	345	108	1,560	1,490	1,960	224	80	224
13	107	141	105	365	345	108	1,490	1,420	1,800	224	80	224
14	107	141	105	345	355	102	1,350	1,350	1,800	224	80	224
15	80	141	105	345	315	99	2,200	1,280	1,800	208	80	224
16	80	141	105	345	295	94	2,650	1,210	1,720	191	107	224
17	80	124	105	345	280	134	2,470	1,140	1,640	161	141	224
18	80	107	105	345	270	188	2,290	1,070	1,490	132	178	224
19	107	107	93	335	260	220	1,960	875	1,350	105	300	260
20	107	107	81	300	260	250	1,720	755	1,280	105	300	343
21	107	107	105	260	250	250	1,490	698	1,210	105	300	343
22	107	107	105	230	240	260	1,420	755	1,140	105	260	343
23	107	107	105	200	235	270	1,420	814	1,070	105	260	343
24	107	107	105	170	220	270	1,280	875	1,000	105	260	343
25	107	107	534	140	215	290	1,210	937	875	224	260	300
26	107	107	1,070	118	200	300	1,140	1,000	698	224	224	260
27	107	107	875	108	188	300	1,210	1,070	587	224	178	224
28	107	141	755	192	178	814	1,350	1,140	482	224	141	224
29	107	178	642	91	-	2,560	1,560	1,280	482	224	141	260
30	107	224	534	85	-	4,580	1,640	1,420	2,560	224	141	260
31	107	-	587	80	-	3,880	-	1,490	-	224	141	-
Total	4,739	3,687	9,072	13,287	6,879	16,657	51,090	39,209	44,924	9,377	4,884	7,427
Mean	153	123	293	429	239	537	1,700	1,260	1,500	302	158	247
Cfsm	0.335	0.289	0.641	0.939	0.523	1.18	3.72	2.76	3.28	0.661	0.346	0.540
In.	0.39	0.30	0.74	1.08	0.54	1.36	4.15	3.18	3.68	0.76	0.40	0.60

Calendar year 1910: Max 3,680 Min 80 Mean 795 Cfsm 1.74 In. 23.59

Water year 1910-11: Max 4,580 Min 60 Mean 578 Cfsm 1.26 In. 17.16

Note.--Stage-discharge relation affected by ice Jan. 9 to Mar. 26.

Discharge, in cubic feet per second, water year October 1911 to September 1912

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	260	191	1,070	535	300	745	2,470	2,200	5,680	191	300	387
2	260	191	875	480	300	700	2,200	2,120	5,020	191	482	387
3	260	191	642	460	300	640	1,880	1,960	4,580	191	587	343
4	224	161	642	425	300	630	1,640	1,800	4,280	191	642	322
5	224	161	642	395	290	585	1,490	1,880	3,980	191	642	300
6	208	161	698	375	280	585	1,350	1,960	3,580	161	534	300
7	191	161	755	315	270	560	1,210	2,040	3,100	161	433	300
8	191	191	755	315	260	550	1,180	2,120	2,650	161	387	300
9	191	224	814	385	260	535	1,140	2,120	2,200	132	343	300
10	534	260	875	385	260	535	1,140	1,800	2,040	132	343	300
11	433	300	755	375	260	535	1,100	1,560	1,960	132	343	300
12	482	300	698	375	255	580	1,070	1,640	1,880	132	343	300
13	433	260	642	375	250	585	1,000	1,640	1,800	132	343	300
14	300	224	534	375	240	1,490	1,000	1,640	1,800	132	387	300
15	224	482	482	365	230	2,200	1,070	1,640	1,640	132	387	300
16	161	814	433	365	220	4,180	1,140	1,800	1,490	260	387	300
17	132	1,000	387	360	220	5,680	1,210	2,290	1,350	433	365	322
18	132	1,000	343	365	220	4,690	1,280	2,830	2,280	433	343	343
19	132	937	315	410	220	3,780	1,350	1,800	1,000	433	343	343
20	132	875	300	460	240	3,240	1,800	1,840	814	433	343	387
21	132	698	295	490	280	2,880	2,650	1,210	642	534	343	433
22	161	587	295	510	385	2,340	2,920	875	482	587	343	433
23	161	482	310	480	640	1,920	3,480	587	300	642	343	482
24	191	387	815	460	1,100	1,680	3,880	587	260	698	343	387
25	191	387	2,380	435	1,040	1,460	3,580	937	224	698	365	343
26	191	387	1,490	410	950	1,280	3,380	1,000	224	642	387	300
27	191	387	1,040	385	875	1,210	3,010	1,000	224	534	410	260
28	191	387	845	380	815	1,210	2,740	1,000	208	387	433	260
29	191	755	745	350	785	1,800	2,470	1,000	208	300	433	260
30	191	1,280	670	335	-	2,830	2,290	2,560	191	260	433	260
31	191	-	600	310	-	3,010	-	4,800	-	260	387	-
Total	7,086	13,821	22,142	12,440	12,045	54,625	58,120	54,036	55,087	9,898	12,497	9,852
Mean	229	461	714	401	415	1,760	1,940	1,740	1,840	319	403	328
Cfsm	0.501	1.01	1.56	0.877	0.908	3.65	4.25	3.81	4.03	0.698	0.882	0.718
In.	0.58	1.13	1.80	1.01	0.98	4.44	4.74	4.39	4.50	0.80	1.02	0.80

Calendar year 1911: Max 4,580 Min 60 Mean 648 Cfsm 1.42 In. 19.24

Water year 1911-12: Max 5,680 Min 132 Mean 879 Cfsm 1.92 In. 26.19

Note.--Stage-discharge relation affected by ice Dec. 19 to Mar. 27.



## Machias River at Whitneyville, Maine--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	1,350	755	2,340	655	480	2,200	1,210	3,780	260	300	300
2	343	1,490	814	2,650	723	500	2,180	1,280	3,580	242	300	280
3	387	1,640	937	2,830	715	515	2,200	1,420	3,100	224	280	224
4	433	1,560	1,490	2,960	680	520	2,470	1,640	2,740	191	260	191
5	482	1,280	1,350	3,100	650	510	2,650	1,800	2,470	191	260	191
6	482	1,070	1,280	2,380	625	500	2,740	2,040	1,960	191	224	191
7	482	937	1,210	2,270	625	490	2,830	2,380	1,490	191	224	224
8	433	1,280	1,070	2,200	615	490	2,920	2,470	1,140	191	224	260
9	387	2,850	1,000	1,880	590	490	2,040	2,560	1,000	191	224	300
10	343	4,690	937	1,620	585	485	1,800	2,650	937	191	224	300
11	300	3,380	875	1,380	575	480	1,420	2,740	875	191	224	300
12	260	2,290	755	1,230	570	480	1,490	2,560	814	208	224	300
13	260	1,960	698	1,130	570	480	1,800	2,380	698	224	224	300
14	224	1,720	642	1,040	565	480	2,830	2,120	587	260	191	300
15	224	1,560	587	955	560	630	2,650	1,960	482	260	191	300
16	224	1,490	534	920	545	2,060	2,380	1,800	482	260	191	300
17	260	1,420	534	885	540	2,810	1,880	1,720	482	260	191	300
18	300	1,350	534	885	535	2,360	1,420	1,640	482	260	191	300
19	343	1,280	937	935	525	2,200	1,720	1,490	458	260	191	300
20	343	1,210	2,200	1,140	515	2,580	2,120	1,560	433	300	191	300
21	343	1,070	1,960	1,420	510	3,780	1,960	1,640	433	300	191	300
22	343	1,000	1,350	1,310	505	3,100	1,800	1,720	433	343	224	343
23	343	937	1,280	1,270	500	2,600	1,780	1,800	387	387	260	433
24	433	875	1,210	1,080	500	2,560	1,880	1,960	343	433	300	482
25	2,040	1,070	1,170	1,080	490	3,460	2,470	2,120	343	482	300	587
26	6,340	1,560	1,170	1,000	480	4,580	2,380	2,200	343	482	343	642
27	5,350	1,420	1,170	875	480	3,980	2,290	2,290	300	482	343	698
28	3,880	1,140	1,210	795	480	5,900	2,120	2,290	300	433	343	482
29	3,010	1,000	1,270	720	-	4,580	1,800	2,650	260	387	322	387
30	1,720	875	1,370	680	-	3,580	1,490	3,580	260	343	300	300
31	1,280	-	1,640	655	-	2,560	-	4,180	-	300	300	-
Total	31,692	46,734	33,939	45,715	15,910	60,260	63,590	65,850	31,192	8,918	7,755	10,095
Mean	1,030	1,560	1,090	1,470	568	1,940	2,120	2,120	1,040	288	250	336
Cfsm	2.25	3.41	2.39	3.22	1.24	4.25	4.64	4.64	2.28	0.63	0.547	0.735
In.	2.59	3.80	2.76	3.71	1.29	4.90	5.18	5.35	2.54	0.73	0.63	0.82

Calendar year 1912: Max 6,340 Min 132 Mean 1,070 Cfsm 2.34 In. 31.74  
 Water year 1912-13: Max 6,340 Min 191 Mean 1,160 Cfsm 2.53 In. 34.30

Note.--Stage-discharge relation affected by ice Dec. 25 to Mar. 23.

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	260	937	642	310	1,000	140	1,560	2,380	1,960	360	534	433
2	224	755	642	305	970	435	2,290	2,200	1,960	300	587	433
3	208	698	670	300	935	1,420	3,100	2,120	2,120	300	587	458
4	300	642	698	300	905	2,120	2,830	1,960	2,650	300	587	482
5	387	642	755	290	875	2,200	2,290	1,880	3,580	300	587	482
6	433	698	755	285	845	2,380	1,640	1,800	3,280	300	587	387
7	433	670	814	280	815	2,080	1,490	1,800	1,720	300	587	260
8	387	698	2,200	280	785	1,840	1,490	1,880	1,070	322	587	178
9	343	875	2,650	275	755	3,560	3,100	1,960	1,000	343	534	141
10	343	1,070	1,680	270	700	1,420	5,680	2,200	937	365	482	141
11	343	1,070	1,560	270	650	1,350	5,350	2,380	814	387	482	141
12	343	1,140	1,210	265	615	1,280	3,980	2,560	698	433	458	141
13	875	1,140	937	265	585	1,210	3,480	2,830	642	482	433	141
14	1,280	1,070	875	260	535	1,200	3,010	2,650	642	482	587	141
15	2,200	1,000	814	260	460	1,140	2,560	2,470	642	482	543	141
16	1,880	937	698	260	385	1,140	2,200	2,200	587	458	343	124
17	1,420	875	587	260	345	1,210	1,800	1,960	587	387	343	107
18	1,280	814	534	260	300	1,310	2,040	1,880	587	410	343	107
19	1,210	755	482	260	270	1,490	2,470	1,800	534	343	343	107
20	1,140	698	482	260	230	2,120	3,010	2,290	482	300	343	107
21	1,140	814	482	260	210	2,020	5,570	2,290	482	300	343	94
22	1,175	1,000	482	250	175	1,860	5,460	2,200	482	300	343	80
23	1,210	937	482	260	160	1,640	4,690	2,040	433	322	322	60
24	1,280	875	482	320	140	1,420	3,780	1,960	433	343	300	60
25	1,350	814	482	460	140	1,280	3,380	1,960	433	387	280	60
26	1,420	755	482	700	140	1,210	2,920	2,040	387	433	260	60
27	1,800	698	482	875	140	1,420	2,560	2,040	343	433	260	60
28	2,470	642	433	935	140	1,600	2,290	1,960	300	458	300	45
29	2,120	642	387	1,000	-	1,720	2,290	1,960	300	482	343	45
30	1,800	642	387	1,070	-	1,640	2,290	1,960	300	482	387	45
31	1,350	-	387	1,040	-	1,560	-	1,960	-	482	433	-
Total	32,404	25,003	24,853	12,685	14,203	46,615	90,600	65,570	30,585	11,716	13,048	5,261
Mean	1,040	833	802	409	507	1,500	3,020	2,120	1,010	378	421	175
Cfsm	2.28	1.82	1.75	0.895	1.11	3.28	6.61	4.64	2.21	0.827	0.921	0.383
In.	2.63	2.03	2.02	1.03	1.15	3.78	7.38	5.35	2.47	0.95	1.06	0.43

Calendar year 1913: Max 5,900 Min 191 Mean 1,070 Cfsm 2.34 In. 31.83  
 Water year 1913-14: Max 5,680 Min 45 Mean 1,020 Cfsm 2.23 In. 30.29

Note.--Stage-discharge relation affected by ice Jan. 1 to Mar. 25.

## MACHIAS RIVER BASIN

## Machias River at Whitneyville, Maine--Continued

Discharge, in cubic feet per second, water year October 1914 to September 1915

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	692	412	220	310	875	221	3,880	1,710	517	626	412
2	30	571	412	210	285	840	221	5,780	1,490	517	626	362
3	30	517	412	190	270	510	221	6,780	1,360	517	1,040	314
4	51	464	517	170	270	460	267	6,120	1,230	464	981	267
5	77	412	626	170	260	395	267	4,480	1,100	464	920	267
6	107	362	517	170	290	365	267	2,980	1,100	517	860	267
7	107	314	464	260	365	345	517	2,980	1,100	517	800	267
8	77	267	412	565	585	320	740	3,080	1,040	517	740	267
9	51	267	362	535	535	315	740	3,180	981	2,620	682	267
10	51	267	314	470	435	310	740	3,380	981	5,130	682	267
11	51	221	267	400	380	300	740	3,280	950	3,580	626	267
12	51	178	267	350	320	290	1,100	2,620	920	2,270	571	267
13	51	141	267	310	290	290	1,710	2,180	860	1,360	517	314
14	51	107	267	270	250	275	1,360	1,940	626	1,230	464	362
15	51	107	800	235	210	260	1,360	1,640	412	1,100	412	412
16	30	517	740	210	385	250	1,360	1,490	517	981	412	412
17	30	1,490	626	188	755	250	1,360	1,360	517	860	412	412
18	30	1,170	464	170	585	240	1,290	1,360	517	860	387	412
19	51	800	362	1,640	480	235	1,230	1,360	464	860	362	412
20	178	740	362	2,120	385	225	1,100	1,490	464	800	562	412
21	362	740	362	1,210	320	220	1,040	1,710	1,100	740	362	362
22	571	676	362	905	270	220	981	1,860	1,040	682	412	314
23	571	517	362	815	220	220	981	2,100	981	740	517	267
24	571	464	362	755	585	220	981	2,360	981	740	571	221
25	517	464	362	710	1,560	221	1,230	2,360	920	682	626	221
26	464	464	362	685	2,040	221	1,430	2,270	920	626	571	267
27	464	464	314	630	1,720	221	1,560	2,180	860	626	517	362
28	517	464	267	575	1,420	221	1,640	2,100	800	626	464	362
29	517	412	267	535	-	221	1,640	2,100	740	626	464	314
30	626	412	267	480	-	221	1,940	2,100	626	626	464	267
31	800	-	314	345	-	221	-	1,940	-	626	412	-
Total	7,165	14,671	12,471	16,518	15,780	9,577	30,234	85,440	27,307	33,021	17,862	9,586
Mean	231	469	402	535	564	309	1,000	2,760	910	1,070	576	320
Cfs/m	0.505	1.07	0.880	1.17	1.23	0.676	2.19	6.04	1.99	2.34	1.26	0.700
In.	0.58	1.19	1.01	1.35	1.28	0.78	2.44	6.96	2.22	2.70	1.45	0.78
Calendar year 1914: Max	6,780					Mean	889		Cfs/m	1.95	In.	26.39
Water year 1914-15: Max	6,780					Mean	766		Cfs/m	1.68	In.	22.74

Note.--Stage-discharge relation affected by ice Jan. 1 to Mar. 24.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	378	1,160	1,040	1,680	2,470	1,040	1,210	1,240	646	472	41	122
2	340	877	1,010	1,650	2,220	1,020	1,270	1,460	1,020	458	59	140
3	305	1,410	1,070	1,570	1,960	1,080	1,570	1,740	2,470	413	99	157
4	286	3,280	1,120	1,470	1,760	975	1,820	1,850	2,020	389	115	200
5	264	3,110	1,090	1,390	1,950	813	1,800	1,970	1,460	362	*138	203
6	254	2,220	1,100	1,320	2,820	821	2,440	1,950	1,160	345	192	210
7	238	1,670	1,800	1,280	*2,510	885	3,180	1,980	1,240	330	214	157
8	407	3,650	2,430	1,320	2,040	861	2,710	2,020	1,320	242	200	148
9	*1,210	4,890	2,320	1,360	1,700	821	2,170	1,850	1,140	182	169	148
10	1,290	3,700	1,950	1,280	1,480	773	1,950	1,910	1,080	230	148	148
11	1,110	2,430	1,600	1,170	1,350	*765	1,970	1,940	877	250	160	89
12	934	1,840	1,370	1,030	1,910	1,690	1,980	2,460	1,140	254	196	78
13	1,230	1,510	1,170	915	2,770	2,910	1,980	3,080	1,600	254	206	108
14	1,290	1,210	950	850	2,510	2,720	2,110	2,730	1,470	246	206	118
15	1,180	1,190	950	750	2,000	2,090	3,210	2,150	1,230	230	186	118
16	740	1,490	780	965	1,610	1,490	3,480	1,980	1,090	214	157	128
17	677	1,680	750	1,300	1,330	1,220	3,100	1,690	909	206	415	122
18	685	1,750	700	1,650	1,280	1,080	2,710	1,170	845	196	781	120
19	631	1,530	685	1,920	1,100	976	2,350	590	837	189	677	157
20	572	1,240	700	2,120	1,320	925	2,050	160	789	186	410	760
21	535	1,060	1,370	2,510	1,260	984	1,910	765	741	178	250	959
22	514	950	3,120	2,860	1,220	1,120	1,810	1,080	693	175	239	662
23	493	901	3,290	3,120	1,170	1,360	*1,750	1,200	572	175	128	500
24	235	909	2,510	3,130	1,160	1,320	1,750	1,080	459	172	113	350
25	500	1,140	1,830	3,360	1,120	1,180	1,820	909	432	169	125	320
26	1,890	1,280	1,580	3,120	1,080	1,140	1,730	781	458	163	135	156
27	1,810	1,660	1,370	3,240	1,040	*1,170	1,420	1,030	479	157	132	140
28	1,360	2,200	1,190	3,400	1,030	1,240	1,240	1,080	521	160	125	175
29	1,290	1,630	1,060	3,600	1,030	1,270	1,240	829	466	154	120	175
30	1,600	1,260	960	3,340	-	1,210	1,250	741	458	148	122	169
31	1,370	-	1,080	2,980	-	1,160	-	701	-	93	120	-
Total	25,717	54,787	43,905	62,260	48,200	38,089	60,900	46,076	29,722	7,392	6,377	7,064
Mean	830	1,826	1,416	2,008	1,662	1,229	2,030	1,466	991	238	206	235
Cfs/m	1.82	4.00	3.10	4.39	3.64	2.69	4.44	3.25	2.17	0.521	0.451	0.514
In.	2.10	4.46	3.57	5.06	3.93	3.10	4.95	3.75	2.42	0.60	0.52	0.57
Calendar year 1951: Max	5,550					Mean	1,239		Cfs/m	2.71	In.	36.80
Water year 1951-52: Max	4,890					Mean	1,176		Cfs/m	2.57	In.	35.03

Peak discharge (base 3,200 cfs).--Nov. 5 (2:30 a.m.) 3,560 cfs (7.50 ft); Nov. 9 (6 a.m.) 5,070 cfs (9.16 ft); Nov. 28 (1:30 a.m.) 4,190 cfs (8.20 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 3-5, Dec. 13 to Mar. 4 (no gage-height record Jan. 10-20, 24, 25, Jan. 29 to Feb. 6; discharge estimated on basis of weather records and records for stations at East Machias).

## East Machias River near East Machias, Maine

Location.--Lat 44°46'05", long. 67°24'30", on left bank just downstream from outlet of Hadley Lake and 3 miles upstream from East Machias, Washington County.

Drainage area.--251 sq mi.

Records available.--October 1926 to September 1952.

Gage.--Staff gage and crest-stage indicator; gage read once daily. Datum of gage is 34.9 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1950, at datum 1.00 ft higher.

Average discharge.--25 years (1927-52), 500 cfs.

Extremes.--Maximum discharge during year, 1,960 cfs Nov. 11 (gage height, 6.76 ft); minimum, 37 cfs Sept. 18 (gage height, 1.36 ft).  
1929-52: Maximum discharge, 3,660 cfs Dec. 15, 1950 (gage height, 9.05 ft); minimum, 8.4 cfs Nov. 8, 1947 (gage height, 0.65 ft, present datum).

Remarks.--Records good.

Revisions.--W 971: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1928-30, superseding figures published in Water-Supply Papers 661, 681 and 696, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1928		1928		1928		1929	
Aug. 1.....	192	Sept. 9.....	112	Oct. 18.....	148	Sept. 24.....	141
2.....	184	10.....	108	19.....	157	25.....	136
3.....	180	11.....	104	20.....	168	26.....	132
4.....	175	12.....	103	21.....	189	27.....	125
5.....	166	13.....	108	22.....	193	28.....	119
6.....	160	14.....	116	23.....	205	29.....	112
7.....	155	15.....	115	24.....	246	30.....	110
8.....	155	16.....	117	25.....	260	Oct. 1.....	106
9.....	159	17.....	120	26.....	278	2.....	112
10.....	164	18.....	124	27.....	288	3.....	120
11.....	163	19.....	125	28.....	283	4.....	136
12.....	169	20.....	124	29.....	306	5.....	141
13.....	162	21.....	131	30.....	303	6.....	142
14.....	162	22.....	136	31.....	295	7.....	143
15.....	160	23.....	133			8.....	149
16.....	157	24.....	131			9.....	138
17.....	153	25.....	131	1929		10.....	136
18.....	151	26.....	143	Sept. 1.....	89	11.....	127
19.....	152	27.....	152	2.....	84	12.....	122
20.....	147	28.....	186	3.....	79	13.....	118
21.....	145	29.....	156	4.....	74	14.....	116
22.....	141	30.....	156	5.....	71	15.....	111
23.....	140	Oct. 1.....	170	6.....	69	16.....	107
24.....	140	2.....	176	7.....	69	17.....	103
25.....	140	3.....	176	8.....	69	18.....	102
26.....	140	4.....	134	9.....	69	19.....	94
27.....	139	5.....	130	10.....	74	20.....	94
28.....	136	6.....	176	11.....	74	21.....	89
29.....	136	7.....	176	12.....	72	22.....	88
30.....	135	8.....	172	13.....	68	23.....	88
31.....	133	9.....	154	14.....	75	24.....	112
Sept. 1.....	130	10.....	158	15.....	84	25.....	127
2.....	124	11.....	158	16.....	88	26.....	143
3.....	123	12.....	156	17.....	89	27.....	160
4.....	124	13.....	156	18.....	115	28.....	172
5.....	121	14.....	155	19.....	136	29.....	172
6.....	119	15.....	148	20.....	144	30.....	170
7.....	115	16.....	143	21.....	152	31.....	170
8.....	112	17.....	140	22.....	148		
				23.....	143		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
August 1928.....	192	133	155	0.618	0.71
September.....	166	103	127	.506	.56
Water year 1927-28.....	1,910	103	638	2.54	34.59
October 1928.....	306	140	197	.785	.90
Calendar year 1928.....	1,910	103	491	1.96	26.61
September 1929.....	152	68	100	.398	.44
Water year 1928-29.....	2,140	64	543	2.16	29.35
October 1929.....	172	88	126	.502	.58
Calendar year 1929.....	2,140	64	522	2.08	28.23
Water year 1929-30.....	2,060	25	428	1.71	23.17

## MACHIAS RIVER BASIN

## East Machias River near East Machias, Maine--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	29	3.0	310
1.2	34	4.0	595
1.6	69	5.0	1,010
2.0	124	6.0	1,500
2.5	208	7.0	2,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	392	617	1,050	1,100	1,720	559	693	900	588	324	67	62
2	387	662	996	1,130	1,570	531	705	840	621	300	65	69
3	372	749	940	1,120	1,490	504	785	789	725	290	64	69
4	357	1,010	892	1,100	1,390	479	883	745	761	270	61	64
5	343	1,110	848	1,060	1,360	461	940	701	785	265	*57	59
6	328	*1,190	806	1,010	1,450	453	1,150	659	777	245	70	57
7	305	1,200	818	972	*1,420	444	1,300	617	806	225	82	54
8	324	1,570	831	945	1,360	433	1,380	595	831	215	80	49
9	397	1,800	*823	*874	1,300	425	1,400	559	814	205	75	47
10	*420	1,910	814	806	1,230	415	1,420	524	814	196	71	46
11	450	1,960	797	773	1,160	*405	1,440	538	*777	186	73	46
12	461	1,920	781	733	1,180	475	1,450	548	781	178	75	44
13	435	1,860	757	686	1,200	710	1,420	573	799	172	69	43
14	417	1,790	717	655	1,230	850	1,400	610	789	164	70	40
15	400	1,750	701	625	1,190	850	1,460	610	789	154	68	38
16	392	1,660	686	662	1,150	814	1,540	617	765	148	64	40
17	364	1,670	678	705	1,090	781	1,540	632	741	146	70	38
18	343	1,630	662	814	1,030	757	1,550	632	721	136	96	37
19	328	1,540	655	918	1,000	733	1,540	625	670	130	138	47
20	310	1,440	647	1,010	918	701	1,520	595	647	128	138	60
21	292	1,370	823	1,150	865	655	1,460	610	595	120	132	74
22	278	1,350	1,160	1,190	808	662	1,390	617	552	110	128	*89
23	263	1,260	1,270	1,290	781	670	1,380	614	504	110	122	94
24	247	1,170	1,300	1,790	749	674	*1,300	602	479	110	116	98
25	289	1,140	1,330	1,860	717	674	1,180	588	455	100	98	100
26	338	1,160	1,300	1,680	686	659	1,130	602	433	90	93	97
27	372	1,200	1,260	1,500	647	662	1,070	617	412	86	88	97
28	397	1,170	1,200	1,910	617	670	1,020	602	392	80	82	97
29	479	1,150	1,140	1,910	588	678	982	588	364	77	79	91
30	524	1,100	1,090	1,920	-	678	963	566	338	73	85	91
31	573	-	1,100	1,850	-	678	-	552	-	69	68	-
Total	11,575	41,088	28,872	35,748	31,894	19,140	37,391	19,467	19,515	5,102	2,642	1,937
Mean	373	1,370	931	1,153	1,100	617	1,246	628	650	165	85.2	84.6
Cfsm	1.49	5.46	3.71	4.59	4.38	2.46	4.96	2.50	2.59	0.657	0.339	0.257
In.	1.72	6.09	4.28	5.29	4.72	2.84	5.53	2.88	2.89	0.76	0.39	0.29
Calendar year 1951: Max	2,020			Min	180	Mean	725	Cfsm	2.89	In.	39.24	
Water year 1951-52: Max	1,960			Min	37	Mean	695	Cfsm	2.77	In.	37.68	

\* Discharge measurement made on this day.

## Narraguagus River at Cherryfield, Maine

Location.--Lat 44°36'30", long. 67°56'15", on left bank at Cherryfield, Washington County, 800 ft upstream from railroad bridge and 0.7 mile downstream from mouth of West Branch of Narraguagus River.

Drainage area.--232 sq mi.

Records available.--February 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 44.2 ft above mean sea level, datum of 1929. Prior to July 1, 1948, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 3,440 cfs Jan. 23 (gage height, 13.22 ft); minimum, 42 cfs Aug. 4 (gage height, 7.25 ft).  
1948-52: Maximum discharge, 7,250 cfs Nov. 28, 1950 (gage height, 15.81 ft); minimum, 33 cfs Sept. 17, 1948 (gage height, 7.15 ft).

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

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

7.2	37	8.9	392
7.4	57	9.4	578
7.6	82	10.4	1,070
7.9	129	11.5	1,830
8.2	192	12.7	2,900
8.5	270		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	214	633	599	720	676	386	759	542	360	170	47	49
2	185	586	546	755	601	373	778	491	1,080	164	45	89
3	168	1,250	518	700	749	373	972	447	1,530	149	44	99
4	151	2,130	491	630	736	354	1,000	415	1,090	139	*43	96
5	147	1,710	480	585	1,750	341	988	412	801	127	46	85
6	137	1,350	655	560	1,150	382	1,540	379	646	116	90	78
7	127	1,210	1,450	530	*1,220	443	1,830	399	591	106	92	70
8	505	2,720	1,400	500	672	386	1,570	425	582	99	81	67
9	850	2,520	1,240	*475	606	389	1,290	422	511	95	63	57
10	582	1,920	1,050	450	704	376	1,100	399	439	92	57	56
11	425	1,470	850	430	663	*395	1,000	373	408	90	90	54
12	354	1,120	731	410	1,180	1,390	956	445	708	89	89	48
13	299	897	603	390	1,240	1,460	902	929	951	85	82	56
14	256	759	534	365	1,080	1,278	886	792	768	81	79	61
15	237	902	500	355	934	1,010	1,240	826	582	73	69	54
16	214	855	485	385	1,49	782	1,170	782	469	70	59	57
17	194	1,080	470	500	646	654	1,020	845	395	68	220	59
18	183	956	470	1,300	503	562	924	749	363	63	320	56
19	172	796	465	1,670	491	538	840	646	323	59	209	69
20	166	686	490	1,470	542	503	787	550	296	59	164	345
21	153	599	955	1,850	518	542	768	558	259	58	129	370
22	147	526	1,750	1,520	495	768	745	811	239	58	110	250
23	139	499	1,360	2,170	469	972	*717	787	219	56	98	179
24	135	629	1,050	2,900	454	787	654	672	199	54	85	149
25	540	787	865	2,160	432	690	603	562	194	49	77	127
26	1,250	875	770	1,530	415	*708	578	538	192	46	69	115
27	950	1,480	710	2,360	399	787	574	740	192	45	61	108
28	713	1,060	865	2,150	354	850	542	629	188	47	58	96
29	826	892	635	1,600	382	811	582	518	179	48	56	86
30	855	694	605	1,670	-	740	603	443	181	46	55	81
31	736	-	655	1,500	-	708	-	399	-	46	53	-
Total	12,010	33,591	24,047	34,590	22,210	20,730	27,918	17,925	14,935	2,545	2,840	3,166
Mean	387	1,120	776	1,116	766	669	931	578	498	82.1	91.6	106
Cfsm	1.67	4.83	3.34	4.81	3.30	2.88	4.01	2.49	2.15	0.354	0.395	0.457
In.	1.92	5.39	3.85	5.54	3.56	3.32	4.47	2.87	2.40	0.41	0.46	0.51

Calendar year 1951: Max 2,970 Min 89 Mean 614 Cfsm 2.65 In. 35.92  
Water year 1951-52: Max 2,900 Min 43 Mean 592 Cfsm 2.55 In. 34.70

Peak discharge (base, 1,500 cfs).--Nov. 4 (5 to 10 a.m.), 2,230 cfs (12.00 ft); Nov. 8 (6 p.m.) 2,990 cfs (12.79 ft); Nov. 27 (5 to 8 a.m.) 1,550 cfs (11.13 ft); Jan. 23 (11 p.m.) 3,440 cfs (13.22 ft); Mar. 12 (5 to 9 p.m.) 1,730 cfs (11.38 ft); Apr. 7 (5 a.m.) 1,890 cfs (11.58 ft); June 2 (11 p.m.) 1,780 cfs (11.42 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Jan. 25, 26, 29-31; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Dec. 15 to Jan. 17.

## West Branch Union River at Amherst, Maine

Location.--Lat 44°50'25", long. 68°22'20", on right bank 200 ft upstream from site of old tannery dam, 0.6 mile upstream from Indian Camp Brook, and 0.7 mile northwest of Amherst, Hancock County.

Drainage area.--148 sq mi.

Records available.--July 1909 to September 1919, July 1929 to September 1952. October 1910 to September 1913, published as Union River at Amherst.

Gage.--Water-stage recorder. Altitude of gage is 165 ft (from topographic map). July 1909 to Sept. 30, 1919, staff and chain gages at highway bridge 1 mile downstream at different datum.

Average discharge.--33 years, 257 cfs.

Extremes.--1912-13: Maximum discharge during water year, 2,100 cfs Mar. 28, 1913 (gage height, 12.65 ft, from graph based on gage readings); minimum daily, 23 cfs Aug. 19-22, 26.

1951-52: Maximum discharge during year, 1,420 cfs Jan. 24 (gage height, 6.48 ft); minimum, 12 cfs Aug. 9, 10 (gage height, 3.10 ft).

1909-19, 1929-52: Maximum discharge, 4,140 cfs Apr. 13, 1940 (gage height, 9.58 ft); maximum gage height, 10.41 ft Mar. 9, 1942 (ice jam); minimum discharge, 3.6 cfs Sept. 29, 1941; minimum gage height, 2.82 ft Sept. 14, 1949.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	Apr. 22, 1914	2,180	12.85
401.....	1915	May 1, 1915	1,920	12.20
431.....	1916	Apr. 2, 1916	1,180	10.30
451.....	1917	Apr. 7, 1917	1,980	12.35
471.....	1918	Apr. 24, 1918	1,480	11.00
501.....	1919	Oct. 6, 1918	1,480	11.00

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

Revisions (water years).--W 801: 1935. W 821: Drainage area. Revised figures of discharge, in cubic feet per second, for some periods in the water years 1912-15, superseding figures published in Water-Supply Papers 321, 351, 381 and 401, are given herein. Complete table of daily discharge is given for the water year 1913, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1911		1913		1914	
Dec. 3.....	460	Dec. 23.....	130	Jan. 22.....	81
10.....	205	24.....	126	23.....	86
11.....	200	25.....	120	Feb. 3.....	200
12.....	194	26.....	116	6.....	196
13.....	180	27.....	112	7.....	190
14.....	164	28.....	108	8.....	184
15.....	150	29.....	104	9.....	178
16.....	138	30.....	102	10.....	170
17.....	128	31.....	100	11.....	164
18.....	114			12.....	156
27.....	460	1914		13.....	150
28.....	370	Jan. 1.....	100	14.....	140
29.....	300	2.....	98	15.....	130
30.....	230	3.....	97	16.....	120
31.....	194	4.....	96	17.....	110
		5.....	94	18.....	100
1912		6.....	93	19.....	85
Apr. 18.....	450	7.....	92	20.....	72
19.....	560	8.....	91	21.....	63
20.....	680	9.....	90	22.....	56
21.....	920	10.....	90	23.....	50
		11.....	89	24.....	45
1913		12.....	88	25.....	44
Dec. 15.....	230	13.....	86	26.....	44
16.....	205	14.....	86	27.....	44
17.....	186	15.....	86	28.....	46
18.....	174	16.....	85		
19.....	162	17.....	84	1915	
20.....	150	18.....	83	Mar. 13.....	150
21.....	144	19.....	82	14.....	146
22.....	136	20.....	82	15.....	140
		21.....	82	16.....	136

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1911.....	850	100	254	1.64	1.89
Calendar year 1911.....	1,480	27	209	1.35	18.29
April 1912.....	1,680	335	761	4.91	5.48
Water year 1911-12.....	1,680	14	256	1.65	22.52
December 1913.....	605	100	236	1.52	1.75
Calendar year 1913.....	2,030	23	355	2.29	31.03
January 1914.....	200	81	104	.671	.77
February.....	210	44	127	.819	.85
Water year 1913-14.....	1,960	18	317	2.05	27.80
Calendar year 1914.....	1,960	18	234	1.51	20.49
March 1915.....	350	118	170	1.10	1.27
Water year 1914-15.....	1,680	19	220	1.42	19.23
Calendar year 1915.....	1,680	19	247	1.59	21.61

## West Branch Union River at Amherst, Maine--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	605	294	600	210	154	1,580	484	753	103	72	34
2	88	699	351	780	210	154	1,370	450	724	90	88	31
3	90	681	356	860	205	154	1,250	415	682	83	63	31
4	95	595	360	920	200	154	1,110	392	630	72	63	44
5	96	551	343	970	200	154	1,220	369	592	72	63	37
6	192	503	320	760	196	154	1,180	347	532	83	59	34
7	96	479	310	730	192	154	1,070	336	484	83	55	34
8	93	814	290	660	190	154	1,040	325	458	78	44	37
9	88	948	270	580	188	154	783	304	415	72	34	51
10	84	814	250	520	186	154	669	304	347	110	28	40
11	81	738	240	465	184	154	605	304	325	132	28	40
12	82	710	220	410	182	154	682	284	284	110	28	40
13	91	669	210	380	180	156	682	274	245	110	28	47
14	84	630	200	350	178	158	846	274	217	110	28	118
15	81	605	190	325	176	196	830	264	208	110	28	59
16	80	580	178	310	174	450	830	254	190	110	28	55
17	76	539	170	300	172	900	814	226	199	103	26	55
18	74	513	180	305	170	820	768	217	173	103	26	63
19	72	482	220	320	168	730	738	208	156	96	23	59
20	99	459	270	380	166	940	783	140	156	96	23	59
21	95	422	335	450	164	1,220	710	325	148	103	23	59
22	93	392	485	425	162	1,000	682	325	140	103	23	78
23	93	378	610	395	160	900	643	236	125	96	26	461
24	107	338	500	365	160	850	618	314	125	96	26	284
25	433	340	415	340	158	1,080	592	314	118	96	26	226
26	598	356	395	315	156	1,340	580	358	110	90	23	236
27	556	336	390	295	156	1,700	556	472	103	90	28	245
28	530	314	390	275	154	2,030	544	508	96	83	28	226
29	580	302	400	255	-	1,690	544	520	83	83	26	208
30	851	282	430	230	-	1,490	520	966	83	78	47	182
31	835	-	480	215	-	1,360	-	896	-	72	37	-
Total	6,201	16,054	10,050	14,465	4,997	20,858	24,839	11,405	8,861	2,916	1,130	3,153
Mean	200	535	324	467	178	673	828	368	296	94.1	36.5	105
Cfsm	1.29	3.45	2.09	3.01	1.15	4.34	5.34	2.37	1.91	0.607	0.235	0.677
In.	1.49	3.85	2.41	3.47	1.20	5.00	5.96	2.73	2.13	0.70	0.27	0.76

Calendar year 1912: Max 1,680 Min 14 Mean 308 Cfsm 1.99 In. 27.10  
 Water year 1912-13: Max 2,030 Min 23 Mean 342 Cfsm 2.21 In. 29.97

Note.--Stage-discharge relation affected by ice Dec. 6 to Mar. 26.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	349	238	395	620	305	360	353	214	105	17	25
2	74	334	223	390	574	288	360	319	349	103	17	34
3	71	554	214	365	520	302	436	292	405	94	15	36
4	69	780	208	335	505	275	496	272	372	86	13	38
5	67	696	211	305	536	220	554	260	345	84	13	41
6	64	657	316	280	*574	208	763	238	312	79	14	46
7	59	647	631	250	554	214	906	241	323	70	14	47
8	99	*1,130	631	226	199	894	244	327	66	14	17	41
9	128	1,030	615	270	458	185	851	241	309	63	13	38
10	114	939	554	*285	426	*171	845	229	298	58	13	37
11	114	839	501	280	364	174	900	217	275	56	17	36
12	*112	734	454	280	525	357	900	226	319	52	17	33
13	105	631	409	270	525	422	883	269	364	49	18	36
14	91	564	364	260	501	401	870	272	368	47	17	33
15	87	525	357	240	467	384	972	309	337	41	16	27
16	85	477	345	255	426	368	933	323	305	37	15	27
17	80	477	335	280	393	327	900	360	269	37	56	26
18	74	444	325	310	302	292	857	349	244	35	*64	25
19	71	397	310	340	414	272	821	327	229	34	49	26
20	69	368	305	395	360	263	792	292	208	34	41	37
21	67	334	415	465	337	266	763	292	182	29	36	35
22	64	305	765	585	316	279	*712	337	163	28	36	34
23	63	285	625	640	323	316	674	349	150	26	36	33
24	61	305	500	1,260	316	323	626	341	134	25	30	33
25	*185	312	420	1,050	302	309	569	319	127	23	26	32
26	247	316	380	965	295	305	525	302	119	20	25	32
27	240	334	350	1,100	298	312	730	309	122	19	25	32
28	244	302	325	1,060	244	341	440	298	122	19	24	27
29	364	285	305	900	316	345	422	272	107	19	23	25
30	380	256	295	780	-	334	393	266	105	18	29	24
31	364	-	325	679	-	341	-	238	-	18	26	-
Total	3,994	15,608	12,271	15,814	12,431	9,098	20,894	8,956	7,513	1,474	769	996
Mean	129	520	396	510	429	293	696	289	250	47.5	24.8	33.2
Cfsm	0.872	3.51	2.68	3.45	2.90	1.98	4.70	1.95	0.321	0.168	0.224	0.224
In.	1.01	3.92	3.09	3.98	3.13	2.28	5.24	2.25	1.89	0.37	0.19	0.25

Calendar year 1951: Max 1,760 Min 55 Mean 340 Cfsm 2.30 In. 31.17  
 Water year 1951-52: Max 1,260 Min 13 Mean 300 Cfsm 2.03 In. 27.60

Peak discharge (base, 1,000 cfs).--Jan. 24 (7 p.m.) 1,420 cfs (6.48 ft.).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 16 to Jan. 23.

## PENOBSCOT RIVER BASIN

East Branch Penobscot River at Grindstone, Maine

Location.--Lat 45°43'50", long. 68°35'20", on left bank 500 ft downstream from Bangor & Arcoostook Railroad bridge, half a mile south of Grindstone, Penobscot County, and 9½ miles upstream from confluence with West Branch Penobscot River.

Drainage area.--1,070 sq mi, approximately (including about 240 sq mi drained by Chamberlain Lake through Telos Canal).

Records available.--October 1902 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 294.74 ft above mean sea level, datum of 1929. Prior to June 30, 1929, chain gage on railroad bridge at same datum.

Average discharge.--50 years (1902-52), 1,863 cfs (unadjusted).

Extremes.--Maximum discharge during year, 11,400 cfs Apr. 21 (gage height, 10.05 ft); minimum, 112 cfs Aug. 30 (gage height, 3.78 ft).

1902-52: Maximum discharge, 37,000 cfs Apr. 30, 1923 (gage height, 16.90 ft, site then in use); minimum daily (1914-52), 77 cfs Nov. 19, 1924.

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in the water supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	May 10, 1914	15,900	12.05
401.....	1915	May 5, 1915	10,200	10.10
431.....	1916	May 1, 1916	7,580	9.00
451.....	1917	June 19, 1917	18,600	12.65
471.....	1918	July 9, 1918	13,800	11.00
501.....	1919	Apr. 26, 1919	10,800	10.00
501.....	1920	May 10, 1920	14,700	11.30
521.....	1921	Mar. 29, 1921	13,200	10.80
541.....	1922	June 23, 1922	15,700	11.40
561.....	1923	Apr. 30, 1923	37,000	16.90
581.....	1924	May 2, 1924	14,000	11.25
601.....	1925	Apr. 3, 1925	6,020	8.40
621.....	1926	May 4, 1926	14,000	11.25
641.....	1927	Apr. 24, 1927	10,500	10.10
661.....	1928	Nov. 5, 1927	22,400	13.60
681.....	1929	May 4, 1929	15,200	11.60

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by Chamberlain, Telos, Second, and Grand Lakes and Round Pond (see p.

Revisions.--W 501: Drainage area. Revised figures of discharge, in cubic feet per second, for a period in water year 1912, superseding those published in Water-Supply Paper 301, are given herewith:

1911	
Nov. 27.....	640
28.....	750
29.....	1,250
30.....	1,350

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
November 1911.....	1,630	360	852	0.796	0.89
Calendar year 1911...	9,550	166	1,230	1.15	15.67
Water year 1911-12...	11,900	324	2,260	2.11	28.77



## East Branch Penobscot River at Grindstone, Maine--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 20

Apr. 21 to Sept. 30

4.4	350	6.0	1,940	3.8	117	6.0	1,940
4.6	464	6.5	2,730	4.0	176	7.0	3,630
4.8	603	7.0	3,630	4.4	348	8.0	5,760
5.0	770	9.1	8,590	4.8	603	10.0	11,300
5.5	1,280			5.4	1,170		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	718	1,000	2,450	1,730	2,280	1,940	1,390	8,810	2,340	806	357	386
2	692	735	2,370	1,650	2,270	1,880	1,420	7,920	5,150	770	627	440
3	*653	595	2,260	1,780	2,290	1,780	1,420	7,080	5,450	735	753	397
4	581	4,440	*2,140	1,860	2,300	1,720	1,520	6,290	4,790	735	352	243
5	388	3,480	2,060	1,970	2,320	1,650	1,680	4,550	4,300	692	239	386
6	378	2,370	2,400	2,090	2,350	1,580	1,900	3,010	3,460	611	235	397
7	405	1,800	4,640	2,090	2,370	1,520	2,240	2,920	4,030	574	232	386
8	497	2,830	4,740	2,090	2,380	1,460	2,760	3,030	8,600	566	325	374
9	806	3,550	3,920	2,060	2,400	1,400	3,720	3,570	8,480	588	890	369
10	788	2,750	3,480	2,030	2,370	1,280	3,780	3,710	6,760	523	718	374
11	890	2,220	3,220	1,940	2,290	1,200	4,280	3,670	5,220	545	287	380
12	833	1,960	2,990	1,900	2,240	1,170	4,280	3,690	5,310	574	176	421
13	770	1,750	2,900	1,850	2,200	*1,180	4,430	5,980	5,570	517	180	409
14	744	1,640	3,220	1,910	2,120	1,300	4,660	4,960	5,160	497	160	403
15	726	1,780	3,440	1,910	2,060	1,260	5,500	4,560	4,080	471	670	392
16	709	1,840	3,690	1,940	2,020	1,210	6,000	4,300	2,920	452	915	397
17	692	2,270	4,020	2,060	1,940	1,180	6,140	4,790	2,850	452	292	392
18	685	2,450	4,220	1,970	1,930	1,170	6,190	4,350	2,830	434	352	386
19	667	2,180	4,020	2,000	1,860	1,170	6,540	4,080	2,120	392	*247	397
20	659	2,030	4,260	1,970	1,790	1,180	8,480	4,200	1,640	274	176	477
21	651	1,860	3,670	1,940	1,750	1,250	11,000	4,320	1,710	247	145	484
22	619	1,730	3,080	1,900	1,690	1,330	10,100	5,980	1,560	243	145	446
23	651	1,690	2,730	1,800	1,650	1,400	9,580	6,520	1,640	243	145	415
24	611	1,620	2,500	1,760	1,620	1,360	10,400	5,980	1,560	228	139	403
25	1,030	1,510	2,300	1,840	1,580	1,320	9,760	5,250	1,350	208	134	403
26	1,940	1,400	2,090	1,780	*1,530	1,300	9,530	4,620	1,120	198	128	397
27	1,550	1,650	1,940	1,780	1,600	1,320	9,780	5,310	1,190	201	120	434
28	1,270	2,210	1,880	1,790	2,020	1,340	9,920	4,560	1,060	460	117	434
29	1,170	2,480	1,840	1,790	2,090	1,350	*9,610	4,060	1,080	1,060	117	403
30	1,100	2,480	1,790	1,840	-	1,350	9,500	3,120	870	627	180	392
31	1,050	-	1,780	2,240	-	1,300	-	2,730	-	380	397	-
Total	24,951	62,500	92,040	59,260	59,290	42,870	177,510	147,720	104,180	15,303	9,950	12,017
Mean	805	2,083	2,969	1,912	2,044	1,383	5,917	4,765	3,473	494	321	401
(+)	-306	+467	-329	-323	-803	-463	-726	+1,188	+86	-199	-307	-275

## Adjusted for change in reservoir contents

Mean	499	2,550	2,640	1,589	1,241	920	6,643	5,953	3,559	295	14	128
Cfsm	0.466	2.38	2.47	1.49	1.16	0.860	6.21	5.56	3.33	0.278	0.013	0.120
In.	0.54	2.66	2.85	1.72	1.25	0.99	6.93	6.41	3.72	0.32	0.01	0.13
		</										

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Telos Lake (controls also Chamberlain Lake and Round Pond) and Grand Lake (controls also Second Lake).

Note.--Stage-discharge relation affected by ice Nov. 23 to Apr. 13.

## West Branch Penobscot River near Medway, Maine

Location.--Lat 45°36'25", long. 68°32'25", on left bank just upstream from Nichatou Rapids at Nichatou Island, half a mile upstream from confluence of East and West Branches, half a mile west of Medway, Penobscot County.

Drainage area.--2,120 sq mi, approximately.

Records available.--March 1916 to October 1940 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 235.6 ft above mean sea level, datum of 1929. Prior to Aug. 4, 1916, chain gage at same site and datum.

Average discharge.--23 years (1916-39), 3,733 cfs (adjusted for storage).

Extremes.--1916-39: Maximum discharge, 25,900 cfs (revised) June 16, 1917 (gage height, 9.88 ft); minimum, 100 cfs (estimated) at times in 1923 and 1924 when plant above was closed.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
451.....	1917	June 16, 1917	25,900	9.88
501.....	1919	Apr. 26, 1919	19,900	8.68
501.....	1920	May 15, 1920	14,900	7.50

Remarks.--Diurnal fluctuation caused by operation of powerplant upstream.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1917, 1919-20, superseding figures published in Water-Supply Papers 451 and 501, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1917		1917		1919		1919	
May 1.....	3,910	June 6.....	6,970	Apr. 26.....	17,200	May 27.....	13,100
3.....	3,910	7.....	6,390	27.....	17,200	28.....	12,400
7.....	4,030	8.....	5,990	28.....	16,900	29.....	10,600
9.....	4,200	9.....	5,170	29.....	16,600	30.....	10,000
10.....	4,030	11.....	7,870	30.....	17,000	31.....	10,800
11.....	4,480	12.....	13,600	May 1.....	17,000	June 1.....	10,900
12.....	4,200	13.....	15,300	2.....	17,300	2.....	10,600
13.....	4,990	14.....	14,400	3.....	17,200	3.....	8,000
14.....	9,070	15.....	16,100	4.....	17,000		
15.....	14,000	16.....	17,000	5.....	17,400	1920	
16.....	15,700	17.....	19,200	6.....	18,500	May 5.....	6,450
17.....	15,700	18.....	23,200	7.....	15,900	10.....	6,450
18.....	15,300	19.....	24,300	8.....	13,000	11.....	7,440
19.....	15,300	20.....	25,400	9.....	12,300	12.....	9,600
20.....	13,600	21.....	24,900	10.....	12,400	13.....	11,300
21.....	15,600	22.....	23,900	11.....	15,000	14.....	12,100
22.....	11,300	23.....	22,400	12.....	17,000	15.....	13,400
23.....	12,100	24.....	21,400	13.....	16,200	16.....	12,600
24.....	12,100	25.....	19,600	14.....	15,100	17.....	12,400
25.....	10,200	26.....	19,200	15.....	14,200	18.....	13,200
26.....	11,600	27.....	17,400	16.....	13,900	19.....	13,200
27.....	12,600	28.....	12,800	17.....	13,100	20.....	13,200
28.....	12,600	29.....	9,280	18.....	12,800	21.....	12,900
29.....	10,400	30.....	6,660	19.....	13,000	22.....	13,200
30.....	8,990			20.....	12,200	23.....	12,100
31.....	9,110	1919		21.....	10,400	24.....	11,600
June 1.....	8,770	Apr. 21.....	6,760	22.....	9,760	25.....	10,600
2.....	8,300	22.....	6,210	23.....	11,900	26.....	10,200
3.....	5,990	23.....	6,450	24.....	14,800	27.....	8,440
4.....	5,340	24.....	9,480	25.....	13,200	28.....	7,000
5.....	5,460	25.....	14,700	26.....	13,400		

Month	Observed			Adjusted		
	Maximum	Minimum	Mean	Mean	Per square mile	Runoff in inches
May 1917.....	15,700	3,450	8,900	8,340	3.93	4.38
June.....	25,400	3,550	13,900	14,400	6.79	7.58
Water year 1916-17.....	25,400	1,960	4,820	5,160	2.43	33.13
Calendar year 1917.....	25,400	1,960	5,060	5,280	2.49	33.86
April 1919.....	17,200	3,650	7,250	10,750	5.07	5.66
May.....	18,500	9,760	13,900	14,100	6.65	7.67
June.....	10,900	3,250	5,020	4,560	2.15	2.40
Water year 1918-19.....	18,500	2,400	5,060	4,740	2.24	30.38
Calendar year 1919.....	17,200	2,200	4,710	4,280	2.02	27.43
May 1920.....	13,400	4,650	8,900	12,300	5.80	6.69
Water year 1919-20.....	13,400	2,200	3,990	4,080	1.93	26.18
Calendar year 1920.....	13,400	2,500	4,200	4,330	2.04	27.76

## Penobscot River near Mattawamkeag, Maine

Location.--Lat 45°34'00", long. 68°24'10", on left bank 1,800 ft downstream from Mattaseunk Dam and powerhouse, 1½ miles upstream from Mattaseunk Brook, and 4¼ miles upstream from Mattawamkeag, Penobscot County.

Drainage area.--3,310 sq mi, approximately (including about 240 sq mi drained by Chamberlain Lake through Telos Canal).

Records available.--June 1940 to September 1952 (unadjusted).

Gage.--Water-stage recorder. Datum of gage is 191.72 ft above mean sea level, datum of 1929.

Average discharge.--12 years, 5,301 cfs.

Extremes.--Maximum discharge during year, 20,000 cfs June 8 (gage height, 8.11 ft); minimum daily, 2,720 cfs Aug. 3.

1940-52: Maximum discharge, 40,200 cfs May 21, 1945 (gage height, 11.09 ft), from rating curve extended above 17,000 cfs; minimum daily, 1,430 cfs Aug. 17, 1941.

Remarks.--Records good. Flow regulated by several reservoirs above station (see p. 69).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,850	4,650	5,070	5,300	5,400	5,670	4,800	13,700	7,000	4,910	4,100	3,360
2	4,500	4,400	4,470	5,180	5,180	5,240	5,400	12,600	10,900	4,550	3,850	3,480
3	4,300	4,150	5,180	5,020	4,750	4,960	5,560	11,600	13,200	4,350	2,720	3,900
4	3,800	3,270	5,460	4,250	4,700	4,910	5,770	10,900	12,700	3,310	3,700	3,850
5	3,750	7,870	5,300	5,240	4,700	4,860	6,100	8,720	13,700	4,600	4,350	3,170
6	3,510	7,150	7,250	3,850	4,910	4,700	5,930	7,000	11,900	3,560	4,300	3,360
7	2,810	6,260	11,300	5,080	5,020	3,900	6,900	6,740	12,400	4,650	4,100	3,510
8	2,940	7,700	11,200	5,400	4,960	4,650	8,260	7,300	17,000	4,700	3,750	3,170
9	4,250	7,730	9,650	6,040	5,020	4,150	8,120	7,720	17,200	4,150	3,600	3,700
10	4,550	6,960	7,720	5,180	4,500	4,700	8,300	7,770	15,000	3,700	3,260	3,800
11	4,550	4,960	6,950	5,020	3,950	4,800	9,540	6,950	13,800	4,100	3,410	3,850
12	4,450	5,400	6,740	5,130	4,100	5,510	9,570	7,100	14,900	4,450	3,310	3,850
13	4,700	5,350	5,720	3,650	4,600	5,460	9,090	9,790	15,000	3,600	3,130	4,150
14	3,510	5,460	5,300	4,350	5,400	*5,560	9,820	9,940	14,400	3,950	3,080	3,170
15	4,050	5,830	5,090	5,020	5,350	5,180	10,800	9,000	12,800	3,850	3,220	3,360
16	4,100	6,420	4,940	4,960	5,510	4,300	11,700	10,200	8,620	3,950	4,960	3,700
17	3,900	7,050	5,230	5,670	4,400	4,750	11,700	11,800	6,370	4,150	3,850	3,950
18	3,950	6,580	5,670	5,510	4,350	4,960	11,600	10,900	6,790	4,000	3,650	3,700
19	4,050	4,650	5,300	5,720	5,510	4,960	12,000	10,900	6,150	4,400	3,650	3,700
20	4,100	5,930	5,400	4,960	5,400	5,240	13,600	13,300	5,830	3,030	3,410	3,950
21	3,360	5,720	5,350	5,350	5,180	5,240	17,600	14,000	4,860	3,600	*3,310	3,360
22	4,300	5,180	5,770	5,990	4,800	5,130	16,700	16,200	4,800	3,410	3,220	3,560
23	3,650	5,350	5,620	5,460	4,800	4,750	15,400	17,200	5,020	3,800	3,700	4,050
24	3,950	5,400	4,860	5,620	4,650	4,800	16,200	16,600	5,670	3,800	3,080	3,850
25	4,250	4,700	3,850	5,080	4,350	5,180	15,800	14,800	5,400	3,700	3,310	4,300
26	5,670	4,500	5,130	5,240	5,180	5,350	15,100	10,200	5,830	4,000	3,460	3,800
27	5,460	4,700	5,180	4,450	5,020	5,350	15,100	9,140	5,460	3,260	3,170	3,900
28	4,650	5,130	5,180	4,700	5,510	5,510	15,200	8,030	5,350	4,450	4,050	3,410
29	5,130	5,510	5,080	5,080	5,460	5,460	*14,900	7,560	4,800	4,650	3,700	3,900
30	4,400	5,700	4,550	5,130	-	4,800	14,500	7,450	4,650	3,950	3,800	3,800
31	4,700	-	5,240	5,130	-	4,960	-	7,980	-	4,150	3,560	-
Total	129,140	175,660	184,810	157,760	142,660	154,990	330,860	323,090	287,500	124,730	111,760	110,390
Mean	4,166	5,855	5,962	5,089	4,919	5,000	11,030	10,420	9,583	4,024	3,605	3,680
(+)	-2,110	+2,230	+166	-1,608	-2,791	-2,647	+7,820	+6,438	-297	-3,639	-4,190	-3,102

Adjusted for change in reservoir contents

	Mean	2.056	8.085	6.128	3.481	2.128	2.353	18.850	9.286	385	-585	578
Cfs/m	0.621	2.44	1.85	1.05	0.643	0.711	5.69	5.09	2.81	0.116	-0.177	0.175
In.	0.72	2.72	2.13	1.21	0.69	0.82	6.35	5.87	3.14	0.13	-0.20	0.20
Observed												
Calendar year 1951:	Max	23,000	Min	2,140	Mean	6,371	Mean	6,408	Cfs/m	1.94	In.	26.27
Water year 1951-52:	Max	17,600	Min	2,720	Mean	6,102	Mean	5,783	Cfs/m	1.75	In.	23.78

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in several reservoirs above station.

Note.--Stage-discharge relation affected by ice, backwater from aquatic vegetation, or high stages of Mattawamkeag River practically the entire year.

## Mattawamkeag River near Mattawamkeag, Maine

Location.--Lat 45°30'20", long. 68°18'05", on right bank at Gordon Lower Falls, 1 mile upstream from Mattakeunk Stream, 4 miles upstream from Mattawamkeag, Penobscot County, and 4½ miles upstream from mouth.

Drainage area.--1,400 sq mi.

Records available.--October 1934 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 230 ft (from topographic map).

Average discharge.--18 years, 2,321 cfs.

Extremes.--Maximum discharge during year, 15,500 cfs Apr. 24 (gage height, 10.03 ft); minimum, 38 cfs Sept. 19 (gage height, 0.14 ft).  
1934-52: Maximum discharge, 29,200 cfs Mar. 23, 1936 (gage height, 15.34 ft); minimum, that of Sept. 19, 1952.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, and those below 80 cfs, which are fair.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22

Apr. 23 to Sept. 30

1.0	416	3.5	2,290	0.1	26	0.6	212
1.4	670	5.0	4,290	.2	57	.8	308
1.8	943	7.0	8,180	.3	92	1.0	416
2.5	1,420	10.0	15,400	.4	130		

Note.--Same as preceding table above 1.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	644	1,970	2,050	2,320	2,510	1,100	2,170	9,380	2,550	1,030	150	60
2	578	2,150	1,980	2,330	2,390	1,080	2,290	8,670	3,010	943	142	82
3	546	2,460	1,910	2,360	2,280	1,080	2,540	7,780	3,420	874	122	78
4	539	4,040	1,840	2,370	2,160	1,070	2,980	6,810	3,860	806	111	78
5	584	5,640	1,800	2,380	2,070	1,060	3,410	5,350	4,500	738	107	71
6	591	6,420	1,970	2,400	2,070	1,060	3,940	4,880	5,200	684	100	71
7	558	6,480	3,080	2,460	2,070	1,070	5,010	4,130	6,580	604	*96	71
8	611	6,830	4,570	2,460	2,060	1,070	6,000	3,760	7,810	526	92	60
9	860	7,830	5,780	2,510	2,070	1,080	6,910	3,670	7,650	482	85	60
10	1,050	8,510	6,360	2,600	2,110	1,050	7,290	3,700	7,420	452	85	60
11	1,120	8,110	6,020	2,540	2,170	1,060	8,250	3,720	7,060	416	85	57
12	1,050	7,270	5,350	2,400	2,190	1,160	9,220	3,560	6,420	366	78	54
13	943	6,360	4,480	2,240	2,180	1,340	10,000	3,560	5,800	339	88	54
14	840	5,510	3,520	2,100	2,110	*1,600	10,500	3,680	5,240	324	92	51
15	772	4,850	2,740	2,050	2,040	1,640	11,000	3,680	5,170	318	108	48
16	718	4,390	2,070	1,880	1,950	1,700	11,600	3,620	5,130	318	120	45
17	663	4,290	2,130	2,160	1,860	1,680	12,200	3,660	4,230	303	126	45
18	617	4,450	2,160	2,280	1,780	1,670	12,600	3,690	3,550	273	126	45
19	591	4,540	2,150	2,620	1,690	1,640	13,000	3,610	3,070	263	130	48
20	546	4,340	2,170	2,920	1,630	1,640	13,500	3,580	2,730	240	130	60
21	526	3,920	2,180	2,960	1,570	1,620	14,400	3,640	2,490	226	119	60
22	489	3,370	2,220	2,980	1,490	1,680	15,100	3,700	2,230	212	107	57
23	476	3,080	2,300	3,010	1,420	1,800	15,400	3,620	1,990	208	103	51
24	470	2,820	2,620	3,020	1,340	1,890	15,000	3,490	1,700	199	100	51
25	584	2,610	2,740	3,110	1,270	1,920	14,500	3,410	1,630	191	92	51
26	1,060	2,280	2,610	3,070	1,210	1,940	13,800	3,460	1,550	170	92	57
27	1,440	2,000	2,490	3,020	1,160	2,090	12,700	3,560	1,480	162	85	64
28	1,600	2,000	2,460	2,940	1,130	2,210	11,800	3,640	1,390	154	78	64
29	1,640	2,090	2,420	2,860	1,120	2,190	*11,000	3,300	1,250	142	71	60
30	1,650	2,150	2,380	2,740	-	2,110	10,100	3,060	1,110	126	71	51
31	1,760	-	2,330	2,610	-	2,090	-	2,780	-	126	68	-
Total	26,116	132,720	90,880	79,680	53,060	47,360	288,210	132,640	117,220	12,215	3,159	1,764
Mean	842	4,424	2,932	2,570	1,830	1,528	9,607	4,279	3,907	394	102	58.8
Cfsm	0.601	3.16	2.09	1.84	1.31	1.09	6.86	3.06	2.79	0.281	0.073	0.042
In.	0.69	3.53	2.41	2.12	1.41	1.26	7.65	3.53	3.11	0.32	0.08	0.05

Calendar year 1951: Max 17,400 Min 371 Mean 2,990 Cfsm 2.14 In. 28.99  
Water year 1951-52: Max 15,400 Min 45 Mean 2,691 Cfsm 1.92 In. 26.16

Peak discharge (base, 10,000 cfs).--Apr. 24 (3 a.m.) 15,500 cfs (10.03 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Feb. 7-25, May 20 to June 15, Aug. 13-20; discharge estimated on basis of recorded range in stage and records for stations on nearby streams. Stage-discharge relation affected by ice Nov. 27 to Dec. 7, Dec. 15 to Jan. 15, Jan. 19 to Feb. 1, Feb. 26 to Mar. 4, Mar. 13-19, Mar. 26-31.

## Mattawamkeag River at Mattawamkeag, Maine

Location.--Lat 45°31'05", long. 68°21'00", near left bank on downstream side of Maine Central Railroad bridge in village of Mattawamkeag, Penobscot County, half a mile upstream from mouth of river.

Drainage area.--1,500 sq mi.

Records available.--September 1902 to December 1935 (discontinued).

Gage.--Chain gage. Datum of gage is 185.84 ft above mean sea level, datum of 1929. After Feb. 21, 1929, water-stage recorder at site 4 miles upstream at different datum. Sept. 29 to Oct. 25, 1929, chain gage at bridge.

Average discharge.--32 years (1902-34), 2,657 cfs.

Extremes.--Maximum and minimum discharges for the water years 1914-16 and 1930-31 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1914	May 11, 1914	*21,600	†12.80	Sept. 23-27, 1914	‡114	-
1915	May 7, 1915	*16,600	†11.27	Oct. 14, 1914	‡123	-
1916	Apr. 22, 1916	*9,370	†8.78	Sept. 5, 6, 1916	‡390	-
1930	Apr. 15, 1930	13,700	8.94	Oct. 2, 1929	‡120	-
1931	Apr. 14, 1931	13,900	9.00	Oct. 15, 1930	107	0.62

\* Revised.

† From graph based on gage readings.

‡ Minimum daily.

1903-34: Maximum discharge, 48,900 cfs (revised), May 1, 1923 (gage height, 19.60 ft); minimum, 86 cfs Oct. 4-12, 1905, Sept. 19, Oct. 6, 1906, Sept. 24-29, 1908, and Oct. 14-17, 1910 (gage height, 2.5 ft).

Revisions.--The figures of maximum discharge for water years 1903-29, some of which have been revised, superseding those published in the water-supply papers indicated, are contained in the following table:

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)‡
-	1903	Mar. 25, 1903	†17,200	11.6
-	1904	May 15, 1904	†17,900	11.75
-	1905	Apr. 10, 1905	†13,000	10.15
-	1906	May 7, 1906	†16,500	11.3
-	1907	Apr. 25, 1907	†25,200	14.15
-	1908	May 2, 1908	†17,600	11.65
-	1909	Apr. 20, 1909	†21,400	12.90
-	1910	Apr. 25, 1910	†11,000	9.45
-	1911	May 2, 1911	†11,500	9.65
-	1912	June 4, 1912	†20,600	12.50
-	1913	Apr. 29, 1913	†21,200	12.70
381.....	1914	May 11, 1914	21,600	12.80
401.....	1915	May 7, 1915	16,600	11.27
451.....	1916	Apr. 22, 1916	9,370	8.78
451.....	1917	June 19, 1917	24,900	13.80
471.....	1918	Apr. 26, 1918	12,700	9.98
501.....	1919	Apr. 10, 1919	13,200	10.16
501.....	1920	Apr. 18, 1920	26,100	14.15
521.....	1921	Apr. 2, 1921	15,600	10.95
541.....	1922	June 24, 1922	17,700	11.60
561.....	1923	May 1, 1923	48,900	19.60
581.....	1924	May 3, 1924	14,300	10.52
601.....	1925	Apr. 5, 1925	10,700	9.29
621.....	1926	May 6, 1926	24,300	13.20
641.....	1927	Apr. 25, 26, 1927	14,200	10.42
661.....	1928	Nov. 6, 1927	17,700	11.44
681.....	1929	May 4, 1929	16,500	11.32

† Not previously published.

‡ From graph based on gage readings.

Remarks.--Some storage in lakes above station.

## Mattawamkeag River at Mattawamkeag, Maine--Continued

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1903-16, 1923, 1929-31, superseding figures published in Water-Supply Papers 279, 281, 301, 321, 351, 381, 401, 451, 561, 696, and 711, are given herein. Complete tables of daily discharges are given for water years 1914-16, 1930-31, but only revised figures are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1902		1905		1911		1929	
Dec. 1.....	2,230	Dec. 3.....	980	Apr. 13.....	5,450	Mar. 6.....	685
2.....	2,120	4.....	1,000	19.....	5,770	7.....	720
3.....	2,020	5.....	1,030	20.....	6,050	8.....	750
4.....	1,940	6.....	1,100	21.....	6,250	9.....	755
5.....	1,880	7.....	1,030	22.....	6,380	10.....	760
6.....	1,830	8.....	955	23.....	6,540	11.....	750
7.....	1,780	9.....	855	24.....	6,700	12.....	735
8.....	1,720	10.....	750	25.....	6,900	13.....	735
9.....	1,650	11.....	685	26.....	7,200	14.....	735
10.....	1,610	12.....	645			15.....	735
11.....	1,560	13.....	590	1912		16.....	735
12.....	1,510	14.....	530	Jan. 1.....	4,740	17.....	785
		15.....	475	Apr. 12.....	6,700	18.....	870
		16.....	435			19.....	870
1903				1913		20.....	950
Mar. 10.....	2,080			Mar. 17.....	855	21.....	1,090
11.....	3,980			18.....	870	22.....	1,230
12.....	6,580			19.....	880	23.....	1,440
13.....	9,230			20.....	905	24.....	1,530
Dec. 14.....	1,000	Jan. 25.....	905	21.....	1,130	25.....	1,630
15.....	1,080	26.....	1,440	22.....	1,690	26.....	1,560
16.....	1,060	27.....	1,600	23.....	2,360	27.....	1,550
17.....	1,050	28.....	1,510	24.....	3,270	28.....	1,540
		29.....	1,370	25.....	4,090	29.....	1,540
		30.....	1,230	26.....	4,130	30.....	1,540
		31.....	1,110	27.....	4,130	31.....	1,640
1904				28.....	4,150	July 2.....	1,450
Apr. 8.....	4,680	Feb. 1.....	1,090	29.....	4,180	3.....	1,270
Nov. 26.....	1,460	2.....	1,070	30.....	4,280	4.....	1,110
27.....	1,400	3.....	1,050	31.....	4,480	5.....	926
28.....	1,380	Dec. 1.....	1,980	Apr. 1.....	5,470	6.....	808
29.....	1,370	2.....	1,870	2.....	6,850	7.....	785
30.....	1,360	3.....	1,780	3.....	8,120	8.....	865
Dec. 1.....	1,330			4.....	8,380	9.....	1,050
2.....	1,300	1908		5.....	8,330	10.....	1,130
3.....	1,240	Apr. 8.....	4,090	6.....	8,330	11.....	1,130
4.....	1,210	9.....	4,260	7.....	8,350	12.....	974
5.....	1,170	10.....	4,220	8.....	8,510	13.....	808
6.....	1,130	11.....	4,200	9.....	9,560	14.....	734
7.....	1,100	12.....	4,200	10.....	10,400	15.....	734
8.....	1,080	13.....	4,220			16.....	727
9.....	1,050	14.....	4,300	1923		17.....	706
10.....	1,010			May 1.....	47,300	18.....	685
11.....	970	1909		2.....	40,600	19.....	678
12.....	925	Apr. 12.....	9,130	3.....	36,800	20.....	575
13.....	890			4.....	34,100	21.....	557
14.....	855	1910		5.....	32,600	22.....	531
15.....	820	Mar. 25.....	2,800	6.....	27,700	23.....	522
16.....	795	26.....	2,900	7.....	23,500	24.....	487
17.....	770	27.....	2,980	8.....	19,000	25.....	487
18.....	750	28.....	3,090			26.....	420
19.....	700	29.....	3,210	1929		27.....	395
20.....	685	30.....	3,430	Mar. 1.....	685	28.....	364
		31.....	3,710	2.....	685	29.....	341
1905				3.....	685	30.....	325
Apr. 2.....	5,240	1911		4.....	685		
3.....	6,160	Apr. 13.....	3,670	5.....	685		
4.....	7,270	14.....	4,030				
Dec. 1.....	1,090	15.....	4,340				
2.....	1,070	16.....	4,700				
		17.....	5,060				

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1902.....	2,230	1,430	1,800	1.20	1.38
March.....	16,300	610	8,960	5.97	6.88
Water year 1902-3.....	16,300	258	2,660	1.77	24.07
December 1903.....	1,680	590	1,030	.687	.79
Calendar year 1903.....	16,300	114	2,290	1.53	20.65
April 1904.....	13,400	1,790	8,330	5.55	6.19
Water year 1903-4.....	17,700	114	2,500	1.67	22.63
November 1904.....	2,220	1,000	1,550	1.03	1.15
December.....	1,330	420	827	.551	.64
Calendar year 1903-4.....	17,700	176	2,740	1.83	24.77
April 1905.....	12,500	4,240	8,480	5.65	6.30
Water year 1904-5.....	12,500	114	1,810	1.21	16.37
December 1905.....	1,100	270	582	.388	.45
Calendar year 1905.....	12,500	86	1,490	.993	13.52
January 1906.....	1,600	340	600	.400	.46
February.....	1,090	655	824	.549	.57
Water year 1905-6.....	15,900	86	2,230	1.49	20.18
December 1906.....	1,980	905	1,240	.827	.95
Calendar year 1906.....	15,900	86	2,630	1.75	23.82
Water year 1906-7.....	24,400	86	3,040	2.03	27.52

## PENOBSCOT RIVER BASIN

## Mattawamkeag River at Mattawamkeag, Maine--Continued

Revised figures of monthly discharge, in cubic feet per second, water years 1903-13,  
1923, 1929--Continued

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April 1908.....	13,900	3,540	5,570	3.71	4.14
Water year 1907-8.....	17,200	86	3,030	2.02	27.52
Calendar year 1908.....	17,200	86	2,330	1.55	21.12
April 1909.....	21,100	4,000	13,000	8.67	9.67
Water year 1908-9.....	21,100	107	2,920	1.95	26.44
Calendar year 1909.....	21,100	305	3,615	2.41	32.74
March 1910.....	3,710	1,420	2,260	1.51	1.74
Water year 1909-10.....	12,500	114	2,790	1.86	25.25
Calendar year 1910.....	10,700	86	2,030	1.35	18.27
April 1911.....	9,880	2,290	4,810	3.21	3.58
Water year 1910-11.....	11,200	86	1,320	.880	11.86
Calendar year 1911.....	11,200	190	1,760	1.17	15.92
January 1912.....	4,740	2,030	2,620	1.75	2.02
April.....	12,200	4,780	8,380	5.59	6.24
Water year 1911-12.....	19,500	258	3,340	2.23	30.28
Calendar year 1912.....	19,500	258	3,840	2.56	34.89
March 1913.....	4,480	300	1,550	1.03	1.19
April.....	21,000	5,470	13,400	8.93	9.96
Water year 1912-13.....	21,000	223	3,420	2.28	30.98
May 1923.....	47,300	1,700	12,100	8.08	9.30
Water year 1923.....	47,300	162	2,210	1.47	19.96
Calendar year 1923.....	47,300	162	2,348	1.57	21.24
March 1929.....	1,640	685	1,010	.673	.78
July.....	1,620	325	.775	.517	.60
Water year 1928-29.....	16,100	150	2,460	1.64	22.31

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,000	10,800	4,090	2,140	1,240	445	1,480	17,800	2,900	1,820	525	295
2	1,000	10,400	4,000	2,050	1,210	480	1,680	17,800	2,580	1,580	525	314
3	906	9,990	3,900	1,980	1,170	545	2,080	17,800	2,580	1,260	470	295
4	818	9,420	3,900	1,880	1,100	660	2,630	18,200	2,430	1,210	470	295
5	953	8,770	3,900	1,830	1,050	855	2,820	18,200	3,070	1,030	420	295
6	1,000	7,990	3,900	1,760	1,000	1,050	2,960	18,200	3,620	862	420	295
7	1,100	7,480	3,900	1,700	925	1,200	3,120	18,300	4,000	660	420	295
8	1,100	6,980	3,900	1,640	880	1,290	3,320	18,800	3,620	906	375	295
9	1,100	6,030	3,800	1,560	810	1,360	3,650	19,500	3,250	1,210	375	295
10	1,100	5,600	4,780	1,500	760	1,400	4,150	20,800	2,980	1,210	334	295
11	1,000	6,360	6,250	1,440	715	1,440	4,640	20,800	2,660	1,210	334	314
12	953	6,360	5,700	1,380	675	1,500	5,180	19,800	2,660	1,210	334	375
13	1,210	5,810	5,380	1,310	640	1,500	5,850	18,800	2,580	1,100	354	334
14	1,320	5,380	5,080	1,260	600	1,490	6,100	17,200	1,620	1,100	445	334
15	1,560	5,490	5,080	1,210	575	1,450	6,140	15,600	1,320	1,260	470	295
16	2,020	5,490	4,880	1,140	545	1,430	6,160	14,400	1,560	953	420	258
17	2,290	5,700	4,680	1,100	530	1,400	6,230	12,300	2,500	818	375	190
18	2,360	5,490	4,380	1,080	510	1,360	6,490	10,400	2,980	818	375	160
19	2,500	5,490	3,900	1,040	490	1,310	6,980	8,510	3,340	818	375	160
20	2,820	5,490	3,710	1,010	465	1,300	8,510	6,980	3,430	906	375	160
21	2,820	5,490	3,160	980	465	1,260	11,500	6,480	3,800	818	375	160
22	3,840	5,280	2,820	935	455	1,250	12,900	5,810	3,160	818	375	134
23	4,860	5,080	2,640	905	440	1,240	13,200	5,600	2,740	818	375	114
24	5,880	4,880	2,580	890	435	1,220	13,200	5,380	2,290	736	354	114
25	6,900	4,880	2,530	880	430	1,210	13,200	4,980	2,150	660	295	114
26	7,920	4,880	2,500	880	425	1,200	12,900	4,380	1,950	590	295	114
27	8,940	4,880	2,440	980	425	1,190	13,400	4,180	1,500	590	295	114
28	9,960	4,880	2,390	1,050	430	1,210	14,100	3,800	1,260	590	295	134
29	10,980	4,680	2,330	1,140	-	1,220	15,600	3,800	1,380	590	295	134
30	11,000	4,480	2,300	1,230	-	1,290	17,500	3,520	1,500	525	295	134
31	10,900	-	2,220	1,250	-	1,360	-	3,620	-	525	295	-
Total	112,110	189,630	117,020	41,130	19,415	37,115	227,670	381,740	77,410	29,201	11,715	6,778
Mean	3,620	6,320	2,770	1,330	693	1,200	7,590	12,300	2,580	942	378	226
Cfs/m	2.41	4.21	2.51	0.887	0.462	0.800	5.06	8.20	1.72	0.628	0.252	0.151
In.	2.78	4.70	2.89	1.02	0.48	0.92	5.64	9.45	1.92	0.72	0.29	0.17
Calendar year 1913: Max	21,000			Min 223		Mean 3,500	Cfs/m 2.33	In. 31.71				
Water year 1913-14: Max	20,800			Min 114		Mean 3,430	Cfs/m 2.29	In. 30.98				

Note.--Stage-discharge relation affected by ice Dec. 23 to Apr. 18.

## Mattawamkeag River at Mattawamkeag, Maine--Continued

Discharge, in cubic feet per second, water year October 1914 to September 1915

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	450	950	285	905	4,540	2,240	12,200	3,520	1,350	1,240	860
2	170	450	950	290	860	4,600	2,280	13,000	3,340	1,240	1,140	780
3	170	565	1,040	300	850	4,640	2,320	14,500	2,920	1,140	1,090	700
4	170	740	1,040	335	820	4,500	2,350	15,100	2,380	1,140	1,040	630
5	200	995	995	390	805	4,520	2,370	15,600	1,970	1,240	950	630
6	170	1,040	950	535	790	4,110	2,380	16,400	1,970	1,140	860	630
7	170	820	950	600	770	3,880	2,400	16,400	2,170	1,140	780	565
8	145	860	905	605	755	3,670	2,470	15,600	2,680	1,840	700	630
9	145	860	780	580	750	3,450	2,610	14,600	2,530	3,620	630	630
10	170	860	740	560	740	3,270	2,840	13,600	2,530	5,600	700	565
11	170	780	700	545	730	3,120	2,580	12,600	2,680	7,350	780	565
12	170	665	565	535	730	2,950	6,480	11,700	2,530	7,350	905	565
13	145	565	535	530	750	2,780	7,600	10,100	2,380	7,480	1,040	505
14	123	565	505	525	845	2,610	9,030	8,640	2,240	6,720	1,040	505
15	134	565	505	510	995	2,460	9,960	7,220	2,240	5,920	950	505
16	145	665	480	505	1,190	2,340	10,100	6,360	2,380	4,880	995	565
17	145	1,040	450	510	1,260	2,210	10,400	5,920	2,240	4,480	1,040	565
18	145	1,410	425	630	1,250	2,110	9,890	5,490	2,240	4,000	950	505
19	200	1,470	400	1,070	1,240	2,040	9,690	5,280	2,380	3,430	950	450
20	375	1,470	375	1,530	1,230	2,000	9,690	4,480	2,380	3,000	950	505
21	598	1,470	350	1,670	1,190	1,940	9,420	3,710	2,240	3,000	950	505
22	630	1,470	305	2,070	1,180	1,970	8,770	3,340	2,100	2,840	950	630
23	630	1,350	305	2,100	1,180	2,020	7,600	3,340	1,840	2,530	950	740
24	565	1,350	285	1,970	1,450	2,060	6,360	3,000	1,780	2,240	950	860
25	565	1,240	255	1,760	2,550	2,070	6,140	3,000	1,410	1,900	1,040	950
26	480	1,140	265	1,590	3,320	2,160	5,920	3,080	1,350	1,710	1,140	1,090
27	505	1,240	265	1,470	4,050	2,200	6,720	3,620	1,350	1,590	1,240	1,300
28	450	1,240	265	1,350	4,340	2,210	7,600	4,090	1,350	1,470	1,240	1,410
29	450	1,140	265	1,190	-	2,180	9,030	3,900	1,470	1,350	1,140	1,650
30	400	1,040	265	1,070	-	2,180	10,400	3,900	1,470	1,240	1,040	1,710
31	450	-	265	985	-	2,200	-	3,710	-	1,240	950	-
Total	9,155	29,515	17,340	28,775	37,525	98,790	189,440	263,480	66,060	95,170	30,320	22,700
Mean	295	985	560	928	1,340	3,160	6,310	8,500	2,200	3,070	979	757
Cfs/m	0.197	0.657	0.373	0.619	0.893	1.91	4.21	5.67	1.47	2.05	0.653	0.505
In.	0.23	0.73	0.43	0.71	0.93	2.20	4.70	6.54	1.64	2.36	0.75	0.56
Calendar year 1914: Max			20,800	Min 114		Mean 2,430	Cfs/m 1.62	In. 22.00				
Water year 1914-15: Max			16,400	Min 123		Mean 2,410	Cfs/m 1.61	In. 21.78				

Note.--Stage-discharge relation affected by ice Dec. 5 to Apr. 9.

Discharge, in cubic feet per second, water year October 1915 to September 1916

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,470	2,040	3,770	1,110	1,270	1,190	5,020	2,090	1,690	1,280	445
2	1,240	1,350	2,170	3,750	1,050	1,350	1,480	5,020	2,380	1,690	1,130	445
3	1,190	1,350	2,380	3,690	995	1,390	2,100	5,020	2,090	1,750	1,030	445
4	1,140	1,240	2,380	3,580	950	1,420	2,460	5,020	1,950	2,160	940	445
5	1,040	1,140	2,530	3,390	905	1,430	2,780	5,020	1,820	5,240	850	390
6	1,140	1,040	2,310	3,090	860	1,420	3,380	5,020	1,690	5,460	850	390
7	1,040	950	2,100	2,780	835	1,390	4,280	5,020	1,690	5,460	770	445
8	950	860	1,970	2,500	820	1,360	5,100	5,800	1,690	5,240	900	445
9	860	860	1,840	2,410	805	1,330	5,740	4,920	1,690	4,700	1,100	500
10	780	860	1,710	2,270	805	1,270	6,160	4,300	1,750	3,700	1,130	500
11	780	860	1,710	2,090	810	1,240	6,370	4,000	1,950	2,780	1,130	500
12	780	860	1,710	1,800	830	1,190	6,370	3,700	2,230	2,300	1,130	445
13	780	860	1,710	1,630	835	1,130	6,370	3,140	3,230	2,020	1,030	445
14	780	860	1,720	1,540	830	1,070	6,610	2,620	3,040	1,750	940	445
15	700	905	1,780	1,460	820	975	6,850	2,090	2,950	1,570	770	390
16	700	1,090	1,880	1,360	805	885	7,100	1,820	2,530	1,340	770	472
17	700	1,410	2,040	1,320	795	830	7,100	1,820	2,380	1,080	690	620
18	700	1,470	2,170	1,270	740	795	7,730	1,880	2,230	1,450	620	690
19	700	1,530	2,280	1,250	715	755	8,380	2,380	2,380	1,450	620	690
20	630	1,710	2,300	1,220	695	725	8,640	2,700	2,700	1,450	560	770
21	630	1,710	2,280	1,210	670	695	8,900	2,530	2,620	1,230	560	690
22	630	1,900	2,250	1,220	650	670	9,160	2,300	2,300	1,130	560	620
23	630	2,310	2,210	1,230	635	660	8,900	2,300	1,880	1,030	500	620
24	700	2,240	2,210	1,250	645	650	8,250	2,780	1,630	1,130	560	560
25	700	1,970	2,230	1,270	725	650	7,860	2,870	1,400	1,130	620	560
26	700	1,840	2,380	1,300	850	665	7,350	2,620	1,280	1,230	560	560
27	995	1,710	2,680	1,300	995	700	6,730	3,040	1,650	1,750	500	500
28	1,140	1,710	3,000	1,270	1,140	740	6,030	2,620	1,880	2,090	500	500
29	1,240	1,710	3,260	1,230	1,190	805	5,550	2,160	2,020	2,090	500	445
30	1,350	1,840	3,540	1,200	-	895	5,020	2,020	1,950	1,880	445	445
31	1,470	-	3,800	1,150	-	1,030	-	2,380	-	1,510	445	-
Total	28,285	41,615	70,570	59,800	24,510	31,385	179,740	103,930	63,050	70,480	24,020	15,417
Mean	912	1,390	2,280	1,930	845	1,010	5,990	3,350	2,100	2,270	775	514
Cfs/m	0.608	0.927	1.52	1.29	0.563	0.673	3.99	2.23	1.40	1.51	0.517	0.343
In.	0.70	1.03	1.75	1.49	0.61	0.78	4.45	2.57	1.56	1.74	0.60	0.38
Calendar year 1915: Max			16,400	Min 285		Mean 2,640	Cfs/m 1.76	In. 23.87				
Water year 1915-16: Max			9,160	Min 390		Mean 1,950	Cfs/m 1.30	In. 17.66				
Calendar year 1916: Max			9,160	Min 390		Mean 2,150	Cfs/m 1.43	In. 19.49				

Note.--Stage-discharge relation affected by ice Dec. 14 to Apr. 10.



## Mattawamkeag River at Mattawamkeag, Maine--Continued

Discharge, in cubic feet per second, water year October 1929 to September 1930

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	974	910	480	990	2,050	5,330	5,530	5,940	629	371	153
2	120	910	885	495	965	2,040	5,330	5,330	5,450	622	352	149
3	132	926	870	495	935	2,020	5,530	5,330	5,040	727	352	153
4	295	934	855	510	910	1,940	5,960	5,530	4,670	1,170	364	156
5	410	902	840	550	910	1,850	5,960	5,960	4,010	1,330	364	168
6	510	854	820	580	885	1,740	6,400	5,960	3,160	1,290	339	202
7	498	815	810	800	855	1,720	5,520	5,960	2,590	1,180	327	230
8	462	778	790	885	845	1,730	10,200	*5,530	2,350	1,100	333	236
9	410	685	780	830	830	2,430	*12,300	5,330	2,290	1,140	327	241
10	364	559	760	1,150	830	3,420	13,400	4,610	2,170	1,390	333	197
11	309	601	750	1,490	830	4,080	13,600	3,830	2,010	1,460	327	156
12	280	713	735	2,000	830	5,050	13,400	3,410	2,260	*1,530	321	138
13	263	755	720	2,250	855	7,520	13,400	3,150	2,380	1,450	345	135
14	248	966	705	*2,280	910	7,520	13,400	2,630	2,320	1,360	423	135
15	248	1,230	690	2,190	1,070	7,750	13,600	2,290	2,180	1,310	449	156
16	241	1,630	680	2,060	1,310	7,750	13,600	2,120	1,870	1,210	468	258
17	230	1,870	685	1,940	*1,400	*7,290	13,100	1,590	1,680	1,030	462	315
18	258	1,880	650	1,830	1,470	6,840	12,000	1,640	1,490	918	456	371
19	297	1,810	635	1,700	1,490	6,400	10,700	1,800	1,400	755	475	397
20	358	*1,870	615	1,620	1,500	6,180	9,690	2,180	1,360	664	416	397
21	410	1,810	610	1,530	1,500	5,330	9,180	2,590	1,290	615	315	390
22	449	1,520	595	1,440	1,480	4,780	8,930	2,890	1,010	566	258	364
23	503	1,280	580	1,400	1,480	4,440	8,680	2,890	926	496	214	333
24	1,190	1,180	560	1,350	1,530	4,130	8,440	2,650	1,100	489	202	303
25	2,080	1,150	545	1,300	1,580	3,540	7,750	2,350	1,110	462	186	297
26	2,220	1,060	530	1,250	1,760	3,540	*7,060	2,240	958	410	171	291
27	2,010	1,010	525	1,210	1,930	4,440	6,400	2,770	*858	352	160	280
28	1,700	1,010	510	1,160	2,020	5,330	5,960	4,440	770	371	156	268
29	1,430	958	490	1,120	-	5,740	5,740	5,740	720	371	153	258
30	1,230	935	490	1,070	-	5,740	5,530	6,400	664	371	*158	246
31	1,070	-	490	1,030	-	5,530	-	6,400	-	364	153	-
Total	20,351	33,575	21,090	39,595	33,900	139,860	278,090	121,270	65,976	27,132	9,728	7,373
Mean	656	1,120	680	1,280	1,210	4,510	9,270	3,910	2,200	875	314	246
Cfsm	0.437	0.747	0.453	0.853	0.807	3.01	6.18	2.61	1.47	0.583	0.209	0.164
In.	0.50	0.83	0.52	0.98	0.84	3.47	6.90	3.01	1.64	0.67	0.24	0.18

Calendar year 1929: Max 15,900

Min 120

Mean 2,180

Cfsm 1.45

In. 19.75

Water year 1929-30: Max 13,600

Min 120

Mean 2,130

Cfsm 1.46

In. 19.78

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 30 to Mar. 12 (no gage-height record Nov. 30 to Dec. 15, Dec. 17-19, and Jan. 6-13; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations).

Discharge, in cubic feet per second, water year October 1930 to September 1931

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	364	900	260	236	352	3,880	4,230	2,520	1,230	890	385
2	224	339	885	265	*230	345	5,330	3,820	2,400	1,150	793	380
3	202	315	840	*275	241	404	7,520	3,600	2,190	1,070	751	395
4	192	285	780	260	236	498	9,950	3,600	1,990	974	800	405
5	160	274	720	230	236	510	11,500	3,680	1,790	928	830	410
6	168	280	665	240	236	490	12,300	3,600	1,640	860	704	410
7	156	309	615	250	230	460	12,600	3,320	1,110	838	665	430
8	149	364	580	345	230	430	12,300	2,870	1,090	1,190	576	*468
9	145	397	565	705	219	415	11,800	2,300	2,360	1,840	529	502
10	142	404	545	720	219	495	10,700	2,040	4,320	2,190	502	518
11	138	364	550	600	214	385	11,000	1,990	6,400	2,350	*474	546
12	130	339	540	580	214	380	*12,300	2,400	7,520	2,690	468	632
13	122	333	525	435	208	360	13,600	2,630	7,520	*2,870	639	822
14	120	315	575	385	250	365	13,900	2,670	6,840	2,690	852	920
15	120	303	615	440	232	380	13,400	2,870	6,180	2,350	1,030	942
16	125	291	670	560	263	405	12,300	2,810	5,960	2,090	1,070	966
17	128	285	705	505	274	430	11,000	2,630	5,740	1,990	920	1,020
18	130	380	720	410	303	440	9,690	2,400	5,530	1,840	758	1,030
19	133	615	720	405	321	455	8,440	2,190	5,140	1,590	639	1,030
20	133	920	645	380	359	460	7,520	1,940	4,320	1,400	570	1,030
21	138	1,010	615	370	352	470	7,060	1,790	3,530	1,230	529	958
22	138	880	610	380	364	460	6,620	1,790	3,000	1,150	512	905
23	138	870	615	390	364	495	6,180	2,040	2,570	1,230	485	920
24	138	950	650	390	378	575	5,960	2,190	2,300	1,400	458	1,020
25	156	1,070	740	390	378	700	5,530	1,990	2,090	1,440	436	1,190
26	208	1,150	725	360	371	800	4,950	1,640	1,840	1,490	410	1,270
27	321	1,110	560	310	390	885	4,760	1,530	1,790	1,440	395	1,310
28	436	990	550	285	378	1,030	4,580	1,790	1,690	1,270	385	1,440
29	468	820	475	280	-	1,260	4,760	1,990	1,490	1,110	385	1,440
30	442	790	395	265	-	1,790	4,580	2,240	1,350	1,110	390	1,310
31	404	-	320	250	-	2,690	-	2,460	-	1,020	395	-
Total	6,060	17,116	19,615	11,930	7,906	19,632	266,010	79,300	104,210	48,020	19,240	24,964
Mean	195	570	633	385	282	633	8,870	2,560	3,470	1,550	621	832
Cfsm	0.150	0.380	0.422	0.257	0.188	0.422	5.91	1.71	2.31	1.03	0.414	0.555
In.	0.15	0.42	0.49	0.30	0.20	0.49	6.59	1.97	2.58	1.19	0.48	0.62

Calendar year 1930: Max 13,600

Min 120

Mean 2,100

Cfsm 1.40

In. 18.96

Water year 1930-31: Max 13,900

Min 120

Mean 1,710

Cfsm 1.14

In. 15.48

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 18 to Dec. 9; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations. Stage-discharge relation affected by ice Dec 10 to Jan. 28 and Mar. 6-31.

## Piscataquis River near Dover-Foxcroft, Maine

Location.--Lat 45°10'35", long. 69°18'55", on left bank at Lows Bridge, 1 mile upstream from Black Stream and 4½ miles upstream from Dover-Foxcroft, Piscataquis County.

Drainage area.--297 sq mi.

Records available.--August 1902 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 358.1 ft above mean sea level, datum of 1929. Prior to July 20, 1930, staff gage at same site and datum.

Average discharge.--50 years, 575 cfs.

Extremes.--Maximum discharge during year, 9,310 cfs Nov. 4 (gage height, 10.59 ft); minimum, 21 cfs Aug. 29, 30, 31 (gage height, 1.59 ft).

1902-52: Maximum discharge, 21,500 cfs Apr. 29, 1923 (gage height, 17.67 ft from graph based on gage readings), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 5 cfs Aug. 6, 1905, Nov. 22, 1908.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record and those below 30 cfs, which are fair. Low flow regulated by powerplants above station.

Revisions (water years).--W 279: 1902. W 1171: Drainage area. W 1201: 1903-17, 1918-33(M), 1934-35. W 1301: 1909(M).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	22	4.0	1,080
1.8	42	5.0	1,990
2.0	78	7.0	4,320
2.5	216	9.0	6,910
3.0	415	9.5	7,640
3.5	700		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	599	354	380	250	255	514	1,700	440	140	*28	24
2	80	531	372	355	235	250	575	1,400	2,430	121	27	39
3	76	2,630	346	335	225	250	821	1,200	2,090	103	27	34
4	58	7,360	324	315	220	245	950	1,020	1,320	98	27	30
5	47	3,180	350	295	295	235	1,000	870	1,140	85	29	28
6	*64	1,910	1,300	280	480	230	1,760	739	928	76	28	26
7	74	1,520	3,390	285	430	215	2,860	800	1,330	70	28	25
8	131	3,830	2,770	250	390	210	2,410	821	1,660	66	28	24
9	301	3,120	2,010	235	365	210	2,120	828	1,200	62	27	23
10	216	1,930	1,460	225	360	200	2,390	793	905	56	27	22
11	174	1,460	1,050	210	340	200	3,200	700	720	58	28	22
12	148	1,160	875	*205	325	285	2,920	1,260	623	58	28	22
13	123	972	800	200	315	630	2,400	3,010	520	60	28	22
14	108	870	715	205	300	585	2,660	1,870	415	58	28	22
15	98	877	655	215	295	*460	3,840	1,470	354	56	27	23
16	91	835	600	250	290	380	3,350	1,820	301	53	26	23
17	87	1,090	565	415	285	335	3,200	1,870	264	47	31	22
18	82	1,040	525	375	305	300	3,120	1,360	279	44	26	22
19	78	842	510	440	325	285	3,370	1,080	250	42	26	29
20	70	680	490	415	325	286	4,240	877	223	38	26	35
21	70	553	635	370	320	294	4,780	1,060	193	36	40	32
22	68	482	940	360	315	363	3,600	1,660	162	36	*36	29
23	66	509	1,500	365	295	450	3,340	1,220	159	34	25	26
24	64	498	835	440	285	455	3,470	935	165	33	25	24
25	1,080	460	575	415	280	415	2,730	752	156	30	25	23
26	1,540	350	435	365	270	415	2,500	807	159	29	*26	23
27	849	410	420	340	265	420	2,580	1,000	247	29	23	24
28	593	531	415	310	*255	460	*2,530	758	206	29	21	24
29	520	450	*435	285	250	*476	2,260	611	165	29	21	24
30	465	358	440	270	-	455	2,110	558	156	29	21	25
31	430	-	415	*255	-	492	-	476	-	29	21	-
Total	7,940	41,037	26,506	9,640	8,870	10,721	77,400	35,305	19,160	1,734	834	771
Mean	256	1,368	855	311	306	346	2,580	1,139	639	55.9	26.8	25.7
Cfsm	0.862	4.61	2.88	1.05	1.03	1.16	8.69	3.84	2.15	0.188	0.090	0.087
In.	0.99	5.14	3.32	1.21	1.11	1.34	9.70	4.43	2.40	0.22	0.10	0.10
Calendar year 1951: Max	11,900			Min 42	Mean 689	Cfsm 2.32	In. 31.51					
Water year 1951-52: Max	7,360			Min 21	Mean 655	Cfsm 2.21	In. 30.06					

Peak discharge (base, 4,000 cfs).--Nov. 4 (3:30 a.m.) 9,310 cfs (10.59 ft); Nov. 8 (5 p.m.) 4,520 cfs (7.17 ft); Apr. 21 (2 a.m.) 4,480 cfs (7.13 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 13-26, Aug. 30 to Sept. 26; discharge estimated on basis of records for stations on nearby streams. Stage-discharge relation affected by ice Dec. 12, Dec. 27 to Mar. 19.

## Sebec River at Sebec, Maine

Location.--Lat 45°16'10", long. 69°06'45", on right bank at Sebec, Piscataquis County, 1,000 ft downstream from highway bridge and dam at outlet of Sebec Lake.

Drainage area.--327 sq mi.

Records available.--October 1924 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 296.3 ft above mean sea level, datum of 1929. Prior to June 22, 1942, water-stage recorder on opposite bank 60 ft downstream at same datum.

Average discharge.--28 years (1924-52), 599 cfs.

Extremes.--Maximum discharge during year, 3,710 cfs Nov. 9 (gage height, 7.27 ft); minimum, 67 cfs Aug. 30 (gage height, 1.91 ft).  
1924-52: Maximum discharge, 11,400 cfs Mar. 20, 1936 (gage height, 14.46 ft), from rating curve extended above 6,000 cfs on basis of velocity-area studies; minimum, about 2 cfs Oct. 14-17, 1930 (gage height, 0.87 ft), when gates in dam were closed.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Flow partly regulated by Sebec Lake and other reservoirs above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 14				Apr. 15 to Sept. 30			
2.2	152	3.5	775	1.9	65	3.5	760
2.5	260	5.0	1,880	2.1	109	4.0	1,060
3.0	484	7.1	3,570	2.5	251	5.0	1,740
				3.0	484	6.0	2,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	460	264	573	659	573	479	557	1,800	296	393	71	158
2	455	278	573	647	567	469	562	1,580	705	383	73	256
3	445	340	562	635	562	660	578	1,420	1,210	365	73	243
4	440	1,040	562	630	557	801	601	1,320	1,510	356	73	222
5	430	1,780	557	624	562	768	612	660	1,450	347	73	195
6	421	1,970	557	612	567	768	735	226	1,370	333	73	180
7	421	2,040	647	601	567	775	868	239	1,460	319	73	156
8	421	2,940	1,000	595	567	729	988	251	1,620	310	74	136
9	426	3,520	1,240	589	573	690	1,100	260	1,600	305	74	121
10	426	3,220	1,590	578	567	678	1,240	264	1,500	296	74	112
11	421	2,890	1,400	567	567	666	1,500	274	1,390	292	74	109
12	416	2,500	1,150	562	573	672	1,780	540	1,300	287	74	99
13	412	2,160	1,080	557	567	659	1,920	910	1,000	282	74	106
14	407	1,900	988	551	562	653	2,080	994	712	278	75	102
15	315	1,350	935	546	562	635	2,330	1,010	724	274	75	156
16	218	690	895	540	557	630	2,590	1,040	515	168	75	195
17	176	735	808	551	551	612	2,670	1,180	421	127	75	188
18	152	788	775	551	557	595	2,690	1,210	450	127	75	177
19	152	801	782	562	551	584	2,750	1,170	440	127	76	177
20	149	808	735	567	540	578	2,890	1,110	445	130	76	180
21	149	788	742	573	540	562	3,060	1,350	407	115	76	170
22	149	762	768	573	535	551	3,020	1,500	397	109	*76	170
23	149	742	775	578	530	557	2,920	1,370	368	106	76	170
24	149	722	782	589	520	551	2,800	1,220	*379	106	74	166
25	190	716	768	589	515	562	2,610	1,140	379	104	74	166
26	226	703	768	589	510	557	*2,430	1,070	393	104	*73	163
27	230	716	749	589	499	551	2,280	1,080	416	700	71	163
28	233	690	729	589	499	551	*2,160	1,010	421	575	71	159
29	241	672	703	589	489	*551	2,030	615	407	76	73	159
30	245	618	684	584	-	557	1,930	287	397	69	73	156
31	256	-	672	578	-	551	-	292	-	71	73	-
Total	9,380	39,141	25,549	18,144	15,886	19,202	56,281	28,392	24,102	7,634	2,290	4,910
Mean	303	1,305	824	585	548	619	1,876	916	803	246	73.9	160
(†)	+13	+242	-134	-121	-68	-319	+701	+68	-44	-226	-97	-54

Adjusted for change in reservoir contents

Mean	316	1,547	690	464	480	300	2,577	984	759	20.0	-23.1	110
Cfs/m	0.966	4.37	2.11	1.42	1.47	0.917	7.98	3.01	2.32	0.061	-0.071	0.336
In.	1.11	5.28	2.43	1.64	1.58	1.06	8.79	3.47	2.59	0.07	-0.08	0.37

	Observed				Adjusted			
Calendar year 1951:	Max	4,880	Min	149	Mean	776	Mean	770
Water year 1951-52:	Max	3,520	Min	69	Mean	686	Mean	681
							Cfs/m	2.35
							In.	31.95
							Cfs/m	2.08
							In.	28.31

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Sebec Lake and Wilson Pond.

Note.--No gage-height record Aug. 3-21; discharge estimated on basis of recorded range in stage.

## Pleasant River near Milo, Maine

Location--Lat 45°17'05", long. 69°00'25", on left bank 2 miles northeast of Milo, Piscataquis County, and 8 $\frac{1}{4}$  miles upstream from mouth.

Drainage area--322 sq mi.

Records available--June 1920 to September 1952.

Gage--Water-stage recorder. Altitude of gage is 302 ft (from river-profile map). Prior to June 17, 1929, chain gage at Snows Bridge 2 miles downstream.

Average discharge--32 years (1920-52), 677 cfs.

Extremes--Maximum discharge during year, 5,360 cfs Nov. 4 (gage height, 6.03 ft); minimum, 43 cfs Aug. 15, 17 (gage height, 1.46 ft).  
1920-52: Maximum discharge, 24,400 cfs Apr. 30, 1923 (gage height, 14.33 ft, at site then in use); minimum, 15 cfs Aug. 17, 1944 (gage height, 1.21 ft).

Remarks--Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by power development at Brownville and by small storage dams above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 12

Apr. 13 to Sept. 30

1.9	176	3.5	1,370	1.4	33	3.0	825
2.1	258	4.0	1,990	1.6	71	3.5	1,340
2.5	480	5.0	3,520	1.8	128	4.0	1,960
3.0	875	5.8	4,920	2.0	198	5.0	3,520
				2.5	460	5.7	4,740

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	660	535	635	480	310	550	2,290	676	240	67	52
2	199	734	435	600	465	305	550	1,830	2,870	227	63	74
3	196	1,320	410	570	440	285	875	1,540	3,050	202	56	131
4	184	4,860	390	555	430	270	740	1,340	1,830	194	54	131
5	180	3,860	320	530	540	265	620	1,160	1,410	187	52	116
6	*192	2,330	1,190	475	670	260	875	1,050	1,190	168	56	98
7	215	1,650	3,830	435	645	240	1,260	1,090	2,070	161	63	87
8	332	2,580	3,420	415	615	230	1,610	1,180	2,730	154	60	74
9	534	3,250	2,540	395	600	225	1,610	1,360	1,860	141	54	69
10	430	2,290	1,820	370	575	225	1,800	1,420	1,360	131	48	67
11	365	1,670	1,380	360	585	405	2,260	1,300	1,130	131	58	63
12	311	1,360	1,200	*355	555	615	2,400	1,460	1,160	128	54	58
13	282	1,130	1,100	330	485	820	2,040	2,680	1,010	125	52	56
14	254	1,000	985	300	465	550	2,220	2,400	834	125	45	58
15	245	984	900	290	460	*495	3,330	2,100	722	122	45	58
16	228	1,000	830	340	455	455	3,080	2,050	610	116	43	58
17	219	1,140	760	550	435	425	2,910	2,080	574	104	50	58
18	215	1,150	700	635	475	390	2,800	1,650	567	95	76	56
19	207	994	645	710	520	360	3,070	1,320	508	95	71	60
20	203	866	655	685	505	325	3,790	1,110	454	95	67	125
21	196	734	670	620	495	330	4,700	1,240	410	93	60	104
22	188	676	685	600	485	365	3,760	1,790	374	87	*60	98
23	188	653	700	630	465	430	3,150	1,580	335	82	58	84
24	188	680	715	725	430	405	3,480	1,250	309	74	56	76
25	495	676	710	715	400	375	2,990	1,060	298	71	52	71
26	1,490	620	655	630	365	365	*2,750	1,100	330	63	*50	71
27	974	620	630	585	*350	395	2,960	1,410	403	67	50	74
28	717	585	605	570	340	460	3,080	1,130	357	69	48	79
29	653	550	620	550	320	415	2,920	920	298	71	48	79
30	599	*550	630	530	-	370	2,800	801	278	69	47	74
31	563	-	635	500	-	465	-	706	-	67	50	-
Total	11,453	41,152	31,400	16,190	14,010	11,650	70,980	45,577	30,005	3,754	1,713	2,359
Mean	369	1,372	1,013	522	483	375	2,366	1,470	1,000	121	55.3	78.6
Cfs/m	1.15	4.26	3.15	1.62	1.50	1.18	7.35	4.57	3.11	0.376	0.172	0.244
In.	1.33	4.75	3.63	1.87	1.62	1.34	8.20	5.27	3.47	0.43	0.20	0.27
Calendar year 1951: Max	10,900	Min	138	Mean	855	Cfs/m	2.66	In.	36.08			
Water year 1951-52: Max	4,860	Min	43	Mean	766	Cfs/m	2.38	In.	32.38			

Peak discharge (base, 3,700 cfs)--Nov. 4 (2 to 5 p.m.) 5,360 cfs (6.03 ft); Dec. 7 (1:30 p.m.) 4,580 cfs (5.50 ft); Apr. 21 (3 to 6 a.m.) 5,000 cfs (5.84 ft); June 2 (6 to 8 p.m.) 4,030 cfs (5.30 ft).

\* Discharge measurement made on this day.

Note--Stage-discharge relation affected by ice Nov. 26 to Dec. 5, Dec. 14 to Apr. 12 (no gage-height record Dec. 16-28; discharge estimated on basis of records for nearby stations).

## Piscataquis River at Medford, Maine

Location.--Lat 45°15'40", long. 68°52'05", on left bank  $1\frac{1}{2}$  miles southwest of Medford, Piscataquis County, and  $3\frac{1}{2}$  miles downstream from Pleasant River.

Drainage area.--1,161 sq mi.

Records available.--June 1924 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 248.56 ft above mean sea level, datum of 1929. Prior to Aug. 13, 1929, staff gage at site  $1\frac{1}{2}$  miles downstream at different datum.

Average discharge.--28 years, 2,216 cfs.

Extremes.--Maximum discharge during year, 16,300 cfs Nov. 4 (gage height, 8.20 ft); minimum, 123 cfs Aug. 6 (gage height, 1.33 ft).

1924-52: Maximum discharge, 50,200 cfs Mar. 20, 1936 (gage height, 15.07 ft), from rating curve extended above 20,000 cfs by logarithmic plotting; minimum, 99 cfs Oct. 28, 1947 (gage height, 1.28 ft).

Maximum stage known, 20.8 ft May 1, 1923, at former site  $1\frac{1}{2}$  miles downstream.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some regulation for power and log driving by lakes above station.

Revisions.--W 1171: Drainage area. Revised figures of discharge, in cubic feet per second, for low-water period in water year 1936, superseding figures published in Water-Supply Paper 801, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1935		1935		1935	
Oct. 1.....	374	Oct. 12.....	225	Oct. 23.....	275
2.....	421	13.....	180	24.....	336
3.....	403	14.....	164	25.....	346
4.....	330	15.....	198	26.....	292
5.....	346	16.....	250	27.....	216
6.....	240	17.....	275	28.....	180
7.....	250	18.....	260	29.....	757
8.....	319	19.....	245	30.....	331
9.....	319	20.....	198	31.....	363
10.....	302	21.....	153		
11.....	275	22.....	180		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October 1935.....	8,551	421	153	276	0.236	0.27
Calendar year 1935.....	686,664	16,300	153	1,983	1.02	21.99
Water year 1935-36.....	1,020,070	46,400	187	2,787	2.40	32.05

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	710	1,540	1,840	1,850	1,540	1,120	2,100	6,870	1,430	960	249	142
2	680	2,120	1,880	1,800	1,470	1,250	2,500	5,530	5,690	910	193	234
3	640	2,840	1,920	1,730	1,440	1,360	2,910	4,690	6,670	815	155	402
4	460	12,200	1,900	1,700	1,540	1,570	3,390	4,460	6,350	757	134	467
5	370	13,200	1,780	1,650	1,470	1,450	4,080	3,920	5,260	638	150	434
6	*740	8,260	2,330	1,580	1,770	1,300	4,990	2,660	4,670	654	145	325
7	805	6,290	2,260	1,520	2,290	1,320	7,740	2,470	5,600	695	165	280
8	1,020	5,020	9,080	1,470	2,020	1,310	8,320	2,650	7,570	629	172	331
9	1,470	12,100	7,540	1,420	1,840	1,300	7,860	2,800	6,180	583	165	348
10	1,430	9,600	6,160	1,340	1,770	1,240	7,920	2,850	4,920	567	153	319
11	1,280	7,510	4,820	1,300	1,670	1,220	9,290	2,710	4,220	567	149	308
12	1,120	6,280	4,070	*1,270	1,600	1,400	9,850	2,920	4,150	467	145	296
13	940	5,340	3,450	1,220	1,570	2,210	3,810	7,050	3,690	481	153	234
14	940	4,700	3,140	1,190	1,540	2,500	9,410	6,620	2,760	523	149	157
15	960	4,370	2,780	1,180	1,550	*2,400	10,800	5,730	2,390	523	145	202
16	784	3,670	2,690	1,120	1,500	2,210	11,900	5,340	2,160	509	142	291
17	662	4,410	2,350	1,280	1,480	1,900	11,100	6,370	1,710	467	178	291
18	621	3,810	2,180	1,500	1,470	1,700	10,300	5,440	1,600	441	180	295
19	583	3,570	2,060	1,600	1,560	1,540	10,600	4,620	1,570	336	172	296
20	502	3,160	2,020	2,040	1,580	1,400	11,300	3,960	1,500	260	170	325
21	454	2,780	2,130	1,800	1,620	1,420	14,000	3,980	1,310	296	180	275
22	467	2,590	2,290	1,950	1,640	1,440	12,900	6,080	1,220	336	*189	302
23	537	2,700	2,520	1,740	1,600	1,520	10,700	3,850	1,210	336	184	354
24	537	2,290	2,780	1,850	1,490	1,800	10,900	4,600	1,050	308	185	354
25	750	2,470	2,960	1,980	1,420	1,670	9,810	3,920	1,000	184	145	348
26	3,660	2,240	2,830	1,850	1,120	1,690	*9,530	3,710	1,070	165	138	348
27	2,690	2,010	2,610	1,700	*1,070	1,690	8,440	4,480	1,220	153	145	270
28	2,910	2,060	2,420	1,620	1,090	1,710	8,440	4,020	1,210	575	149	211
29	1,910	2,100	2,260	1,540	1,110	1,750	7,980	3,270	1,110	679	149	275
30	1,640	2,100	2,070	1,500	-	1,760	7,650	2,450	1,100	360	161	331
31	1,700	-	1,950	1,500	-	1,800	-	1,980	-	308	145	-
Total	33,570	145,180	100,730	46,540	44,810	49,790	253,590	134,330	93,940	15,480	4,991	9,046
Mean	1,083	4,839	3,249	1,566	1,545	1,606	8,453	4,333	3,131	499	161	302
Cfs/m	0.933	4.17	2.80	1.35	1.33	1.38	7.28	3.73	2.70	0.430	0.139	0.260
In.	1.08	4.65	3.23	1.56	1.43	1.59	8.12	4.30	3.01	0.50	0.16	0.29

Calendar year 1951: Max 26,800 Min 370 Mean 2,744 Cfs/m 2.36 In. 32.05  
Water year 1951-52: Max 14,000 Min 130 Mean 2,552 Cfs/m 2.20 In. 29.92

Peak discharge (base, 13,000 cfs).--Nov. 4 (11:30 p.m.) 16,300 cfs (8.20 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-5, Aug. 16-21; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Dec. 14 to Apr. 4 (no gage-height record Dec. 20-28, Feb. 11-15, 18-26; discharge estimated on basis of weather records and hydrographic comparison with records for nearby stations).

## Penobscot River at West Enfield, Maine

Location.--Lat 45°14'15", long. 68°39'10", on left bank at highway bridge, 1,000 ft downstream from Piscataquis River, and 1 mile southwest of West Enfield, Penobscot County.

Drainage area.--6,600 sq mi, approximately (including about 240 sq mi drained by Chamberlain Lake through Telos Canal).

Records available.--November 1901 to September 1952. Records prior to 1910, republished with some revisions in Water-Supply Paper 279.

Gage.--Water-stage recorder. Datum of gage is 125.94 ft above mean sea level, datum of 1929. Prior to Dec. 11, 1912, chain gage 50 ft upstream at same datum.

Average discharge.--50 years (1902-52), 11,430 cfs, unadjusted.

Extremes.--Maximum discharge during year, 50,700 cfs Apr. 21 (gage height, 12.74 ft); minimum, 3,790 cfs Aug. 29 (gage height, 2.43 ft).  
1901-52: Maximum discharge, 153,000 cfs May 1, 1923 (gage height, 25.15 ft); minimum, 1,630 cfs (revised) Oct. 29, 1905 (gage height, 1.0 ft).

Revisions.--The maximum discharge for the water year 1909 has been revised to 85,900 cfs Sept. 30, 1909 (gage height, 18.00 ft, from graph based on gage readings), superseding figure published in Water-Supply Paper 261 and 501. The minimum discharge for the water year 1905 has been revised to 1,630 cfs Oct. 29, 1905 (gage height, 1.0 ft), as originally published, superseding figure published in Water-Supply Paper 501.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by several reservoirs above station (see p. 69).

Cooperation.--Water-stage recorder graph furnished by T. W. Clark, hydraulic engineer, of Old Town.

Revisions (water years).--W 1171: 1940. See also Records available. Revised figures of discharge, in cubic feet per second, for winter periods in the water years 1902-5, 1907-13, superseding figures published in previous water-supply papers, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Dec. 1901		Mar. 1903		Jan. 1908		Apr. 1911	
1.....	2,830	17.....	30,200	5.....	9,030	20.....	17,700
2.....	2,660	18.....	28,600	6.....	8,900	21.....	18,000
3.....	2,600	19.....	23,700	7.....	8,750	22.....	18,300
4.....	2,900		25,400	8.....	8,630	23.....	19,000
5.....	3,000			9.....	8,840	Dec. 6.....	8,060
6.....	2,830	Apr. 1904	8,630	10.....	10,200	7.....	7,840
7.....	2,710	4.....	8,690	11.....	9,750	8.....	7,790
8.....	2,530	5.....	8,970	12.....	8,970	9.....	7,760
9.....	2,500	6.....	9,120	13.....	7,970	10.....	7,820
		7.....	9,750	14.....	7,740	11.....	7,950
Jan. 1902		8.....	10,700	15.....	7,710	12.....	8,740
1.....	7,620	9.....	13,100	16.....	7,680	19.....	10,300
2.....	6,850	10.....	15,200	17.....	7,680	20.....	9,810
3.....	6,800	11.....	19,800	18.....	7,650	21.....	9,600
4.....	6,850	12.....	22,700	19.....	7,650	22.....	9,540
5.....	6,420	13.....	22,100	Mar. 28.....	12,400	23.....	9,570
6.....	5,790	14.....	20,100	30.....	12,400	24.....	10,500
7.....	5,260	15.....	18,700	31.....	12,800	25.....	16,600
8.....	5,020	16.....	18,000		13,400	26.....	16,400
9.....	4,860	17.....	17,800	Apr. 1.....	13,700	27.....	13,900
10.....	4,450	18.....	17,700	2.....	14,100	28.....	12,000
11.....	4,090	19.....	18,000	3.....	14,900	29.....	10,900
12.....	3,780	20.....	18,700	4.....	15,900	30.....	10,300
13.....	3,590	21.....	19,900	5.....	15,100	31.....	9,970
14.....	3,420	22.....	21,100	6.....	14,400		
15.....	3,280	Dec. 1.....	5,500	7.....	14,100	1912	
16.....	3,140	2.....	5,380	8.....	14,100	Apr. 11.....	17,300
17.....	3,070	3.....	5,990	9.....	13,900	12.....	18,200
18.....	3,020	4.....	6,120	10.....	14,000	13.....	19,100
19.....	3,000	5.....	6,240	11.....	14,300	14.....	20,200
20.....	3,020	6.....	6,240	12.....	14,700	Dec. 15.....	8,460
21.....	3,080	7.....	6,120	13.....	14,600	16.....	8,400
22.....	3,550			14.....	14,700	17.....	8,400
23.....	3,920	1906		15.....	15,400	18.....	8,340
24.....	5,740	Nov. 29.....	7,560	Dec. 4.....	3,920	19.....	8,400
25.....	6,240	30.....	7,530			20.....	8,830
26.....	5,740			1909		21.....	10,000
27.....	6,340	1907		Dec. 29.....	6,160	22.....	9,880
28.....	6,500	Dec. 16.....	16,100	30.....	6,140	23.....	8,830
29.....	6,450	17.....	14,100	31.....	6,060	24.....	7,630
30.....	6,120	18.....	15,200			25.....	6,910
31.....	5,840	19.....	12,500	1910		26.....	6,340
Feb. 1.....	5,740	20.....	11,800	Apr. 1.....	18,400	27.....	6,140
2.....	5,820	21.....	11,200	2.....	21,300	28.....	6,020
3.....	5,920	22.....	10,700	3.....	27,200	29.....	5,960
4.....	5,740	23.....	10,300	4.....	28,300	30.....	5,920
5.....	5,820	24.....	13,500	Dec. 24.....	3,040	31.....	6,060
6.....	5,480	25.....	14,500	25.....	3,120		
7.....	5,400	26.....	15,300	26.....	3,150	1913	
8.....	5,280	27.....	14,200	27.....	3,190	Jan. 1.....	6,780
Dec. 5.....	5,640	28.....	13,100	28.....	3,330	2.....	7,630
6.....	5,640	29.....	11,700	29.....	3,630	3.....	8,260
7.....	5,740	30.....	10,800	30.....	4,500	4.....	10,100
8.....	5,740	31.....	10,300	31.....	5,650	5.....	11,900
						6.....	11,900
1903		1908		1911		7.....	11,700
Mar. 12.....	49,800	Jan. 1.....	9,970	Apr. 16.....	15,900	8.....	11,500
13.....	44,500	2.....	9,650	17.....	16,600	9.....	11,400
14.....	39,200	3.....	9,340	18.....	17,100	10.....	11,200
15.....	34,100	4.....	9,150	19.....	17,400	11.....	11,100

## Penobscot River at West Enfield, Maine--Continued

Revised figures of discharge, in cubic feet per second, 1902-5, 1907-13--Continued

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1913		1913		1913		1913	
Jan. 12.....	11,100	Jan. 26.....	10,400	Feb. 9.....	7,170	Feb. 23.....	6,220
13.....	11,100	27.....	9,910	10.....	6,910	24.....	5,580
14.....	11,000	28.....	9,420	11.....	7,140	25.....	6,060
15.....	11,000	29.....	9,150	12.....	7,170	26.....	6,220
16.....	10,800	30.....	8,950	13.....	7,070	27.....	6,140
17.....	10,700	31.....	8,770	14.....	6,940	28.....	6,060
18.....	10,600	Feb. 1.....	8,630	15.....	6,700	Mar. 1.....	5,940
19.....	10,700	3.....	8,480	16.....	6,140	2.....	5,650
20.....	11,000	3.....	8,340	17.....	6,160	3.....	4,960
21.....	11,900	4.....	8,090	18.....	6,160	4.....	5,330
22.....	12,800	5.....	7,870	19.....	6,600	6.....	5,630
23.....	12,900	6.....	7,710	20.....	6,650	7.....	5,630
24.....	12,200	7.....	7,520	21.....	6,190		
25.....	11,400	8.....	7,360	22.....	6,290		

Month	Maximum	Minimum	Mean
December 1901.....	69,700	2,500	14,000
January 1902.....	7,620	3,000	4,920
February.....	5,920	4,810	5,270
December.....	8,720	5,400	6,460
Calendar year 1902.....	73,400	3,000	14,000
March 1903.....	61,600	4,110	30,400
Water year 1902-3.....	61,600	2,580	11,100
Calendar year 1903.....	61,600	1,810	10,000
April 1904.....	43,100	8,630	20,000
Water year 1903-4.....	52,200	1,690	9,450
December 1904.....	6,240	4,810	5,310
Calendar year 1904.....	52,200	1,690	10,700
Water year 1904-5.....	34,100	2,950	8,410
November 1906.....	14,800	7,530	11,000
Calendar year 1906.....	60,800	2,610	11,700
Water year 1906-7.....	91,400	2,860	13,500
December 1907.....	39,600	7,910	15,000
Calendar year 1907.....	91,400	2,860	15,300
January 1908.....	10,200	7,620	8,490
March.....	13,400	9,960	10,800
April.....	60,000	13,700	21,100
Water year 1907-8.....	68,900	1,670	14,400
December 1908.....	4,930	2,740	3,410
Calendar year 1908.....	68,900	1,670	11,300
Water year 1908-9.....	76,300	2,060	12,100
December 1909.....	15,600	6,060	9,600
Calendar year 1909.....	76,300	2,830	14,200
April 1910.....	38,600	15,000	27,200
Water year 1909-10.....	51,500	3,230	12,600
December 1910.....	5,650	3,040	3,640
Calendar year 1910.....	38,600	2,470	10,500
April 1911.....	37,800	4,280	15,400
Water year 1910-11.....	39,200	1,860	6,390
December 1911.....	20,800	7,760	11,300
Calendar year 1911.....	39,200	1,860	7,330
April 1912.....	59,200	11,100	29,000
Water year 1911-12.....	59,200	3,430	12,500
December 1912.....	17,000	5,920	10,200
Calendar year 1912.....	63,200	3,950	14,700
January 1913.....	12,900	6,780	10,600
February.....	8,630	5,580	6,910
March.....	52,400	4,730	19,900
Water year 1912-13.....	63,200	3,330	14,200
Calendar year 1913.....	52,400	3,330	13,000

## Penobscot River at West Enfield, Maine--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*6,080	9,760	8,690	9,410	11,400	9,700	10,600	32,200	13,300	8,490	5,070	4,150
2	8,200	10,400	8,980	9,470	11,000	9,610	12,200	29,200	13,700	8,140	4,960	4,150
3	6,290	13,400	9,410	9,180	10,400	9,410	12,900	26,400	29,000	7,950	4,780	4,290
4	6,120	29,400	9,700	8,830	9,790	9,530	14,500	23,600	26,600	7,570	4,630	4,590
5	5,910	32,500	10,000	8,550	10,000	9,640	16,000	21,100	26,200	6,320	4,550	4,550
6	5,700	25,700	10,800	8,830	10,300	9,500	19,000	16,500	25,000	7,110	4,960	4,210
7	5,540	21,800	23,000	*9,270	10,600	9,380	23,900	14,800	23,200	6,810	4,940	4,060
8	5,470	26,400	29,400	8,350	10,500	9,350	26,800	14,300	30,900	7,570	4,780	4,170
9	6,640	33,300	28,500	8,550	10,400	9,410	27,400	14,600	34,000	7,010	4,700	4,080
10	7,810	30,500	24,800	8,550	10,300	9,180	28,100	15,100	31,900	6,050	4,570	4,270
11	7,650	26,100	21,400	8,470	10,200	9,410	31,800	15,000	28,100	5,220	4,340	4,360
12	7,260	22,200	19,200	8,350	10,200	10,000	34,200	14,600	29,100	5,570	4,340	4,340
13	7,610	20,000	14,650	8,350	10,100	10,700	33,500	18,600	29,600	5,750	4,250	4,460
14	6,940	17,900	10,900	9,410	10,100	11,100	32,800	22,100	28,700	5,190	4,150	4,440
15	6,700	16,300	9,120	8,610	10,000	11,300	37,500	20,000	26,400	5,640	4,100	4,210
16	5,700	15,700	10,300	9,120	10,000	10,600	40,300	19,100	22,100	5,400	4,000	4,170
17	5,890	15,400	10,400	9,760	10,000	10,000	40,500	22,000	15,700	5,200	5,000	4,340
18	5,680	16,400	10,400	10,900	10,000	9,700	39,700	21,700	14,100	5,290	4,480	4,460
19	5,610	15,800	10,400	12,400	10,000	9,580	40,200	19,600	13,400	5,180	*4,44*	4,460
20	5,610	14,800	10,300	14,200	10,000	9,560	42,000	19,400	12,200	5,140	4,360	4,460
21	5,570	13,500	10,900	14,000	9,940	9,610	48,000	21,200	11,500	4,500	4,320	4,520
22	5,050	12,200	11,900	14,100	9,790	9,880	48,900	25,200	10,400	4,760	4,320	4,210
23	5,750	11,700	12,900	13,900	9,700	10,000	45,300	28,200	9,470	4,780	3,980	4,230
24	5,400	11,700	13,600	14,300	9,410	9,970	44,800	27,300	10,000	4,870	4,340	4,570
25	6,030	11,400	13,900	14,300	*9,350	9,850	*43,300	25,200	9,790	4,850	4,150	4,420
26	9,560	10,000	13,500	14,100	9,320	9,760	40,300	21,200	9,890	4,780	4,100	4,700
27	11,400	8,550	13,700	13,500	9,500	9,640	39,500	18,600	10,100	4,740	4,080	4,380
28	10,000	8,270	12,700	12,700	9,610	9,760	37,100	17,900	9,750	4,670	3,940	4,250
29	9,240	8,690	11,800	12,100	9,700	9,700	36,300	16,400	9,350	5,890	3,960	4,040
30	9,850	8,830	10,800	12,000	-	9,640	33,900	14,600	8,190	5,590	4,230	4,270
31	9,210	-	9,610	*12,000	-	9,610	-	13,900	-	5,140	4,150	-
Total	211,870	518,300	425,610	333,540	291,610	304,080	979,700	629,800	571,610	181,120	136,950	129,810
Mean	6,835	17,280	13,730	10,760	10,060	9,809	32,660	20,320	19,050	5,843	4,418	4,327
(†)	-2,097	+2,472	+32	-1,729	-2,660	-2,966	+8,520	+6,506	-341	-3,864	-4,287	-3,157
Adjusted for change in reservoir contents												
Mean	4,738	19,750	13,760	9,031	7,200	6,843	41,180	26,830	18,710	1,979	131	1,170
Cfsm	0.718	2.99	2.08	1.37	1.09	1.04	6.24	4.07	2.83	0.300	0.020	0.177
In.	0.83	3.34	2.40	1.58	1.18	1.20	6.96	4.69	3.16	0.35	0.02	0.20
Observed												
Calendar year 1951:	Max	74,500	Min	5,050	Mean	13,700	Mean	13,730	Cfsm	2.08	In.	28.22
Water year 1951-52:	Max	48,900	Min	3,940	Mean	12,880	Mean	12,560	Cfsm	1.90	In.	25.91
Adjusted												

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in several reservoirs above station.

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



## Passadumkeag River at Lowell, Maine

Location.--Lat 45°11'00", long. 68°28'25", on right bank at Lowell, Penobscot County, half a mile downstream from dam and highway bridge and 10 miles upstream from mouth.

Drainage area.--299 sq mi.

Records available.--October 1915 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 151.3 ft above mean sea level, datum of 1929. Oct. 1, 1915, to Sept. 30, 1917, chain and staff gages at same site and datum. Oct. 1, 1917, to Nov. 30, 1921, chain gage at site 400 ft downstream from highway bridge at different datum.

Average discharge.--37 years, 485 cfs.

Extremes.--Maximum discharge during year, 1,570 cfs Apr. 12 (gage height, 4.37 ft); maximum gage height, 5.89 ft Dec. 21 (ice jam); minimum discharge, 42 cfs Aug. 29 (gage height, 0.63 ft).  
1915-52: Maximum discharge, 5,680 cfs May 2, 1923 (gage height, 9.40 ft); minimum, about 5 cfs several times in July and August 1921 (gates in dam closed).

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

Revisions.--W 821: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	50	2.0	353
.9	78	2.5	553
1.1	112	3.0	797
1.5	203	4.4	1,590

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	198	544	369	545	340	555	557	1,090	518	364	88	81
2	*190	549	371	555	345	600	782	1,010	547	360	86	132
3	190	618	360	540	325	590	909	894	681	371	83	226
4	171	797	346	525	320	585	1,010	782	772	408	81	257
5	164	894	342	510	355	595	1,110	681	853	408	40	233
6	150	909	404	490	410	615	1,230	604	995	416	80	251
7	161	899	599	*465	465	600	1,560	562	990	412	80	227
8	218	1,010	751	435	545	590	1,550	549	1,010	431	78	218
9	278	1,090	548	420	610	595	1,540	581	1,010	*455	78	198
10	328	1,090	379	350	610	620	1,540	647	990	459	76	186
11	336	1,050	643	345	595	670	1,550	623	965	481	80	173
12	319	980	782	330	575	710	1,560	613	990	427	80	164
13	290	594	695	320	560	*670	1,540	590	1,050	375	81	159
14	263	792	655	320	555	635	1,520	567	1,080	336	81	150
15	237	716	635	320	560	625	1,540	585	990	313	78	143
16	219	647	610	350	590	605	1,540	599	965	287	75	141
17	198	614	575	425	610	594	1,540	616	945	275	38	132
18	175	594	560	465	610	567	1,530	633	863	263	108	134
19	159	571	560	530	590	527	1,520	623	828	251	116	156
20	145	540	560	560	555	505	1,510	585	*909	246	116	173
21	134	501	600	555	520	432	1,500	558	833	240	*110	168
22	126	459	660	510	535	505	1,490	590	736	229	107	183
23	122	427	645	475	555	567	1,460	633	637	221	107	200
24	118	431	555	500	555	599	1,450	642	518	186	105	186
25	154	447	510	510	*535	599	*1,420	613	467	152	107	198
26	237	463	475	510	545	594	1,390	561	435	139	98	213
27	319	451	465	490	540	594	1,320	623	451	126	89	206
28	353	420	455	420	520	604	1,250	647	467	116	63	208
29	408	408	485	370	520	609	1,210	618	447	107	50	206
30	463	408	480	370	-	599	1,140	567	412	99	54	130
31	509	-	510	355	-	599	-	540	-	91	55	-
Total	7,322	20,217	17,588	13,985	14,960	16,394	40,668	20,048	23,569	9,014	2,654	5,470
Mean	236	674	567	448	516	593	1,356	647	779	291	85.6	182
Cfs/m	0.789	2.25	1.90	1.50	1.73	1.98	4.54	2.16	2.61	0.973	0.296	0.609
In.	0.91	2.51	2.19	1.73	1.87	2.28	5.07	2.49	2.91	1.12	0.33	0.68

Calendar year 1951: Max 2,410 Min 116 Mean 691 Cfs/m 2.31 In. 31.38

Water year 1951-52: Max 1,580 Min 50 Mean 529 Cfs/m 1.77 In. 24.09

Peak discharge (base, 1,500 cfs).--Apr. 12 (10 a.m.) 1,570 cfs (4.37 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28, Dec. 13 to Mar. 16 (no gage-height record Dec. 27-29, Jan. 26 to Feb. 1, Feb. 26 to Mar. 12; discharge estimated on basis of records for nearby stations).

## PENOBSCOT RIVER BASIN

Cold Stream at Enfield, Maine

Location--Lat 45°14'55", long. 68°34'05", on right bank 200 ft below site of old sawmill in Enfield, Penobscot County, 0.25 mile below outlet of Cold Stream Pond.

Drainage area--28.5 sq mi (revised).

Records available--September 1904 to December 1906 (discontinued).

Gage--Chain gage read once daily. Altitude of gage is 155 ft above mean sea level (from topographic map).

Extremes--1904-6: Maximum discharge not determined; minimum, 2 cfs Sept. 10, 1904, Aug. 12, 13, 14, 15, 1905 (gage height, 2.4 ft).

Remarks--Records fair.

Revisions--Figures of discharge for the entire period of record, September 1904 to December 1906, have been revised and are given herewith. They supersede those published in Water-Supply Paper 279.

Discharge, in cubic feet per second, 1904-5

1904

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 10	30	Sept. 16	64	Sept. 22	45	Sept. 28	45
11	45	17	64	23	45	29	45
12	45	18	64	24	64	30	86
13	29	19	45	25	64		
14	29	20	45	26	45		
15	64	21	45	27	45		

1904-5

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	54	13	13	24	40	60	353	53	34	30	7.0
2	64	37	24	13	40	24	42	254	35	34	17	7.0
3	64	37	24	24	24	40	42	*190	35	51	17	15
4	64	*75	24	24	24	13	60	196	53	51	8.5	15
5	86	37	40	13	24	13	60	114	53	51	8.5	27
6	45	37	40	13	24	13	82	71	53	51	8.5	15
7	45	37	24	13	24	40	82	37	53	34	8.5	15
8	45	37	24	40	24	40	42	*24	53	34	8.5	44
9	64	37	24	40	24	24	26	24	53	51	8.5	44
10	45	37	40	24	24	24	26	104	53	51	8.5	44
11	7.8	37	24	24	24	40	26	159	53	51	8.5	44
12	*29	37	40	24	24	40	26	150	35	51	3.4	44
13	29	22	40	24	24	24	26	122	53	51	3.4	44
14	29	22	24	13	24	24	14	122	35	71	3.4	44
15	29	22	13	13	40	24	26	96	53	71	3.4	27
16	45	23	13	13	24	24	26	96	53	51	8.5	27
17	79	23	24	40	24	13	26	35	35	34	8.5	27
18	79	56	24	40	24	13	14	35	35	51	8.5	27
19	79	38	13	24	24	24	14	21	53	51	8.5	44
20	79	23	24	40	24	24	26	35	53	51	8.5	44
21	*35	38	13	58	24	24	14	35	53	51	8.5	44
22	73	38	24	40	24	40	14	35	75	71	8.5	27
23	73	23	24	24	24	40	26	35	75	51	8.5	27
24	73	12	24	24	24	24	14	53	*73	51	8.5	27
25	73	23	13	24	24	24	14	53	53	71	8.5	27
26	73	38	13	13	24	40	14	*35	53	51	8.5	27
27	73	38	24	13	13	24	26	53	53	51	17	44
28	73	38	24	24	13	13	*42	53	53	71	8.5	44
29	73	23	13	24	-	24	257	53	53	51	8.5	44
30	73	12	24	13	-	40	290	53	53	34	8.5	44
31	73	-	13	13	-	40	-	53	-	20	8.5	-
Total	1,835.8	1,011	725	742	682	854	1,457	2,749	1,542	1,548	290.1	960.0
Mean	59.2	33.7	23.4	2.39	24.4	27.5	48.6	88.7	51.4	49.9	9.36	32.0
Cfsm	2.08	1.18	0.821	0.839	0.856	0.965	1.71	3.11	1.80	1.75	0.328	1.12
In.	2.40	1.32	0.95	0.97	0.89	1.11	1.91	3.58	2.01	2.02	0.38	1.25

Calendar year 1904: Max -

Min -

Mean -

Cfsm -

In. -

Water year 1904-5: Max 353

Min 3.4

Mean 39.4

Cfsm 1.38

In. 18.79

\* Discharge measurement made on this day.

## Cold Stream at Enfield, Maine--Continued

Discharge, in cubic feet per second, 1905-6

1905-6

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	13	23	12	22	12	34	84	112	68	37	24
2	24	13	12	2.0	22	22	34	84	112	68	37	24
3	24	24	12	12	12	22	34	84	86	68	37	24
4	13	24	12	12	12	22	34	84	86	92	37	40
5	13	24	12	12	12	12	20	109	112	92	54	40
6	24	24	12	5.2	12	12	51	109	112	92	54	24
7	24	24	23	12	12	21	51	109	112	68	54	24
8	13	13	23	12	4.8	21	71	109	112	68	37	24
9	13	13	23	12	22	21	51	84	112	68	37	24
10	13	13	12	12	22	21	71	84	159	68	37	24
11	13	24	56	12	22	11	51	62	317	68	37	24
12	24	24	38	22	22	11	51	62	280	68	37	24
13	24	13	12	22	12	11	*144	84	280	68	37	24
14	24	13	12	22	22	11	68	84	280	68	37	24
15	24	24	12	22	22	4.4	68	84	247	68	37	24
16	24	24	12	12	22	4.4	68	109	215	92	24	24
17	13	24	12	22	22	4.4	142	133	247	92	24	40
18	13	24	12	22	22	21	89	133	247	68	24	24
19	13	13	12	12	22	21	47	162	215	68	24	24
20	13	13	12	12	22	21	47	162	215	68	37	37
21	24	13	23	22	12	21	47	162	159	68	37	22
22	13	13	23	22	22	21	47	133	86	68	37	37
23	*13	13	12	22	22	11	136	133	64	68	37	37
24	13	13	12	12	*22	21	136	107	64	53	37	37
25	24	13	12	12	22	21	136	107	86	53	37	37
26	24	13	12	22	22	21	84	107	86	53	37	37
27	13	13	12	22	12	11	84	107	86	53	37	37
28	24	*23	12	12	12	11	84	107	112	37	22	37
29	24	23	12	12	-	34	84	107	112	37	22	37
30	24	23	12	12	-	20	*84	107	86	37	37	37
31	24	-	12	12	-	20	-	86	-	37	37	-
Total	590	541	508	465.2	508.8	501.6	2,148	3,278	4,599	2,044	1,116	896
Mean	19.0	18.0	16.4	15.0	18.2	16.2	71.6	106	153	65.9	36.0	29.9
Cfsm	0.667	0.632	0.575	0.526	0.639	0.568	2.51	3.72	5.37	2.31	1.26	1.05
In.	0.77	0.71	0.66	0.61	0.67	0.65	2.80	4.29	5.99	2.66	1.45	1.17
Calendar year 1905: Max	353				Min 3.4		Mean 34.1		Cfsm 1.20		In. 16.26	
Water year 1905-6: Max	317				Min 2.0		Mean 47.1		Cfsm 1.85		In. 22.43	

\* Discharge measurement made on this day.

1906

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	22	12	12	11	24	13	24	21	22	37	12
2	37	12	12	12	24	13	24	22	12	37	37
3	54	12	12	13	24	24	13	23	12	37	37
4	37	12	12	14	24	24	24	24	22	37	37
5	37	12	22	15	24	24	24	25	22	24	22
6	24	24	22	16	12	24	24	26	12	24	22
7	24	24	22	17	37	24	24	27	22	24	12
8	24	24	22	18	37	24	24	28	37	24	12
9	24	24	12	19	37	24	12	29	22	24	22
10	40	24	12	20	22	24	12	30	22	12	22
								31	22	-	37
Total									815	678	637
Mean									26.3	22.6	20.5
Cfsm									0.923	0.793	0.719
In.									1.06	0.88	0.83
Calendar year 1906: Max	317			Min 2.0		Mean 48.4		Cfsm 1.70		In. 23.06	

## Penobscot River at Passadumkeag, Maine

Location.--Lat 45°10'55", Long. 68°27'00", on left bank at Passadumkeag, Penobscot County, at head of Passadumkeag Rips, and 1,800 ft downstream from Passadumkeag River.

Drainage area.--7,000 sq mi, approximately (including about 240 sq mi drained by Chamberlain Lake through Telos Canal).

Records available.--November 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 123.8 ft above mean sea level, unadjusted.

Average discharge.--14 years (1938-52), 11,730 cfs (unadjusted).

Extremes.--Maximum discharge during year, 52,800 cfs Apr. 31 (gage height, 9.17 ft); minimum, 3,930 cfs Aug. 16 (gage height, 2.34 ft).  
1938-52: Maximum discharge, 126,000 cfs Apr. 14, 1940 (gage height, 13.62 ft); minimum, 2,600 cfs Sept. 1, 1941 (gage height, 2.44 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by several reservoirs above station (see p. 69).

Revisions (water years).--W 1171: 1940.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*6,400	10,400	9,180	10,200	11,900	10,400	11,900	33,700	14,400	8,900	5,170	4,250
2	8,400	11,200	8,550	10,000	11,500	10,400	11,900	30,600	17,300	8,600	5,070	4,280
3	8,540	13,900	9,750	9,860	11,700	10,100	13,700	27,900	31,100	8,270	4,900	4,520
4	6,350	30,300	10,200	9,480	10,300	10,200	15,800	25,100	28,200	7,820	4,710	4,870
5	6,120	33,800	10,500	9,320	10,500	10,400	16,800	22,500	27,800	6,550	4,610	4,810
6	5,990	26,900	11,200	9,530	10,900	10,500	20,800	17,500	26,400	7,560	5,040	4,520
7	5,770	22,300	22,800	8,850	11,600	10,300	25,800	15,900	25,500	7,150	4,900	4,400
8	5,730	27,200	30,500	9,030	11,200	10,100	29,300	15,400	33,300	7,900	4,810	4,400
9	6,880	34,800	29,700	9,060	11,200	10,400	29,700	15,900	35,600	7,730	4,610	4,310
10	8,180	31,800	26,300	9,180	11,000	10,500	30,300	16,200	33,400	6,580	4,490	4,450
11	8,080	27,600	22,700	8,800	11,000	10,200	33,900	16,100	29,700	5,870	4,460	4,520
12	7,690	23,500	20,500	8,700	11,000	11,200	37,000	15,700	30,700	6,120	4,460	4,550
13	7,430	21,100	15,600	8,800	10,800	11,800	35,900	19,600	31,000	6,220	4,370	4,650
14	7,270	18,900	11,800	8,850	10,800	11,900	35,000	23,300	30,200	5,560	4,280	4,650
15	6,010	17,200	10,000	8,960	11,000	12,200	39,600	21,400	27,300	6,010	4,220	4,340
16	5,980	16,500	10,900	9,640	10,700	11,400	42,400	20,500	23,500	5,640	4,080	4,310
17	6,150	16,200	11,000	10,300	10,700	10,800	42,500	23,400	16,900	5,630	5,100	4,460
18	5,900	17,200	11,000	12,100	10,500	10,700	41,600	23,200	15,200	5,700	4,610	4,580
19	5,840	15,400	11,000	13,100	10,800	10,200	42,100	21,000	14,400	5,600	*4,520	4,550
20	5,900	15,700	11,300	15,000	10,800	10,100	44,300	20,900	13,300	5,530	4,460	4,680
21	5,730	14,200	11,600	14,900	10,700	10,100	50,100	22,700	12,700	4,840	4,430	4,710
22	5,200	13,000	13,000	14,800	10,500	10,700	51,400	27,400	11,400	5,070	4,430	4,400
23	5,900	12,300	13,600	14,600	10,400	10,700	48,100	29,800	10,100	5,100	4,280	4,400
24	5,530	12,400	14,400	14,900	10,200	10,600	47,400	28,700	10,500	5,200	4,460	4,740
25	6,260	12,100	14,700	14,900	9,920	10,500	*45,800	26,100	10,200	5,040	4,280	4,610
26	10,100	10,600	14,100	14,700	10,000	10,500	42,400	22,200	10,300	4,810	4,250	4,840
27	12,100	9,100	14,200	14,200	10,200	10,500	40,400	20,000	10,300	4,840	4,190	4,580
28	10,500	8,900	13,400	13,200	10,300	10,500	38,900	19,200	10,300	4,770	4,050	4,460
29	9,700	9,250	12,500	12,700	10,300	10,700	38,000	17,700	9,750	5,010	4,050	4,250
30	10,500	9,430	11,500	12,600	-	10,600	35,600	15,700	8,560	5,730	4,370	4,460
31	9,700	-	10,200	12,600	-	10,800	-	15,000	-	5,130	4,250	-
Total	221,930	544,350	448,340	352,820	312,520	329,700	*1,038,6	670,500	609,210	191,820	139,910	135,530
Mean	7,159	18,140	14,460	11,360	10,760	10,640	34,620	21,630	20,310	6,188	4,513	4,518
(†)	-2,097	+2,472	+32	-1,729	-2,860	-2,968	+8,520	+6,506	-341	-3,664	-4,287	-3,157

Adjusted for change in reservoir contents

Mean	5,062	20,610	14,490	9,651	7,920	7,674	43,140	28,140	19,970	2,324	226	1,361
Cfsm	0.723	2.94	2.07	1.38	1.13	1.10	6.16	4.02	2.85	0.532	0.032	0.144
In.	0.83	3.28	2.39	1.59	1.22	1.27	6.87	4.64	3.18	0.38	0.04	0.22

			Observed			Adjusted						
Calendar year 1951:	Max	77,000	Min	5,130	Mean	14,620	Mean	14,650	Cfsm	2.09	In.	28.39
Water year 1951-52:	Max	51,400	Min	4,050	Mean	13,650	Mean	13,330	Cfsm	1.90	In.	25.91

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in several reservoirs above station.

# Expressed in thousands.

Note.--Stage-discharge relation affected by ice Nov. 26 to Dec. 5, Dec. 13 to Mar. 5, Mar. 13 to Apr. 8.

## Kenduskeag Stream near Kenduskeag, Maine

Location.--Lat 44°53'50", long. 68°53'00", on right bank 300 ft upstream from highway bridge, 1.8 miles downstream from Black Stream, and 2.9 miles south of Kenduskeag, Penobscot County.

Drainage area.--178 sq mi.

Records available.--October 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 97 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,840 cfs Apr. 7 (gage height, 9.01 ft); minimum, 1.5 cfs Aug. 30 (gage height, 1.12 ft).  
1941-52: Maximum discharge, 4,040 cfs May 19, 1948, and Apr. 4, 1951; maximum gage height, 12.56 ft Mar. 11, 1942 (ice jam); minimum discharge, 1.0 cfs Sept. 30, Oct. 1, 1948 (gage height, 1.09 ft).

Remarks.--Records good except those for period of ice effect, which are fair. An artificial cut has been made through a low divide between Souadabscook Stream and Black Stream which enters Kenduskeag Stream 1.8 miles above station. During high stages of Souadabscook Stream, part of its flow passes through the cut into Kenduskeag Stream; at low stages of Souadabscook Stream, all flow continues down its own channel.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*32	255	245	340	430	194	1,140	194	153	49	6.0	1.9
2	30	230	220	345	425	180	1,280	173	665	46	6.0	5.4
3	29	755	190	360	420	170	1,850	155	1,120	42	5.7	5.7
4	27	1,820	180	330	430	160	2,190	133	682	41	5.4	7.5
5	29	1,400	280	305	515	152	2,170	108	544	40	5.0	6.5
6	28	954	560	280	*820	150	2,390	106	453	38	4.1	4.7
7	28	570	1,120	255	720	152	2,810	115	398	37	3.8	3.1
8	38	1,510	1,040	235	620	162	2,510	124	453	35	3.1	2.6
9	64	1,540	925	215	520	170	2,080	132	330	34	2.8	2.4
10	64	1,110	765	196	460	*162	1,770	137	258	30	2.6	2.3
11	53	834	640	188	405	176	1,730	133	216	30	3.4	2.3
12	47	856	555	178	420	265	1,550	186	223	30	4.4	2.1
13	44	537	500	172	390	400	1,240	524	223	26	5.4	3.8
14	39	482	460	172	345	405	1,060	440	173	24	5.4	5.7
15	40	431	425	180	315	365	1,200	398	142	22	5.4	10
16	37	407	390	205	280	340	1,190	381	122	22	4.1	9.0
17	36	459	370	235	270	325	954	540	110	20	4.7	6.5
18	33	478	345	285	260	310	779	422	106	20	*4.7	5.7
19	32	395	335	340	255	300	678	330	100	19	6.0	5.4
20	32	330	320	430	245	300	608	266	90	17	6.0	6.5
21	29	256	335	555	240	335	899	293	79	14	4.4	6.5
22	27	207	365	510	235	430	*450	632	71	14	3.8	6.5
23	26	203	390	490	230	655	392	550	63	12	3.1	6.5
24	26	273	430	615	220	655	330	413	60	12	2.6	6.5
25	96	361	450	555	215	610	278	317	54	11	2.3	6.0
26	235	251	420	495	210	590	251	273	53	11	2.1	5.7
27	198	239	390	535	205	640	232	378	58	11	2.1	6.5
28	180	240	360	515	205	800	203	319	62	10	1.7	6.0
29	162	*255	340	490	198	870	203	251	53	9.0	1.7	5.7
30	230	265	330	465	-	955	225	218	51	8.0	1.7	5.0
31	235	-	*330	450	-	1,060	-	188	-	7.5	1.9	-
Total	2,216	17,683	14,005	10,921	10,503	12,438	34,642	8,830	7,165	741.5	121.4	158.0
Mean	71.5	589	452	352	362	401	1,155	285	239	23.9	3.92	5.27
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 3,820 Min 26 Mean 375 Cfsm - In. -  
Water year 1951-52: Max 2,810 Min 1.7 Mean 326 Cfsm - In. -

Peak discharge (base, 1,600 cfs).--Nov. 4 (11 a.m.) 1,900 cfs (7.20 ft); Nov. 8 (12 p.m.) 1,680 cfs (6.73 ft); Apr. 7 (7 to 8 a.m.) 2,840 cfs (9.01 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28 to Apr. 1 (no gage-height record Nov. 30 to Dec. 30; discharge estimated on basis of records for nearby stations).

## Kenduskeag Stream near Bangor, Maine

Location.--Lat 44°51'40", long. 68°49'55", on downstream side near center of right span of highway bridge on Route 15, 6 miles northwest of Bangor, Penobscot County, just below Six Mile Falls.

Drainage area.--195 sq mi (revised).

Records available.--October 1908 to September 1919 (discontinued).

Gage.--Chain gage. Altitude of gage is 79 ft (from topographic map).

Average discharge.--11 years, 405 cfs.

Extremes.--1913-14: Maximum discharge during water year, 4,800 cfs (revised) Apr. 21 (gage height, 9.35 ft, from graph based on gage readings); minimum daily, 12 cfs Sept. 23. 1908-19: Maximum discharge, 6,300 cfs (revised), Apr. 15, 1909 (gage height, 10.45 ft, from graph based on gage readings), from rating curve extended above 3,600 cfs by logarithmic plotting; minimum, 7 cfs Sept. 15 to Oct. 1, 1908, and Oct. 11-16, 1914 (gage height, 1.30 ft).

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
501.....	1909	Apr. 15, 1909	6,300	10.45
381.....	1914	Apr. 21, 1914	4,800	9.35
401.....	1915	May 2, 1915	3,770	8.30
431.....	1916	Apr. 2, 1916	3,500	8.00
451.....	1917	Apr. 8, 1917	5,400	9.65
471.....	1918	Apr. 4, 1918	4,610	8.92
501.....	1919	Mar. 23, 1919	4,300	8.60

Remarks.--An artificial cut has been made through a low divide between Souadabscook Stream and Black Stream which enters Kenduskeag Stream 7.3 miles above station. During high stages of Souadabscook Stream, part of its flow passes through the cut into Kenduskeag Stream; at low stages of Souadabscook Stream, all flow continues down its own channel. At odd times amount of diversion has been measured. When flow at gaging station is above 900 cfs, current meter measurements have shown that Souadabscook Stream has accounted for 7.5 percent of this.

Revisions.--Revised figures of discharge, in cubic feet per second, for water years 1909-15, 1917-18, superseding figures published in previous water-supply papers, are given herein. Complete table of daily discharge is given for water year 1914, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1908		1909		1910		1913	
Dec. 9.....	134	Dec. 14.....	245	Feb. 24.....	240	Jan. 1.....	400
10.....	118	15.....	240	25.....	230	2.....	510
11.....	106	16.....	230	26.....	230	3.....	665
12.....	102	17.....	220	27.....	235	4.....	725
13.....	98	18.....	205	28.....	275	5.....	615
14.....	96	19.....	200	Mar. 1.....	400	6.....	550
15.....	91	20.....	190	2.....	510	7.....	500
16.....	83	21.....	186	3.....	615	8.....	465
17.....	77	22.....	180	4.....	700	9.....	440
18.....	65	23.....	176	5.....	760	10.....	425
19.....	58	24.....	170	6.....	840	11.....	415
20.....	53	25.....	160	7.....	1,000	12.....	410
21.....	50	26.....	152	8.....	1,170	13.....	410
22.....	45	27.....	142	9.....	1,030	14.....	415
23.....	43	28.....	134	10.....	925	15.....	430
24.....	45	29.....	124	11.....	845	16.....	460
25.....	45	30.....	114	12.....	785	17.....	495
26.....	45	31.....	108	13.....	795	18.....	540
27.....	45					19.....	575
28.....	45	1910		1911		20.....	615
29.....	45	Jan. 23.....	900	Jan. 1.....	375	21.....	575
30.....	45	24.....	1,140	2.....	305	22.....	525
31.....	45	25.....	1,050	3.....	280	23.....	465
		26.....	940	4.....	320	24.....	415
1909		27.....	845	5.....	390	25.....	365
Jan. 1.....	45	28.....	745	6.....	365	26.....	345
2.....	45	29.....	685	7.....	305	27.....	340
3.....	45	30.....	605	8.....	255	28.....	340
4.....	43	31.....	540	9.....	220	29.....	335
5.....	41	Feb. 1.....	485	10.....	220	30.....	330
6.....	72	2.....	430	11.....	166	31.....	315
7.....	650	3.....	390	12.....	152	Feb. 1.....	290
8.....	625	4.....	350	13.....	146	2.....	270
9.....	545	5.....	320	14.....	136	3.....	355
10.....	360	6.....	275	15.....	132	4.....	245
11.....	270	7.....	250	Dec. 30.....	1,190	5.....	235
12.....	225	8.....	215	31.....	1,070	6.....	225
13.....	205	9.....	184			7.....	215
14.....	196	10.....	166	1912		8.....	205
Apr. 3.....	1,270	11.....	152	Dec. 22.....	360	9.....	196
4.....	1,260	12.....	146	23.....	330	10.....	186
5.....	1,270	13.....	150	24.....	310	11.....	176
6.....	1,300	14.....	156	25.....	295	12.....	164
7.....	1,450	15.....	162	26.....	285	13.....	156
8.....	1,620	16.....	170	27.....	275	14.....	148
9.....	1,680	17.....	184	28.....	270	15.....	136
10.....	1,720	18.....	190	29.....	270	16.....	128
11.....	1,810	19.....	200	30.....	270	17.....	120
Dec. 11.....	255	20.....	215	31.....	295	18.....	110
12.....	250	21.....	230			19.....	102
13.....	250	22.....	240			20.....	97

## Kenduskeag Stream near Bangor, Maine--Continued

Revised figures of discharge, in cubic feet per second, 1909-15, 1917-18--Continued

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1913		1915		1918		1918	
Feb. 21.....	91	Jan. 7.....	325	Jan. 8.....	65	Aug. 4.....	72
22.....	84	8.....	305	9.....	65	5.....	65
23.....	82	9.....	275	10.....	65	6.....	80
24.....	78	10.....	225	11.....	58	7.....	65
25.....	77	11.....	176	12.....	58	8.....	80
26.....	71	12.....	136	13.....	50	9.....	72
27.....	67	13.....	112	14.....	65	10.....	130
28.....	61	14.....	86	15.....	72	11.....	170
Mar. 1.....	57	15.....	71	16.....	72	12.....	180
2.....	58	16.....	67	17.....	72	13.....	190
3.....	58	17.....	64	18.....	80	14.....	180
4.....	57	18.....	82	19.....	88	15.....	215
5.....	56	19.....	178	20.....	95	16.....	190
6.....	58	20.....	615	21.....	95	17.....	170
7.....	55	21.....	555	22.....	95	18.....	160
8.....	55	22.....	470	23.....	88	19.....	120
9.....	55	23.....	370	24.....	80	20.....	88
10.....	55	24.....	305	25.....	72	21.....	58
11.....	55			26.....	82	22.....	65
12.....	57	1918		27.....	65	23.....	80
13.....	65	Jan. 1.....	65	28.....	65	24.....	95
14.....	76	2.....	65	29.....	65	25.....	95
15.....	86	3.....	65	30.....	65	26.....	80
16.....	1,370	4.....	65	31.....	65	27.....	65
17.....	2,100	5.....	65	Aug. 1.....	130	28.....	58
18.....	2,520	6.....	65	2.....	102	29.....	45
19.....	2,870	7.....	65	3.....	88	30.....	40
						31.....	40

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1908.....	145	43	80.7	0.414	0.48
January 1909.....	650	41	184	.944	1.09
April.....	5,800	707	2,060	10.56	11.78
Water year 1908-9.....	5,800	7	389	1.99	27.01
December 1909.....	707	108	302	1.55	1.79
Calendar year 1909.....	5,800	9.5	475	2.44	35.05
January 1910.....	1,140	42	298	1.53	1.76
February.....	485	146	238	1.22	1.27
March.....	1,240	400	809	4.15	4.78
Water year 1909-10.....	3,860	12	311	1.59	21.68
Calendar year 1910.....	1,240	12	217	1.11	15.14
January 1911.....	390	84	173	.887	1.02
Water year 1910-11.....	3,120	12	263	1.35	18.35
December 1911.....	2,050	276	818	4.19	4.83
Calendar year 1911.....	3,120	18	349	1.79	24.31
Water year 1911-12.....	2,600	34	413	2.12	28.85
December 1912.....	870	270	508	2.61	3.01
Calendar year 1912.....	2,820	34	471	2.42	32.90
January 1913.....	725	315	465	2.38	2.74
February.....	355	61	156	.800	.83
March.....	3,540	55	1,430	7.33	8.45
Water year 1912-13.....	3,540	22	497	2.55	34.58
January 1915.....	615	18	182	.933	1.08
Water year 1914-15.....	3,680	7	320	1.64	22.29
Calendar year 1915.....	3,680	18	407	2.09	28.52
January 1918.....	95	50	70.2	.360	.42
August.....	215	40	105	.538	.62
Water year 1917-18.....	4,370	29	430	2.20	29.95
Calendar year 1918.....	4,370	29	510	2.62	35.50

## Kenduskeag Stream near Bangor, Maine--Continued

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	538	465	158	235	106	920	845	188	51	40	45
2	51	431	483	152	210	305	1,440	855	156	64	30	34
3	57	414	448	146	188	700	1,560	596	110	71	45	40
4	71	465	398	142	176	1,120	1,430	538	137	71	45	34
5	78	501	350	136	164	1,070	1,240	722	166	51	34	30
6	86	520	414	132	156	980	1,100	700	249	45	30	34
7	102	483	431	132	148	885	950	655	335	45	25	45
8	110	414	465	132	142	785	805	615	276	34	25	34
9	128	366	483	132	136	695	685	950	211	34	22	25
10	128	366	414	128	126	620	615	1,240	156	40	25	25
11	102	414	382	126	120	540	560	1,040	119	45	25	25
12	102	431	370	124	114	485	530	770	94	45	34	18
13	146	465	365	124	110	450	510	615	119	34	34	18
14	188	414	370	120	102	405	490	501	137	34	40	22
15	223	431	410	120	94	365	500	414	128	25	45	18
16	249	465	410	120	91	345	720	398	137	40	45	18
17	223	448	390	120	84	330	1,340	350	119	45	34	22
18	199	465	365	116	78	320	1,610	305	128	34	45	25
19	188	501	335	116	76	305	2,260	236	137	45	45	22
20	199	501	310	116	72	290	3,100	199	119	45	40	18
21	290	538	295	116	70	275	4,500	211	137	40	34	18
22	538	483	275	122	67	270	4,200	211	128	34	25	18
23	700	465	255	160	65	255	3,230	177	128	34	25	12
24	950	414	235	230	64	245	1,720	146	128	34	18	15
25	1,150	448	220	335	63	235	1,470	177	128	34	25	18
26	1,270	431	205	555	60	230	1,270	156	78	30	25	18
27	1,610	398	200	625	68	230	1,060	137	71	34	34	18
28	1,500	398	190	520	58	225	978	137	71	40	40	15
29	1,180	414	180	420	-	220	1,060	137	64	45	51	18
30	870	448	172	350	-	225	950	199	57	45	57	18
31	678	-	164	290	-	275	-	211	-	45	51	-
Total	13,417	13,470	10,449	6,315	3,127	13,786	42,603	41,233	4,211	1,313	1,093	720
Mean	432	449	337	204	112	445	1,430	459	140	40	35	24
Cfsm	2.22	2.30	1.73	1.05	0.574	2.26	7.33	2.35	0.718	0.215	0.179	0.123
In.	2.56	2.57	1.99	1.21	0.60	2.63	8.18	2.71	0.80	0.25	0.21	0.14
Calendar year 1913:	Max	3,540	Min	22	Mean	442	Cfsm	2.27	In.	30.77		
Water year 1913-14:	Max	4,500	Min	12	Mean	342	Cfsm	1.75	In.	23.85		
Calendar year 1914:	Max	4,500	Min	7	Mean	251	Cfsm	1.29	In.	17.47		

Note.--Stage-discharge relation affected by ice Dec. 12 to Apr. 16.



## Reservoirs in Penobscot River basin, Maine

Chesuncook, Ripogenus, and Caribou Lakes and Moose Pond in West Branch Penobscot River basin are controlled by Ripogenus Dam, in T. 3, R. 11, Piscataquis County, 36 miles upstream from Millinocket and 42 miles northeast of Greenville; present dam completed in 1917 for power and log driving; usable capacity of reservoir, 30,000,000,000 cu ft. Records furnished by Great Northern Paper Co.

Ambajejus, Pemadumcook, North Twin, South Twin, and Elbow Lakes in West Branch Penobscot River basin are controlled by North Twin Dam, 3 miles upstream from Millinocket, Penobscot County, for power and log driving; usable capacity of reservoir, 15,000,000,000 cu ft. Records furnished by Great Northern Paper Co.

Chamberlain and Telos Lakes and Round Pond in East Branch Penobscot River basin are controlled by dams at outlet of Chamberlain and Telos Lakes; although regulation is at Telos Dam, in T. 6, R. 11, Piscataquis County. Telos Dam rebuilt during 1941; usable capacity, 5,040,000,000 cu ft between gage heights 2.0 and 11.0 ft. Records furnished by Bangor Hydro-Electric Co.

Second and Grand Lakes in East Branch Penobscot River basin are controlled by dam rebuilt in 1942 at outlet of Grand Lake, in T. 6, R. 8, Penobscot County; usable capacity, 1,785,000,000 cu ft between gage heights 643.0 and 655.0 ft. Records furnished by Bangor Hydro-Electric Co.

Sebec Lake on Sebec River at Sebec, Piscataquis County, used for power and log driving; usable capacity, 2,511,000,000 cu ft between gage heights 91 and 100 ft. Gage-height record furnished by Bangor Hydro-Electric Co.

Wilson Pond on Wilson Stream, 2½ miles east of Greenville, Piscataquis County, used for power; usable capacity, 390,000,000 cu ft between gage heights 27.5 and 33.5 ft. Gage-height record furnished by Central Maine Power Co.

Monthly change in contents, in millions of cubic feet, water year October 1951 to September 1952

Month	Chesuncook, Ripogenus, Caribou, Ambajejus, Pemadumcook, North Twin, South Twin, and Elbow Lakes and Moose Pond†	Chamberlain, Telos, Second, and Grand Lakes and Round Pond	Wilson Pond and Sebec Lake
October.....	-4,832	-819	+34
November.....	+4,570	+1,210	+627
December.....	+1,326	-882	-359
Calendar year 1951.....	-154	+1,315	-206
January.....	-3,443	-864	-324
February.....	-4,983	-2,013	-170
March.....	-5,848	-1,241	-854
April.....	+18,387	+1,882	+1,816
May.....	+14,061	+3,181	+182
June.....	-992	+223	-115
July.....	-9,213	-532	-604
August.....	-10,400	-821	-260
September.....	-7,334	-707	-141
Water year 1951-52.....	-8,701	-1,383	-167

† Includes change in contents of following additional reservoirs in West Branch Penobscot River basin; used primarily for log driving (total capacity, approximately 10,000,000,000 cu ft): Sebomcook, Penobscot, Lobster, Shallow, Caucomgomoc, Loon, Umbazooksus, Harrington, Ragged, Sourdunhunk, and Rainbow Lakes, Canada Falls Reservoir and Poland Pond.

## SHEEPSCOT RIVER BASIN

## Sheepscot River at North Whitefield, Maine

Location.--Lat 44°13'20", long. 69°35'40", on left bank at North Whitefield, Lincoln County, just upstream from highway bridge and half a mile downstream from Pleasant Pond Brook.

Drainage area.--148 sq mi.

Records available.--October 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 101.1 ft above mean sea level, datum of 1929.

Average discharge.--14 years, 223 cfs.

Extremes.--Maximum discharge during year, 1,820 cfs Apr. 6 (gage height, 6.35 ft); minimum, 12 cfs Sept. 1 (gage height, 1.86 ft).

1938-52: Maximum discharge, 5,360 cfs Apr. 13, 1940 (gage height, 11.81 ft, backwater from fish weir), from rating curve extended above 1,900 cfs by logarithmic plotting; minimum, 5.0 cfs Oct. 24, 1941 (gage height, 1.70 ft).

Remarks.--Records excellent except those for days of fragmentary gage heights, those for periods of ice effect, and those for days of no gage-height record, which are fair. Some regulation at low flow by sawmill at North Whitefield.

Revisions.--Revised figures of discharge, in cubic feet per second, for low-water period in the water year 1940, superseding figures published in Water-Supply Paper 891, are given herewith:

Date	Discharge	Date	Discharge	Date	D1	Charge
1939		1939		1939		
Oct. 1	21	Oct. 12	14	Oct. 23	17	
2	22	13	13	24	19	
3	20	14	12	25	16	
4	18	15	12	26	17	
5	18	16	14	27	26	
6	17	17	14	28	20	
7	20	18	14	29	17	
8	17	19	14	30	18	
9	23	20	12	31	29	
10	21	21	12			
11	16	22	14			

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October 1939.....	29	12	17.3	0.117	0.13
Calendar year 1939.....	1,830	12	183	1.24	16.74
Water year 1939-40.....	4,720	12	239	1.61	22.00

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	172	268	487	588	205	614	265	205	49	23	13
2	31	182	255	487	522	205	830	222	415	46	22	21
3	34	690	246	464	468	200	*1,180	228	364	43	22	21
4	39	820	234	438	505	190	1,130	219	281	41	21	19
5	39	580	240	395	795	188	1,180	213	268	40	22	18
6	40	567	605	380	703	191	1,690	205	258	40	24	16
7	41	790	658	365	640	196	1,740	210	249	37	24	15
8	61	1,290	575	342	580	193	1,640	207	243	36	24	14
9	72	1,030	575	325	542	185	1,400	199	213	36	24	14
10	70	1,000	584	295	491	177	1,280	196	191	35	27	14
11	64	960	526	274	495	205	1,190	188	172	35	34	15
12	59	860	483	260	708	525	1,070	287	162	34	30	15
13	54	740	426	246	595	530	943	356	152	34	32	15
14	52	620	371	234	530	491	872	287	141	33	32	16
15	51	570	335	246	480	461	916	274	128	31	29	16
16	50	530	294	430	423	442	811	281	117	30	28	16
17	50	510	268	438	382	434	703	307	113	30	34	17
18	49	490	262	590	328	404	649	287	104	29	33	17
19	48	450	346	667	342	382	605	265	102	28	32	21
20	47	400	349	700	356	*360	559	246	98	28	29	23
21	46	345	900	838	332	389	526	290	94	27	27	21
22	44	287	1,030	722	310	476	476	346	82	27	27	20
23	44	280	860	287	514	287	514	423	307	74	27	25
24	43	314	816	1,240	271	464	393	297	67	27	24	15
25	220	321	731	1,080	255	461	356	281	64	*26	21	15
26	250	332	662	1,020	237	499	346	262	61	*25	17	15
27	138	404	588	1,180	225	580	328	269	60	25	15	15
28	121	324	520	1,060	216	640	304	246	59	25	14	15
29	225	318	468	932	210	623	314	228	55	25	14	15
30	199	287	442	790	-	610	307	219	52	24	14	15
31	172	-	480	680	-	632	-	207	-	23	14	-
Total	2,465	16,483	15,397	18,865	12,816	12,052	24,775	7,923	4,644	996	758	493
Mean	80.2	549	497	609	442	389	828	256	155	32.1	24.5	16.6
Cfsm	0.542	3.71	3.36	4.11	2.99	2.63	5.58	1.73	1.05	0.217	0.166	0.112
In.	0.62	4.14	3.87	4.74	3.22	3.03	6.23	1.99	1.17	0.25	0.19	0.12
Calendar year 1951: Max	1,420				Min 31	Mean 331	Cfsm 2.24	In. 30.34				
Water year 1951-52: Max	1,740				Min 13	Mean 322	Cfsm 2.18	In. 29.57				

Peak discharge (base, 1,100 cfs).--Nov. 7 (10 p.m.) 1,320 cfs (5.54 ft); Dec. 21 (10 p.m.) 1,200 cfs (5.33 ft); Jan. 23 (7 p.m.) 1,510 cfs (5.86 ft); Apr. 3 (4 a.m.) 1,230 cfs (5.38 ft); Apr. 6 (7 to 8 p.m.) 1,820 cfs (6.35 ft).

\* Discharge measurement made on this day.  
† Fragmentary gage-height record; discharge computed on basis of partly estimated gage height.

Note.--No gage-height record Nov. 9-21, Sept. 9-16; discharge estimated on basis of weather records and records for nearby stations. Stage-discharge relation affected by ice Dec. 28, Jan. 5-7, 9-10, 12, Feb. 13-14, Mar. 1-4.

## Moose River near Rockwood, Maine

Location.--Lat 45°39'40", long. 69°48'50", on left bank 3 miles upstream from mouth and 4 miles west of Rockwood, Somerset County.

Drainage area.--708 sq mi.

Records available.--September 1902 to December 1908, May 1910 to September 1912, November 1919 to September 1925 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,035 ft (from topographic map). Prior to Oct. 1, 1921, staff or chain gage at site 0.9 mile downstream at datum 10 ft lower.

Average discharge.--14 years (1902-8, 1910-12, 1919-25), 1,200 cfs.

Extremes.--1907-8, 1910-11, 1919-25: Maximum discharge, 12,200 cfs May 1, 1923 (gage height, 9.58 ft), from rating curve extended above 5,200 cfs by logarithmic plotting; minimum, 53 cfs Dec. 16, 1904 (gage height, 1.30 ft).

Remarks.--Flow partly regulated by log-driving dams during April to June.

Revisions.--Revised figures of discharge, in cubic feet per second, for some periods in the water years 1902-9, 1910-12, superseding figures published in Water-Supply Papers 198, 241, 281, 301, and 321, are given herein. Complete tables of daily discharge are given for the period September 1902 to December 1908 and for the water year 1912, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1910		1910		1911	
June 1.....	2,320	July 3.....	2,020	May 7.....	6,320
2.....	3,075	4.....	2,080	8.....	6,840
3.....	3,630	5.....	1,855	9.....	6,880
4.....	4,000	6.....	1,210	10.....	6,560
5.....	3,350	7.....	1,005	11.....	6,240
6.....	3,700	8.....	1,005	12.....	5,440
7.....	3,630	9.....	1,040	13.....	4,900
8.....	2,320			14.....	4,525
9.....	2,320			15.....	4,375
10.....	2,380	Apr. 1.....	142	16.....	4,000
11.....	2,200	2.....	145	17.....	3,140
12.....	1,965	3.....	145	18.....	2,685
13.....	2,020	4.....	158	19.....	2,320
14.....	2,020	5.....	172	20.....	2,200
15.....	2,020	6.....	186	21.....	1,965
16.....	1,855	7.....	186	22.....	1,800
17.....	1,745	8.....	198	23.....	1,640
18.....	1,855	9.....	198	24.....	1,390
19.....	1,690	23.....	1,004	25.....	1,300
20.....	1,640	24.....	1,165	26.....	1,210
21.....	1,690	25.....	1,345	27.....	1,210
22.....	1,800	26.....	1,540	28.....	1,300
23.....	1,800	27.....	1,855	29.....	1,345
24.....	1,910	28.....	2,815	30.....	1,440
25.....	1,690	29.....	3,700	31.....	1,345
26.....	1,640	30.....	4,600	June 1.....	1,255
27.....	1,640	May 1.....	5,280	2.....	1,210
28.....	1,590	2.....	6,720	3.....	1,165
29.....	1,540	3.....	6,960	4.....	1,080
30.....	1,800	4.....	7,040	7.....	1,040
July 1.....	1,855	5.....	6,880		
2.....	1,965	6.....	6,560		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
June 1910.....	4,000	1,540	2,228	-	-
July.....	2,080	303	828	-	-
April 1911.....	4,600	142	860	-	-
May.....	7,040	1,210	3,923	-	-
June.....	1,255	707	900	-	-
Water year 1910-11.....	7,040	80	732	1.03	13.96

## KENNEBEC RIVER BASIN

## Moose River near Rockwood, Maine--Continued

Discharge, in cubic feet per second, 1902-3

1902							
Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 4	414	Sept. 11	414	Sept. 18	584	Sept. 25	1,120
5	375	12	454	19	584	26	1,080
6	375	13	454	20	661	27	1,040
7	375	14	518	21	846	28	1,040
8	375	15	562	22	1,040	29	1,004
9	375	16	584	23	1,120	30	968
10	414	17	608	24	1,120		

1902-3												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	968	1,910	906	560	370	640	5,125	3,210	1,530	580	608	303
2	968	1,910	906	530	370	600	4,675	3,280	1,500	560	584	254
3	906	1,830	906	510	360	560	4,525	3,075	1,480	540	631	270
4	876	1,890	846	490	350	520	4,300	3,100	1,410	520	584	239
5	846	1,840	846	480	340	500	4,525	3,200	1,370	510	584	270
6	846	1,590	846	470	340	490	4,450	3,100	1,320	500	539	238
7	846	1,490	817	460	350	500	4,525	3,000	1,300	496	562	254
8	906	1,490	760	450	450	520	4,075	2,900	1,270	454	496	203
9	906	1,345	707	440	500	540	4,150	2,850	1,220	496	496	239
10	876	1,300	681	430	540	600	3,850	2,750	1,180	454	454	194
11	846	1,210	631	430	540	600	4,075	2,700	1,150	496	454	203
12	846	1,165	608	420	500	2,000	3,925	2,700	1,130	454	454	180
13	788	1,120	584	420	450	1,900	4,075	2,700	1,100	454	454	203
14	788	1,120	584	420	410	1,700	3,850	2,600	1,080	414	414	180
15	788	1,120	539	420	380	1,600	4,000	2,550	1,040	454	434	208
16	788	1,120	539	410	370	1,600	3,925	2,500	1,000	414	375	152
17	785	1,210	539	410	350	1,600	4,000	2,500	960	496	414	180
18	760	1,210	539	410	330	1,700	3,490	2,400	920	454	375	152
19	733	1,210	539	410	320	2,000	3,490	2,300	880	496	434	180
20	788	1,210	539	410	310	2,300	3,280	2,300	840	454	475	138
21	846	1,210	539	410	290	3,280	3,280	2,200	820	496	562	152
22	876	1,210	562	410	340	3,210	2,945	2,150	770	434	518	124
23	906	1,210	584	400	400	3,350	3,010	2,100	740	475	518	152
24	906	1,210	584	400	470	4,300	2,880	2,050	720	454	454	124
25	906	1,165	584	400	530	5,050	3,140	2,000	710	475	454	124
26	876	1,120	584	400	600	5,440	2,880	1,950	690	414	375	97
27	846	1,090	584	390	640	5,920	3,010	1,850	660	434	394	124
28	906	1,040	584	390	650	5,840	2,945	1,750	650	375	320	97
29	1,345	1,004	584	380	-	5,840	3,010	1,660	620	414	338	124
30	1,745	968	584	380	-	5,440	3,010	1,600	600	394	270	83
31	1,910	-	584	380	-	5,440	-	1,550	-	496	303	-
Total	28,925	39,077	20,219	13,320	11,850	76,280	112,420	76,575	30,660	14,557	14,327	5,457
Mean	933	1,303	652	430	423	2,461	3,747	2,470	1,022	470	462	162
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1902: Max	-	-	-	Min	-	Mean	-	Cfsm	-	In.	-	-
Water year 1902-3: Max	5,920	-	5,920	Min	86	Mean	1,216	Cfsm	1.72	In.	23.30	-

## Moose River near Rockwood, Maine--Continued

Discharge, in cubic feet per second, water year October 1903 to September 1904

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97	97	124	670	445	400	3,000	4,375	1,855	1,210	375	303
2	74	74	97	600	455	405	2,700	4,900	1,800	1,165	375	320
3	97	97	124	550	425	410	2,350	5,280	1,745	1,300	375	338
4	74	74	97	500	420	420	2,100	5,200	1,440	1,390	375	394
5	97	97	124	475	410	425	2,050	5,520	1,440	1,300	338	518
6	74	97	97	450	408	600	2,100	5,920	1,745	1,210	303	608
7	97	124	124	440	405	1,150	2,200	5,680	1,910	1,090	303	631
8	74	97	97	450	405	1,950	2,350	5,520	2,200	1,004	270	631
9	97	124	124	440	400	5,500	2,500	5,440	2,320	908	270	608
10	74	97	110	480	390	3,150	2,650	5,600	2,260	846	254	584
11	97	138	152	485	380	2,900	2,500	6,640	2,320	817	270	584
12	74	124	124	520	375	2,500	2,250	8,320	2,560	760	303	562
13	97	152	152	550	370	2,200	2,000	8,400	2,320	768	303	539
14	74	124	124	590	370	2,000	1,800	7,760	2,020	760	338	539
15	97	152	110	570	365	1,800	1,630	6,800	1,855	733	375	562
16	74	124	53	560	365	1,650	1,500	6,480	1,640	681	375	681
17	97	152	110	540	355	1,550	1,450	6,480	1,440	656	375	617
18	74	152	150	510	350	1,500	1,400	6,080	1,300	584	338	846
19	97	180	165	490	350	1,480	1,390	5,440	1,300	539	338	968
20	74	152	190	465	345	1,550	1,390	5,125	1,300	454	356	928
21	97	180	230	465	340	1,800	1,490	4,825	1,300	414	375	1,004
22	74	124	500	470	340	2,200	1,490	4,450	1,550	375	454	1,040
23	97	152	800	480	340	2,700	1,490	4,300	1,855	338	454	1,040
24	74	124	920	490	345	3,500	1,690	4,000	1,855	338	454	1,040
25	97	152	1,030	510	360	4,200	1,965	3,560	1,910	338	454	1,165
26	97	124	1,100	520	370	5,400	2,320	3,075	1,800	338	454	1,255
27	124	124	1,060	510	380	6,800	2,620	2,815	1,745	356	414	1,390
28	97	97	1,000	500	390	6,000	2,945	2,620	1,745	375	375	1,490
29	110	124	920	480	395	5,200	3,350	2,320	1,800	375	375	1,490
30	74	97	820	470	-	4,400	3,850	2,320	1,390	375	356	1,490
31	97	-	750	460	-	3,700	-	2,200	-	375	338	-
Total	2,748	3,728	11,578	15,650	11,028	77,240	64,520	157,445	53,720	22,180	11,092	24,405
Mean	88.6	124	373	505	380	2,492	2,151	5,079	1,791	715	358	814
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1903: Max	5,920				Min 53	Mean 1,023	Cfsm 1.44	In. 19.62				
Water year 1903-4: Max	8,400				Min 53	Mean 1,244	Cfsm 1.76	In. 23.91				

Discharge, in cubic feet per second, water year October 1904 to September 1905

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,910	1,004	454	390	415	390	1,850	3,630	1,910	1,345	434	238
2	2,320	968	414	370	405	385	1,600	3,630	1,690	1,345	414	238
3	2,380	906	375	360	400	380	1,490	3,775	1,855	1,390	375	238
4	2,380	906	375	355	390	370	1,745	4,000	1,855	1,390	375	238
5	2,320	846	375	350	390	360	2,020	4,150	2,080	1,390	358	254
6	2,260	846	375	370	385	360	2,320	4,375	1,910	1,300	338	270
7	2,140	788	375	480	385	360	2,380	4,600	1,800	1,230	338	270
8	2,020	788	358	800	385	370	2,560	4,750	1,965	1,165	303	270
9	1,855	733	320	1,100	385	380	2,685	4,975	2,260	1,040	303	254
10	1,800	681	303	1,400	390	400	2,720	4,975	2,560	968	303	238
11	1,690	656	300	1,400	395	420	2,750	5,050	2,380	906	303	238
12	1,590	631	300	1,300	390	430	2,880	4,975	2,620	846	303	238
13	1,590	631	295	1,180	390	440	3,010	4,750	2,500	817	286	238
14	1,840	631	295	1,050	370	440	3,210	4,600	2,500	760	270	208
15	1,440	631	292	940	355	440	3,420	4,225	2,270	733	270	208
16	1,345	631	290	880	345	440	3,490	3,850	2,020	681	270	180
17	1,255	584	290	800	335	440	3,420	3,420	1,965	656	270	190
18	1,210	539	310	760	325	800	2,945	3,280	2,020	631	254	194
19	1,120	539	340	730	320	1,500	2,620	3,700	1,910	631	238	208
20	1,040	539	360	690	325	2,050	2,560	4,450	1,910	608	238	208
21	1,040	539	350	640	335	1,800	2,560	4,450	1,910	562	238	208
22	1,120	539	370	615	350	1,700	2,685	4,225	1,910	539	238	208
23	1,210	539	360	590	360	1,700	2,750	3,925	1,855	539	238	208
24	1,300	496	350	560	370	1,900	2,815	3,560	1,745	496	238	208
25	1,210	496	340	540	380	2,100	2,615	3,350	1,690	496	238	208
26	1,210	496	345	520	385	2,300	2,815	2,945	1,590	454	238	208
27	1,210	496	375	500	390	2,500	2,945	3,075	1,590	454	270	208
28	1,120	496	430	470	395	2,500	3,140	2,945	1,590	454	270	180
29	1,120	454	450	455	-	2,400	3,420	2,750	1,540	454	238	180
30	1,040	454	430	440	-	2,350	3,560	2,880	1,490	454	238	180
31	1,040	-	410	425	-	2,200	2,440	-	-	454	238	-
Total	47,825	19,485	11,036	21,460	10,435	34,405	81,180	121,705	56,890	25,188	8,905	6,604
Mean	1,543	649	356	692	373	1,110	2,706	3,926	1,963	813	287	220
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1904: Max	8,400				Min 254	Mean 1,409	Cfsm 1.99	In. 27.07				
Water year 1904-5: Max	5,050				Min 180	Mean 1,225	Cfsm 1.73	In. 23.50				

## Moose River near Rockwood, Maine--Continued

Discharge, in cubic feet per second, water year October 1905 to September 1906

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	97	180	180	358	270	97	4,750	3,490	1,080	454	208
2	180	124	180	180	375	258	97	4,675	3,010	968	454	180
3	180	97	180	180	375	208	97	4,975	2,620	906	414	194
4	180	110	208	208	414	208	97	5,520	2,685	906	414	223
5	180	124	208	208	414	208	97	6,080	2,815	846	375	238
6	180	124	208	208	454	208	97	6,560	3,010	788	375	208
7	152	138	208	208	454	180	97	6,800	2,880	760	338	223
8	152	152	208	208	454	180	97	6,800	2,750	733	338	238
9	152	152	208	208	454	180	97	6,800	2,815	681	303	254
10	152	152	238	180	454	208	97	7,120	3,010	681	303	270
11	152	152	238	152	454	208	124	7,680	3,210	733	286	270
12	124	152	238	152	430	180	124	7,780	3,140	817	270	270
13	152	152	238	152	410	180	152	7,600	2,075	876	238	270
14	152	160	238	152	390	180	152	7,440	2,815	906	238	270
15	152	170	238	152	380	152	180	7,280	2,620	846	223	270
16	152	180	238	152	375	152	238	7,120	2,815	846	208	270
17	124	180	238	152	375	124	320	7,120	2,685	788	208	270
18	124	180	238	152	358	124	394	7,280	2,440	788	194	270
19	124	180	208	152	358	124	475	7,120	2,080	760	180	270
20	124	180	208	152	358	124	656	7,120	1,800	733	180	270
21	152	180	208	152	338	124	1,210	7,120	1,690	733	180	270
22	152	152	208	152	303	124	2,140	6,980	1,745	680	180	270
23	138	152	208	160	303	124	2,750	6,160	1,800	681	208	270
24	124	180	208	180	270	97	3,010	5,440	1,800	656	208	270
25	124	180	208	195	270	97	3,350	4,975	1,745	631	208	270
26	124	180	208	208	270	74	3,490	4,600	1,540	608	180	270
27	124	180	208	238	270	74	3,700	4,450	1,490	584	208	270
28	124	180	208	238	270	74	4,225	4,300	1,345	562	208	270
29	124	180	208	270	-	74	4,525	4,375	1,210	518	208	270
30	97	180	208	303	-	74	4,600	4,075	1,120	496	208	270
31	97	-	208	303	-	74	-	3,775	-	496	208	-
Total	4,448	4,700	6,634	5,887	10,308	4,646	36,785	189,830	71,250	23,088	6,197	7,636
Mean	143	157	214	190	368	150	1,226	6,124	2,375	745	264	255
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1905: Max			5,050		Min	97	Mean	1,054	Cfsm	1.49	In.	20.22
Water year 1905-6: Max			7,760		Min	74	Mean	1,023	Cfsm	1.44	In.	19.60

Discharge, in cubic feet per second, water year October 1906 to September 1907

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	1,210	631	340	340	155	356	4,300	3,780	3,140	1,640	414
2	270	1,210	631	340	340	160	414	4,900	3,440	2,880	1,580	414
3	270	1,210	631	340	325	160	414	5,520	3,140	2,750	1,540	434
4	270	1,210	631	340	315	160	414	5,840	2,680	2,080	1,490	414
5	270	1,120	631	340	310	160	454	6,320	2,620	1,590	1,490	454
6	270	1,040	584	340	305	170	454	6,480	2,580	1,340	1,390	454
7	270	1,040	584	340	295	185	454	6,640	2,500	1,260	1,390	414
8	270	968	584	330	285	195	539	7,120	2,500	1,210	1,640	414
9	270	937	584	340	270	207	539	7,120	2,380	1,300	1,740	414
10	270	846	585	340	260	207	561	7,280	2,320	1,340	1,800	414
11	394	846	585	340	250	207	561	7,280	2,200	1,300	1,640	414
12	454	846	540	340	225	207	607	7,440	2,200	1,490	1,540	434
13	454	788	540	340	215	207	656	7,440	2,200	2,320	1,340	414
14	584	788	540	340	190	207	681	7,440	2,080	2,680	1,160	414
15	631	788	540	330	155	207	710	7,440	2,020	2,680	1,080	375
16	631	733	495	330	150	207	760	7,040	1,800	2,560	1,000	375
17	631	733	495	340	150	192	770	6,640	1,640	2,320	937	454
18	631	733	495	330	150	207	810	6,240	1,440	2,080	906	496
19	631	681	495	330	150	207	850	6,000	1,390	1,860	846	539
20	631	681	455	340	140	207	920	5,920	1,340	1,640	817	539
21	631	631	415	340	140	207	1,000	6,240	1,440	1,390	788	475
22	631	631	415	320	120	207	1,090	6,640	1,690	1,340	733	475
23	631	733	415	315	150	207	1,200	6,720	1,910	1,340	681	454
24	681	733	415	315	155	207	1,600	6,560	2,020	1,260	631	539
25	733	414	415	315	155	222	2,100	6,080	2,020	1,210	631	562
26	876	303	415	320	155	238	2,685	5,840	2,020	1,210	584	562
27	1,004	788	415	330	155	238	3,350	5,680	2,200	1,260	539	562
28	1,120	617	375	330	155	254	3,420	5,360	2,560	1,260	518	564
29	1,300	788	365	330	-	270	3,560	4,975	2,820	1,340	496	608
30	1,300	-	355	330	-	286	4,000	4,450	3,140	1,440	454	631
31	1,300	-	350	340	-	320	-	4,150	-	1,540	434	-
Total	18,579	25,006	15,806	10,335	6,035	6,470	36,019	193,095	68,050	54,410	33,465	14,146
Mean	599	834	503	333	216	209	1,200	6,230	2,270	1,760	1,080	472
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1906: Max			7,760		Min	74	Mean	1,142	Cfsm	1.61	In.	21.89
Water year 1906-7: Max			7,440		Min	140	Mean	1,318	Cfsm	1.86	In.	25.30

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## Discharge, in cubic feet per second, 1907-8

[illegible]

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	120	238	93	9	207	120	177	17	177	120	238	25	177	120	238
2	162	207	93	10	238	120	207	18	177	120	238	26	177	120	238
3	127	207	93	11	270	148	238	19	148	120	238	27	207	238	93
4	120	177	93	12	270	148	238	20	148	120	238	28	207	93	270
5	148	148	93	13	303	148	238	21	177	120	238	29	207	93	303
6	177	148	120	14	207	177	238	22	177	120	238	30	238	93	238
7	207	148	120	15	177	148	207	23	148	93	238	31	238	-	375
8	207	120	177	16	177	148	207	24	148	93	238				
Total													5,918	4,068	6,536
Mean													191	136	211
Cfsm													-	-	-
In													-	-	-
Calendar year 1908:	Max	8,720		Min	93		Mean	1,180		Cfsm	1.67		In	22.66	

## KENNEBEC RIVER BASIN

## Moose River near Rockwood, Maine--Continued

Discharge, in cubic feet per second, water year October 1911 to September 1912

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	646	681	631	1,210	120	338	937	7,040	4,600	2,665	238	584
2	846	681	631	1,165	95	303	928	7,360	4,600	2,380	238	584
3	846	733	631	1,120	67	503	846	7,440	4,450	1,965	238	584
4	876	733	631	1,040	67	303	846	7,680	4,450	1,745	238	562
5	906	733	681	1,040	67	270	846	7,120	4,525	1,390	320	539
6	906	681	733	935	75	270	788	6,720	4,525	1,120	356	496
7	906	656	733	935	80	270	788	6,240	4,300	906	375	562
8	906	631	733	935	80	238	788	5,680	4,300	846	434	496
9	846	631	733	935	80	238	788	5,680	4,300	788	454	454
10	733	656	661	920	50	238	788	5,200	4,075	760	496	414
11	760	681	681	905	72	238	733	5,260	3,925	733	539	394
12	733	681	681	875	72	238	760	5,050	3,850	733	608	375
13	707	631	681	845	72	270	876	4,750	3,700	681	681	338
14	651	631	788	790	72	303	1,004	4,600	3,560	608	733	338
15	631	707	1,300	735	20	303	1,300	4,800	3,280	562	817	303
16	631	788	1,490	650	116	303	1,345	4,300	3,075	496	876	303
17	631	817	1,490	630	162	303	1,590	4,300	2,880	454	968	338
18	631	846	1,490	585	206	303	2,200	4,225	2,880	414	968	338
19	631	786	1,590	540	222	338	2,560	4,225	2,880	375	906	370
20	656	760	1,690	495	270	338	3,010	4,000	2,880	338	846	480
21	681	733	1,550	475	320	375	3,560	3,850	3,010	338	798	800
22	661	651	1,590	455	394	414	3,925	3,700	2,815	303	788	1,350
23	681	681	1,390	435	454	414	4,450	3,700	3,010	286	733	1,200
24	788	681	1,590	375	475	454	5,050	3,560	3,010	254	733	640
25	768	631	1,590	355	496	496	5,280	3,420	2,880	238	681	640
26	846	584	1,590	320	496	496	5,440	3,210	2,880	238	681	560
27	846	584	1,490	305	454	496	5,680	3,420	2,815	238	631	490
28	768	584	1,590	305	414	681	5,920	3,630	2,750	238	631	480
29	788	594	1,345	222	375	1,004	6,240	3,775	2,680	207	831	480
30	733	831	1,300	175	-	1,165	6,500	3,925	2,680	222	584	470
31	733	-	1,210	134	-	1,210	-	4,450	-	238	584	-
Total	23,717	20,520	34,974	20,869	6,033	12,913	78,106	152,130	105,965	22,779	18,794	16,122
Mean	765	684	1,128	673	208	417	2,537	4,907	3,532	735	606	537
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1911: Max	7,040				80		Mean	861	Cfsm	1.22	In.	16.50
Water year 1911-12: Max	7,880				67		Mean	1,400	Cfsm	1.98	In.	26.84

Note.--Stage-discharge relation affected by ice Jan. 1 to Feb. 23. Discharge estimated for period Sept. 19-30 on basis of weather records and records for nearby stations.



## Moosehead Lake at East Outlet, Maine

Location.--Lat 45°35'10", long. 69°42'45", at wharf at east outlet of lake, at Moosehead, Piscataquis County.

Drainage area.--1,240 sq mi, approximately.

Records available.--April 1895 to September 1952.

Gage.--Staff gage read daily at 7 a.m. Datum of gage is 1,011.48 ft above mean sea level, Datum of 1929.

Extremes.--Maximum gage height observed during year, 17.61 ft June 8; minimum observed, 12.66 ft Mar. 11.  
1895-1952: Maximum gage height, 18.0 ft May 30, 1902; minimum, 10.0 ft or lower, present datum, Mar. 20-29, 1911.

Remarks.--Lake is controlled by dams at East and West Outlets originally built prior to 1840. East Outlet Dam partly rebuilt of concrete in 1947-48 with gate sills at elevation 7.0 ft. Lake outlet dredged in 1948 to permit drawing level down to elevation 10.0 ft at a faster rate than formerly. Capacity, 23,735,000,000 cu ft between gage heights 10.0 and 17.5 ft. Water is used primarily for power, although some logs are driven each year. During June, July, August, and September some water was diverted through gates in dam at West Outlet.

Cooperation.--Gage-height record furnished by Kennebec Water Power Co.

Revisions (water years).--W 1111: 1946-47 (change in contents).

Gage height, in feet, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15.62	15.06	16.48	16.69	15.55	13.40	13.06	15.50	17.48	17.20	16.67	15.28
2	15.60	15.04	16.48	16.68	15.48	13.34	13.10	15.67	17.58	17.15	16.63	15.27
3	15.60	15.04	16.42	16.68	15.38	13.23	13.15	15.85	17.58	17.09	16.58	15.20
4	15.58	15.30	16.37	16.72	15.30	13.14	13.21	16.04	17.57	17.00	16.50	15.17
5	15.56	15.35	16.37	16.73	15.25	13.10	13.24	16.18	17.56	17.00	16.43	15.10
6	15.54	15.43	16.36	16.71	15.17	13.01	13.28	16.32	17.56	16.97	16.35	15.05
7	15.52	15.50	16.42	16.71	15.10	12.92	13.28	16.45	17.57	16.97	16.30	15.01
8	15.50	15.65	16.48	16.65	15.02	12.88	13.30	16.58	17.61	16.92	16.22	14.91
9	15.50	15.71	16.56	16.61	14.97	12.83	13.34	16.67	17.56	16.80	16.15	14.80
10	15.47	15.75	16.61	16.56	14.89	12.78	13.38	16.78	17.53	16.78	16.10	14.75
11	15.45	15.85	16.68	16.52	14.79	12.66	13.41	16.87	17.53	16.73	16.06	14.65
12	15.42	15.95	16.70	16.49	14.76	12.68	13.44	16.98	17.53	16.68	16.08	14.60
13	15.37	15.97	16.74	16.40	14.68	12.70	13.48	17.05	17.53	16.70	16.11	14.58
14	15.33	16.01	16.73	16.38	14.65	12.73	13.50	17.17	17.51	16.69	16.14	14.50
15	15.32	16.15	16.72	16.37	14.60	12.77	13.57	17.30	17.52	16.69	16.13	14.38
16	15.32	16.20	16.70	16.36	14.50	12.69	13.65	17.35	17.52	16.70	16.10	14.33
17	15.32	16.35	16.65	16.30	14.40	12.65	13.75	17.37	17.50	16.71	16.15	14.25
18	15.32	16.43	16.65	16.26	14.35	12.65	13.77	17.39	17.51	16.71	16.18	14.16
19	15.32	16.48	16.55	16.21	14.30	12.65	13.83	17.42	17.47	16.67	16.15	14.12
20	15.33	16.53	16.55	16.18	14.24	12.68	14.02	17.45	17.46	16.69	16.15	14.13
21	15.28	16.56	16.53	16.10	14.15	12.67	14.08	17.47	17.45	16.76	16.08	14.09
22	15.23	16.58	16.65	16.06	14.08	12.67	14.19	17.51	17.45	16.76	16.06	14.02
23	15.20	16.55	16.63	16.05	14.01	12.70	14.27	17.50	17.43	16.76	16.00	13.96
24	15.14	16.56	16.70	16.04	13.94	12.73	14.36	17.48	17.37	16.76	15.91	13.89
25	15.15	16.56	16.72	16.02	13.89	12.75	14.45	17.51	17.34	16.73	15.80	13.85
26	15.22	16.56	16.76	15.95	13.75	12.80	14.55	17.51	17.37	16.67	15.70	13.79
27	15.25	16.58	16.73	15.88	13.65	12.84	14.73	17.50	17.37	16.63	15.65	13.71
28	15.25	16.57	16.75	15.79	13.55	12.90	14.67	17.49	17.36	16.63	15.57	13.63
29	15.25	16.54	16.72	15.70	13.45	12.93	15.07	17.47	17.35	16.68	15.50	13.55
30	15.15	16.50	16.73	15.68	-	12.97	15.27	17.45	17.27	16.68	15.45	13.47
31	15.08	-	16.71	15.60	-	13.02	-	17.50	-	16.67	15.39	-

Monthly gage height and contents, water year October 1951 to September 1952

Date	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)
Sept. 30.....	15.65	17,788	-
Oct. 31.....	15.08	15,988	-1,820
Nov. 30.....	16.50	20,513	+4,545
Dec. 31.....	16.71	21,187	+674
Calendar year 1951.....	-	-	-2,451
Jan. 31.....	15.60	17,628	-3,559
Feb. 29.....	13.45	10,799	-6,829
Mar. 31.....	13.02	9,441	-1,358
Apr. 30.....	15.27	16,574	+7,133
May 31.....	17.50	25,735	+9,161
June 30.....	17.27	22,992	-743
July 31.....	16.67	21,059	-1,933
Aug. 31.....	15.39	16,957	-4,102
Sept. 30.....	13.47	10,862	-6,095
Water year 1951-52.....	-	-	-6,926

## KENNEBEC RIVER BASIN

Kennebec River at Moosehead, Maine

Location.--Lat 45°35'10", long. 69°43'10", on right bank an eighth of a mile downstream from dam at east outlet of Moosehead Lake and half a mile northwest of Moosehead, Piscataquis County.

Drainage area.--1,240 sq mi, approximately.

Records available.--October 1919 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,015.53 ft above mean sea level, datum of 1929. Prior to Oct. 9, 1924, chain gage on railroad bridge 300 ft downstream at same datum.

Average discharge.--33 years, 1,819 cfs (unadjusted).

Extremes.--Maximum discharge during year, 5,910 cfs June 8 (gage height, 6.49 ft); minimum, 265 cfs Apr. 22 (gage height, 2.53 ft).

1919-52: Maximum discharge, 15,600 cfs May 8, 1947 (gage height, 9.94 ft); minimum, about 62 cfs Apr. 7-15, 1923.

Remarks.--Records excellent except those for periods of backwater from highway bridge construction, which are good. Some water diverted down west channel by leakage and occasional opening of gates in dam at West Outlet. Flow regulated by Moosehead Lake (see preceding page) and Brassau Lake and Second and First Roach Ponds (see p.

Revisions.--W 1301: 1928-50 (adjusted monthly runoff in inches).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1, 5-9, 22, 23, 29)

2.5	250	3.8	1,240
2.6	300	4.5	2,080
2.8	414	5.0	2,870
3.0	542	6.0	4,840
3.4	845	7.0	7,070

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,400	1,440	2,780	1,860	3,970	3,880	311	295	2,270	2,960	1,810	2,460
2	1,360	1,450	2,540	1,860	4,000	3,760	311	295	3,540	2,520	3,110	2,360
3	1,330	750	2,290	1,860	4,040	3,940	316	295	3,890	2,000	3,410	2,050
4	1,590	316	2,260	1,870	4,240	4,080	316	306	3,850	1,430	3,330	2,020
5	2,420	328	2,250	1,860	4,110	4,240	316	316	4,000	1,430	3,300	2,000
6	2,400	328	1,010	1,860	3,450	4,300	322	311	3,810	1,430	3,320	2,180
7	2,390	306	355	2,310	3,630	4,220	322	311	4,800	2,210	3,260	2,430
8	2,390	316	361	2,920	3,760	4,120	322	316	5,860	4,710	3,200	3,060
9	2,360	316	367	2,890	3,700	4,040	311	322	5,530	1,740	2,490	2,800
10	2,120	311	373	2,870	3,640	3,920	306	328	4,560	2,820	1,240	2,770
11	1,880	311	725	2,840	3,840	3,400	306	333	4,540	1,970	384	2,770
12	1,870	338	1,380	2,780	4,000	2,560	311	333	4,370	590	390	2,800
13	1,850	350	1,380	2,780	3,920	1,880	311	328	4,040	470	396	2,780
14	1,010	350	1,820	2,780	3,860	1,400	311	700	2,590	470	390	2,730
15	338	350	2,670	2,770	3,800	2,260	322	2,510	2,240	476	390	2,620
16	338	344	3,940	2,720	3,920	3,080	322	2,560	1,730	476	390	2,510
17	344	344	4,480	2,720	4,000	3,080	316	2,820	1,920	476	402	2,510
18	344	344	3,750	2,670	3,980	2,730	316	2,370	1,820	1,510	396	2,480
19	344	344	1,980	2,650	3,900	2,510	316	2,040	2,320	1,390	396	2,430
20	780	344	1,780	2,680	4,020	2,510	322	2,630	2,160	489	750	2,050
21	1,710	344	1,730	2,630	4,120	2,500	306	3,320	1,710	489	1,660	2,050
22	2,160	1,820	895	2,670	4,260	2,130	270	3,690	2,400	890	2,460	2,320
23	2,150	2,870	414	2,930	4,300	1,600	270	3,640	1,560	1,030	2,770	2,420
24	2,150	2,260	945	3,080	4,220	1,300	270	3,340	3,800	1,390	2,840	2,370
25	1,180	1,820	1,400	3,280	4,240	1,020	275	3,280	1,250	2,660	3,010	2,530
26	344	1,820	1,940	3,520	4,530	1,030	275	3,660	1,520	2,580	3,110	2,560
27	344	1,820	2,240	3,490	4,740	870	280	3,940	2,490	1,360	3,090	2,530
28	1,710	2,330	1,870	3,450	4,590	490	285	*3,940	556	881	3,060	2,480
29	2,580	2,820	1,860	3,450	4,120	300	290	2,630	2,310	908	3,010	2,600
30	1,860	2,800	1,870	3,410	-	306	295	1,610	3,070	899	2,970	2,670
31	*1,270	-	1,860	3,520	-	311	-	1,720	-	908	2,890	-
Total	47,916	29,964	55,505	84,980	116,900	77,767	9,122	54,289	90,306	45,362	63,624	74,320
Mean	1,546	999	1,790	2,741	4,031	2,509	304	1,751	3,010	1,463	2,052	2,477
(+)	-974	+2,275	+296	-1,557	-2,877	-2,183	+5,131	+3,623	-57	-1,523	-2,136	-2,513

Adjusted for diversion and change in contents

	Mean	Cfsm	In.
572	3,274	2,086	1,184
0.461	2.64	1.68	0.955
0.53	2.94	1.94	1.10
1,154	1,154	1,154	1,154
0.263	0.263	0.263	0.263
4.89	4.89	4.89	4.89
5,435	5,374	2,953	-60
4.38	4.33	2.38	-0.048
4.99	2.66	-0.06	-0.068
-0.029	-0.029	-0.029	-0.029

	Observed	Adjusted
Calendar year 1951: Max	8,630	Min 306
Water year 1951-52: Max	5,860	Min 270
	Mean 2,388	Mean 2,309
	Mean 2,049	Mean 1,840
	Cfsm 1.86	Cfsm 1.48
	In. 25.26	In. 20.18

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Brassau and Moosehead Lakes, and Second and First Roach Ponds; also diversion through West Outlet.

## Kennebec River at The Forks, Maine

Location.--Lat 45°20'35", long. 69°57'45", on right bank at The Forks, Somerset County, half a mile upstream from highway bridge and 1 mile upstream from Dead River.

Drainage area.--1,570 sq mi, approximately.

Records available.--September 1901 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 569.03 ft above mean sea level, datum of 1929. Prior to June 21, 1912, chain gage and June 21, 1912, to Oct. 17, 1919, water-stage recorder and chain gage, at highway bridge half a mile downstream at different datum.

Average discharge.--51 years, 2,516 cfs (unadjusted).

Extremes.--1901-2: The maximum discharge during water year, 22,400 cfs Dec. 15, 1901

(gage height, 11.83 ft, from graph based on gage readings); minimum not determined.

1951-52: Maximum discharge during water year, 8,240 cfs June 8 (gage height, 6.11 ft; minimum, 453 cfs Oct. 20 (gage height, 1.82 ft).

1901-52: Maximum discharge, about 23,700 cfs June 18, 1917 (gage height, 10.1 ft, site then in use); minimum, 215 cfs Oct. 27, 1911.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	May 11, 1914	17,400	9.75
501.....	1919	Nov. 22, 1918, May 19, 1919	13,400	8.00
501.....	1920	May 12, 1920	14,600	8.50
561.....	1923	Apr. 30, 1923	17,700	10.05
621.....	1926	Nov. 17, 1925	14,100	8.30
661.....	1927	May 28, 1928	14,900	8.65
681.....	1929	May 6, 1929	16,500	9.44
801.....	1936	Mar. 20, 1936	15,200	8.80
851.....	1938	May 16, 1938	14,400	8.43

Remarks.--Records excellent except those for periods of ice effect and no gage-height record, which are fair. Flow regulated by Moosehead Lake (see p. 77) and Brassau Lake, and Moxie, Second and First Roach Ponds (see p. 97).

Revisions (water years).--W 198: Drainage area. W 1301: 1928-35 (adjusted monthly runoff in inches). Revised figures of discharge, in cubic feet per second, for water year 1902 (complete daily table given below) and for periods in water years 1903-4, 1906-8, 1912, and 1914, superseding those published in Water-Supply Papers 198, 241, 281, 301, 321, 351, and 381 are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1903		1904		1904		1906	
Apr. 3.....	5,030	June 7.....	8,000	July 23.....	5,120	June 14.....	4,850
4.....	8,550	8.....	4,760	24.....	5,400	15.....	5,490
5.....	9,210	9.....	5,490	25.....	5,030	16.....	4,670
6.....	10,500	10.....	5,030	26.....	4,490	18.....	4,850
7.....	9,980	11.....	5,870	29.....	4,850	29.....	5,400
8.....	9,980	12.....	6,580			20.....	5,400
9.....	9,980	13.....	7,230			21.....	5,400
10.....	10,200	14.....	7,450	May 2.....	4,670	22.....	5,490
11.....	10,200	15.....	6,160	3.....	5,030	23.....	5,400
12.....	8,110	16.....	5,960	4.....	5,030	27.....	5,960
13.....	2,780	17.....	6,680	5.....	5,400	28.....	5,300
14.....	5,540	18.....	5,400	6.....	5,580	29.....	5,120
15.....	7,450	19.....	5,400	7.....	5,210		
16.....	9,100	20.....	7,890	8.....	6,260		
17.....	10,300	21.....	7,230	10.....	8,220	May 1.....	7,890
18.....	10,500	22.....	6,580	11.....	8,310	2.....	8,330
19.....	10,100	23.....	5,400	13.....	5,120	3.....	7,340
20.....	9,870	24.....	4,850	14.....	5,120	4.....	6,260
21.....	9,430	25.....	4,940	15.....	4,940	5.....	5,120
22.....	9,210	26.....	5,210	16.....	5,680	6.....	4,850
23.....	8,880	27.....	5,680	17.....	8,110	10.....	5,300
24.....	8,330	28.....	5,320	18.....	10,200	11.....	4,940
25.....	7,340	29.....	5,490	19.....	9,320	12.....	7,560
		30.....	5,210	20.....	9,100	13.....	9,210
1904		1.....	5,490	21.....	9,100	14.....	10,400
May 17.....	5,300	2.....	5,490	22.....	9,760	15.....	10,100
18.....	5,580	3.....	6,160	23.....	8,000	16.....	10,200
19.....	7,450	4.....	6,060	24.....	9,870	17.....	6,790
20.....	6,470	5.....	5,870	25.....	9,100	18.....	9,210
21.....	5,780	6.....	5,300	26.....	7,340	19.....	10,600
22.....	2,570	7.....	5,300	27.....	5,330	20.....	9,650
23.....	6,470	8.....	5,300	28.....	8,660	21.....	11,000
24.....	4,580	9.....	5,300	29.....	8,110	22.....	9,980
25.....	7,340	10.....	5,400	30.....	5,960	23.....	6,470
26.....	5,030	11.....	5,490	31.....	6,790	24.....	7,120
27.....	5,210	12.....	6,160	June 1.....	5,680	25.....	8,000
28.....	5,030	13.....	6,680	2.....	6,900	26.....	6,580
29.....	5,960	14.....	6,580	3.....	6,470	27.....	6,060
30.....	5,960	15.....	6,060	4.....	6,060	28.....	6,580
31.....	5,960	16.....	6,060	5.....	8,330	29.....	7,890
June 1.....	5,780	17.....	5,300	6.....	8,660	30.....	8,660
2.....	5,210	18.....	5,780	7.....	8,660	31.....	7,890
3.....	7,450	19.....	5,400	8.....	7,890	Nov. 4.....	4,780
4.....	6,060	20.....	5,400	9.....	5,870	5.....	4,490
5.....	7,120	21.....	5,030	10.....	5,960	6.....	5,780
6.....	6,060	22.....	6,060	11.....	6,060	7.....	5,780
				12.....	6,260	8.....	8,990
				13.....	5,490		

## KENNEBEC RIVER BASIN

## Kennebec River at The Forks, Maine--Continued

Revised figures of discharge, in cubic feet per second, 1903-4, 1906-8, 1912, 1914--Continued

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1907		1908		1908		1911	
Nov. 9.....	13,700	May 15.....	6,260	June 18.....	4,210	Dec. 31.....	620
10.....	11,600	16.....	7,560	19.....	5,960		
11.....	11,200	17.....	8,000	20.....	6,160	1913	
12.....	10,900	18.....	9,650	21.....	6,160	Dec. 18.....	1,100
13.....	10,900	19.....	8,550	22.....	6,160	19.....	1,160
14.....	10,100	20.....	8,880	23.....	5,580	20.....	1,220
15.....	5,210	21.....	9,760	24.....	5,960	21.....	1,260
23.....	4,490	22.....	9,100	25.....	7,230	22.....	1,230
24.....	4,940	23.....	7,890	26.....	5,400	23.....	1,210
25.....	4,490	24.....	8,110	27.....	5,300	24.....	1,230
26.....	4,760	25.....	7,780	28.....	5,580	25.....	1,240
27.....	4,760	26.....	7,760			26.....	1,250
28.....	4,780	27.....	7,340	1911		27.....	1,250
29.....	4,400	28.....	6,160	Dec. 14.....	635	28.....	1,250
		29.....	7,230	15.....	915	29.....	1,290
1908		30.....	7,230	16.....	880	30.....	1,560
May 1.....	8,000	31.....	9,320	17.....	840	31.....	1,600
2.....	8,660	June 1.....	9,980	18.....	805		
3.....	7,560	2.....	10,400	19.....	770	1914	
4.....	6,790	3.....	10,700	20.....	740	Jan. 1.....	1,650
5.....	10,700	4.....	10,800	21.....	715	2.....	1,760
6.....	13,200	5.....	9,320	22.....	700	3.....	1,850
7.....	11,800	6.....	6,160	23.....	660	4.....	1,910
8.....	13,100	7.....	7,450	24.....	650	5.....	1,880
9.....	12,900	8.....	6,790	25.....	635	6.....	1,970
10.....	13,100	9.....	5,400	26.....	620	7.....	2,090
11.....	12,700	10.....	6,680	27.....	620	8.....	2,110
12.....	10,500	11.....	5,870	28.....	620	9.....	2,090
13.....	5,300	12.....	5,580	29.....	620	10.....	2,100
14.....	5,300	17.....	4,670	30.....	620		

Month	Maximum	Minimum	Mean
April 1903.....	10,500	1,760	7,270
Water year 1902-3.....	-	-	3,110
Calendar year 1903.....	-	-	2,640
May 1904.....	7,450	2,570	4,610
June.....	8,000	4,760	6,060
July.....	6,680	3,310	5,360
Water year 1903-4.....	8,000	390	2,260
Calendar year 1904.....	8,000	390	2,480
May 1906.....	10,200	3,180	6,720
June.....	8,660	1,220	5,380
Water year 1905-6.....	10,200	340	2,360
Calendar year 1906.....	10,200	340	2,390
May 1907.....	11,000	3,540	7,470
Water year 1906-7.....	11,000	340	2,510
November 1907.....	13,900	860	5,320
Calendar year 1907.....	11,000	670	3,010
May 1908.....	13,200	5,300	8,910
June.....	10,700	3,450	6,240
Water year 1907-8.....	13,900	795	3,580
Calendar year 1908.....	13,200	260	3,000
December 1911.....	990	620	767
Calendar year 1911.....	6,830	235	1,520
Water year 1911-12.....	14,400	235	2,450
December 1913.....	1,600	707	1,120
Calendar year 1913.....	12,400	602	2,720
January 1914.....	4,880	1,960	2,490
Water year 1913-14.....	17,000	255	2,550

## Kennebec River at The Forks, Maine--Continued

Discharge, in cubic feet per second, water year October 1901 to September 1902

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,700	1,935	1,300			1,000	13,950	10,090	4,400	8,220	5,300	1,262
2	1,700	1,935	1,300			1,875	13,450	12,630	7,670	8,550	5,300	1,262
3	1,700	1,935	1,300			2,325	12,740	12,970	8,990	8,440	8,280	1,262
4	1,700	1,935	1,400			2,620	12,415	12,970	9,320	8,220	4,320	1,700
5	1,815	1,815	1,500			2,470	11,575	9,100	11,575	7,780	4,320	1,645
6	1,758	1,590	1,600			2,398	10,735	8,330	12,100	7,780	3,825	1,935
7	1,700	1,430	1,700			2,060	9,100	8,770	11,470	6,900	3,270	1,875
8	1,700	1,395	1,815			2,258	9,540	8,770	11,680	5,680	3,100	2,000
9	1,815	1,490	2,125			2,060	9,320	9,760	11,890	5,585	3,100	2,060
10	1,815	1,220	2,470			1,935	9,210	8,990	12,100	5,120	3,100	2,000
11	1,700	1,140	2,470			1,935	8,880	9,760	9,760	5,212	3,270	1,935
12	1,875	1,060	2,470			1,305	6,792	9,980	9,100	5,120	3,270	1,875
13	1,875	1,140	5,100			985	7,120	9,760	8,440	7,780	2,935	1,815
14	2,000	1,060	4,220			985	6,685	10,630	7,780	5,965	3,018	1,758
15	2,398	1,305	14,950			910	6,578	10,200	11,050	5,398	2,698	1,700
16		1,305	1,305	12,520		872	7,340	7,120	7,560	5,585	2,470	1,590
17	835	1,305	12,520			1,305	7,340	7,670	7,230	5,398	2,545	1,395
18	830	1,305	10,420			1,875	7,560	6,685	7,010	5,398	2,470	1,305
19	695	1,305	8,220			2,325	8,000	7,120	8,000	5,398	2,398	1,305
20	505	1,305	5,400			3,825	7,890	5,120	8,000	5,398	2,125	1,305
21	1,220	1,305	2,700			4,220	8,440	5,870	5,480	5,398	2,258	1,815
22	1,060	1,305	1,300			4,760	8,770	5,870	7,120	5,120	2,190	2,190
23	1,305	1,305	1,000			4,940	7,780	5,680	6,365	6,470	2,190	1,815
24	2,190	1,305	860			4,760	6,160	6,080	6,470	3,825	2,190	1,350
25	2,325	1,305	800			3,922	4,940	7,340	8,440	2,060	2,190	1,758
26	2,325	1,305	780			3,270	3,730	9,320	6,685	2,325	1,935	1,305
27	1,350	1,305	760			3,450	5,680	9,320	7,230	2,698	1,490	1,540
28	1,305	1,305	740			4,220	6,330	5,120	5,050	4,670	1,305	1,442
29	1,305	1,305	720			4,850	8,440	4,220	4,760	4,490	1,305	1,395
30	1,815	1,305	720			8,220	8,220	3,730	5,680	4,490	1,305	1,442
31	1,815	-	720			12,100	-	5,305	-	4,760	1,395	-
Total	49,236	42,020	103,890	-	-	96,035	256,710	254,280	248,395	175,233	90,867	49,036
Mean	1,590	1,400	3,350	†1,330	†2,220	3,100	8,560	8,200	8,280	5,650	2,930	1,630
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
Ir.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1901: Max	-	-	-	Min	-	Mean	-	Cfsm	-	In.	-	-
Water year 1901-2: Max	14,950	-	-	Min	505	Mean	4,020	Cfsm	-	In.	-	-

† Monthly discharge estimated on basis of natural runoff from nearby stations with allowance for change in contents in Moosehead Lake.

## KENNEBEC RIVER BASIN

## Kennebec River at The Forks, Maine--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	440	4.0	3,170
2.0	571	5.0	5,360
2.5	985	6.0	7,950
3.0	1,550	7.0	10,600
3.5	2,270		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,570	1,580	3,440	2,440	4,410	3,860	976	2,110	2,940	3,390	1,210	3,130
2	2,510	1,720	3,320	2,270	4,870	3,760	966	1,890	3,680	1,750	2,800	2,850
3	1,540	2,350	2,910	2,410	4,760	3,760	966	1,690	5,310	3,460	3,560	2,670
4	1,470	2,870	2,820	2,620	4,410	3,860	966	1,550	5,260	1,600	3,580	2,490
5	2,140	2,730	2,820	2,800	4,520	3,760	966	1,420	5,240	1,680	3,540	2,390
6	2,600	2,240	2,690	2,940	3,970	3,970	966	1,510	4,870	1,670	3,540	2,340
7	2,570	1,900	1,530	2,980	3,760	3,860	1,140	1,510	5,650	1,680	3,500	2,570
8	2,600	2,530	1,530	3,860	3,860	3,760	1,020	1,310	8,050	4,330	3,440	2,800
9	2,620	2,930	1,540	3,560	3,800	3,760	1,270	1,310	7,900	3,610	3,190	3,000
10	2,580	2,460	1,390	3,460	3,800	3,560	1,430	1,300	6,380	1,650	2,220	3,000
11	2,160	1,960	1,370	3,340	3,860	3,360	1,710	1,260	5,760	3,630	909	2,960
12	2,100	1,670	2,020	3,260	4,040	2,980	1,790	1,410	5,210	1,270	682	3,020
13	2,040	1,490	2,300	3,190	4,170	2,550	1,790	1,650	5,180	802	643	3,080
14	1,820	1,380	2,360	3,150	4,230	1,760	1,900	1,640	3,990	742	674	2,980
15	755	1,430	2,620	3,090	4,190	1,860	2,100	2,940	2,920	712	682	2,910
16	523	1,450	3,080	3,020	4,150	3,360	2,190	3,910	2,480	712	697	2,780
17	484	1,630	4,300	2,940	4,190	3,360	*2,290	4,370	2,330	712	761	2,750
18	478	1,600	4,640	2,870	4,150	3,230	2,440	4,100	1,960	720	705	2,730
19	465	1,440	2,800	2,800	4,080	2,780	2,510	3,360	2,900	2,300	682	2,730
20	465	1,300	1,680	2,760	4,100	2,760	3,300	3,150	2,560	956	728	2,530
21	1,080	1,190	1,960	2,760	4,190	2,980	3,740	4,280	2,530	728	1,330	2,130
22	2,220	1,350	1,360	2,910	4,410	2,690	3,740	4,730	2,480	728	2,720	2,390
23	2,340	320	890	3,70	4,300	1,890	3,080	4,320	1,400	976	2,850	a2,750
24	2,340	3,340	800	3,400	4,190	1,740	2,690	4,690	3,460	1,420	3,020	a2,500
25	2,360	2,480	1,200	3,760	4,370	1,290	2,360	4,230	3,230	1,900	3,080	a2,750
26	1,090	2,410	1,680	4,410	4,520	1,220	2,290	4,390	1,180	3,320	3,360	a2,700
27	802	2,410	3,170	4,190	4,190	1,220	2,410	4,850	3,330	2,130	3,440	a2,690
28	920	2,570	2,980	3,970	4,080	955	2,570	4,800	1,510	1,260	3,420	a2,680
29	2,900	3,360	2,890	2,050	3,970	568	2,620	4,320	1,020	1,110	3,380	a2,700
30	2,780	3,540	2,800	2,020	3,70	854	2,440	2,910	4,530	*1,090	3,440	a2,700
31	1,230	-	2,620	2,110	-	643	-	1,790	-	1,100	3,420	-
Total Mean (+)	54,452 1,757 -933	64,670 2,156 +2,355	73,460 2,370 +263	94,310 3,042 -1,574	121,540 4,191 -2,868	81,721 2,636 -2,196	60,426 2,014 +5,214	88,866 2,666 +3,640	115,180 3,639 -232	53,088 1,693 -1,737	70,783 2,283 -2,323	81,600 2,720 -2,641

Adjusted for change in reservoir contents

Mean	824	4,511	2,633	1,468	1,303	440	7,228	6,506	3,607	16	-40	79
Cfsm	0.525	2.87	1.68	0.935	0.830	0.280	4.60	4.14	2.30	0.010	-0.025	0.050
In.	0.61	3.20	1.94	1.08	0.90	0.32	5.13	4.77	2.57	0.01	-0.03	0.06

		Observed				Adjusted						
Calendar year 1951:	Max	11,900	Min	465	Mean	3,078	Mean	2,974	Cfsm	1.89	In.	25.67
Water year 1951-52:	Max	6,050	Min	465	Mean	2,623	Mean	2,371	Cfsm	1.51	In.	20.56

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Brassua and Moosehead Lakes, and Second Roach, First Roach and Moxie Ponds.

and records for station at Moosehead, Maine.

Note.--Stage-discharge relation affected by ice Dec. 14 to Mar. 12 (no gage-height record Jan. 8-14).

## Dead River near Dead River, Maine

Location.--Lat 45°13'48", long. 70°11'58", T. 3, R. 4, Somerset County, on right bank at Foot of Long Falls, 0.3 mile upstream from Black Brook and 0.5 mile downstream from Flagstaff Lake Dam.

Drainage area.--520 sq. mi.

Records available.--December 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,037.32 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1940-52), 764 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,660 cfs May 13 (gage height, 9.14 ft); minimum, 2 cfs on several days in April when all gates were closed in dam upstream.

1939-52: Maximum discharge, 10,400 cfs May 5, 1940 (gage height, 9.66 ft); maximum gage height, 10.27 ft Jan. 21, 1946 (ice jam); no flow for part of July 31, 1949, when flow was completely shut off by cofferdam during construction of Flagstaff Lake Dam.

Remarks.--Records good except those for periods of ice effect, backwater from pulpwood, or no gage-height record, which are fair. Flow regulated by Flagstaff Lake (see p. 97).

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 22 to July 6)

3.6	1.0	5.0	235
3.7	4.3	5.5	465
3.8	11	6.0	780
3.9	18	7.0	1,830
4.0	26	8.0	3,600
4.2	47	8.6	5,070
4.6	116		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	802	730	194	1,070	678	258	1,460	100	1,280	325	950	63
2	773	1,100	260	1,040	658	1,010	1,370	*51	1,820	*325	101	63
3	752	490	1,260	1,490	632	1,230	1,370	10	2,550	300	86	64
4	738	32	1,200	1,930	619	1,170	1,460	10	2,580	290	69	66
5	1,040	23	510	1,820	585	1,120	311	12	2,570	280	60	66
6	980	20	188	1,730	575	1,090	58	22	2,450	585	61	66
7	835	31	166	1,840	555	1,060	55	290	2,400	950	61	66
8	1,040	46	118	1,560	545	425	2	420	2,880	830	61	66
9	935	32	116	1,490	520	605	2	710	2,170	924	64	66
10	625	26	116	1,410	505	1,010	2	940	2,110	885	1,730	66
11	619	25	116	1,340	480	1,570	2	1,140	1,820	1,060	2,730	66
12	612	29	116	1,290	470	2,000	2	1,880	1,590	1,880	2,400	66
13	593	28	285	1,200	460	795	2	4,850	1,490	2,240	2,340	66
14	1,860	31	476	1,400	450	50	2	5,020	1,330	2,310	2,750	66
15	2,650	37	476	1,610	440	1,710	2	3,640	1,080	2,780	2,690	66
16	2,650	43	482	1,520	425	1,940	2	3,110	911	2,970	2,450	67
17	2,400	61	482	1,430	410	1,930	2	3,000	1,000	3,380	2,300	69
18	2,850	74	870	1,350	405	1,910	2	2,530	788	3,420	2,150	69
19	3,010	82	1,440	1,260	395	1,890	3	2,010	935	1,920	2,060	69
20	2,740	91	1,400	1,200	390	1,860	4	1,550	710	2,670	1,840	72
21	2,500	95	1,350	1,150	380	1,840	5	2,020	510	2,800	994	72
22	2,320	99	1,340	1,070	370	1,820	5	2,480	710	2,780	435	72
23	2,160	106	1,310	1,040	360	1,790	10	3,080	505	2,020	69	*67
24	1,530	116	1,290	978	355	1,730	25	2,720	395	2,260	67	61
25	495	128	1,250	927	350	1,750	40	2,160	355	1,140	67	61
26	71	138	1,230	879	345	1,710	55	1,580	410	188	67	61
27	20	163	1,200	840	810	1,690	70	1,690	475	1,310	64	61
28	78	175	1,180	802	1,350	1,650	85	1,790	345	3,110	64	61
29	765	181	1,150	773	690	1,610	100	1,530	345	2,130	63	61
30	525	188	1,120	738	-	1,580	100	1,490	355	2,730	63	61
31	101	-	1,100	710	-	1,560	-	1,080	-	*2,380	63	-
Total	38,879	4,420	23,769	38,687	15,207	43,343	6,808	52,795	38,869	53,152	28,969	1,966
Mean	1,254	147	767	1,248	524	1,398	220	1,703	1,296	1,715	934	65.5
(†)	-926	+1,255	-23	-849	-255	-1,167	+2,879	+560	-117	-1,594	-823	+33

Adjusted for change in contents of Flagstaff Lake

Mean	328	1,402	744	399	269	231	3,099	2,263	1,179	121	111	98.5
Cfs	0.631	2.70	1.43	0.767	0.517	0.442	5.96	4.35	2.27	0.233	0.213	0.189
In.	0.73	3.01	1.65	0.88	0.56	0.51	6.65	5.02	2.53	0.27	0.25	0.21
Observed						Adjusted						
Calendar year 1951:	Max	6,580	Min	1.0	Mean	1,016	Mean	936	Cfs	1.80	In.	24.45
Water year 1951-52:	Max	5,020	Min	2	Mean	947	Mean	850	Cfs	1.63	In.	22.27

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Flagstaff Lake.

Note.--No gage-height record Mar. 4-6, Apr. 8 to May 2; discharge estimated on basis of records for storage dam just upstream and 1 discharge measurement. Stage-discharge relation affected by ice Feb. 5-26 (no gage-height record Feb. 15-19). Backwater from pulpwood, June 17 to July 6.

## Dead River at The Forks, Maine

Location.--Lat 45°21'00", long. 69°59'30", on left bank 1½ miles northwest of The Forks, Somerset County, and 1½ miles upstream from mouth.

Drainage area.--872 sq mi.

Records available.--September 1901 to August 1907, March 1910 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 600.5 ft above mean sea level, adjustment of 1912. Prior to Sept. 29, 1923, staff gage at site 100 ft downstream at same datum.

Average discharge.--47 years (1902-7, 1910-52), 1,401 cfs.

Extremes.--Maximum discharge during year, 8,860 cfs July 18 (gage height, 6.05 ft); minimum, 104 cfs Sept. 9 (gage height, 1.65 ft).  
1901-7, 1910-52: Maximum discharge, 28,700 cfs Mar. 20, 1936 (gage height, 10.54 ft), from rating curve extended above 15,000 cfs; minimum since September 1923, 54 cfs Sept. 27, 1941 (gage height, 1.50 ft).

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	May 10, 1914	17,600	6.86
431.....	1916	May 18, 1916	10,300	5.15
451.....	1917	June 21, 1917	22,600	7.90
501.....	1919	May 30, 1919	10,600	5.23
501.....	1920	Apr. 24, 1920	9,510	4.95
541.....	1922	Apr. 14, 1922	13,700	5.98

Remarks.--Records excellent except those for periods of ice effect and no gage-height record, which are fair. Flow partly regulated by Flagstaff and Spencer Lakes and Dead River Pond (see p. 97).

Revisions.--W 801: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1907 and 1911-15, superseding those published in Water-Supply Papers 198, 301, 321, 351, 381, and 401, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1913		1914		1915		1915	
Jan. 2.....	870	Apr. 21.....	3,200	Feb. 2.....	345	Mar. 8.....	1,900
3.....	850	22.....	6,300	3.....	335	9.....	1,600
4.....	800	23.....	8,000	4.....	325	10.....	1,400
5.....	760	24.....	7,000	5.....	310	11.....	1,300
10.....	680	25.....	5,700	6.....	300	12.....	1,150
11.....	640	26.....	5,000	7.....	285	13.....	1,100
12.....	600	27.....	4,400	8.....	280	14.....	1,050
13.....	580	28.....	4,000	9.....	270	15.....	980
15.....	550	29.....	4,200	10.....	265	16.....	900
16.....	520	30.....	5,000	11.....	260	17.....	820
17.....	520			12.....	255	18.....	740
Mar. 22.....	2,300	1915		13.....	250	19.....	680
23.....	2,900	Jan. 11.....	360	14.....	250	20.....	640
24.....	4,000	12.....	320	15.....	350	21.....	600
25.....	5,050	13.....	300	16.....	580	22.....	590
26.....	6,000	14.....	280	17.....	900	23.....	610
27.....	8,200	15.....	275	18.....	1,050	24.....	640
28.....	9,200	16.....	270	19.....	980	25.....	700
29.....	8,900	17.....	280	20.....	900	26.....	860
30.....	8,900	18.....	380	21.....	740	27.....	1,000
31.....	8,700	19.....	600	22.....	620	28.....	1,200
		20.....	1,000	23.....	500	29.....	1,100
1914		21.....	1,500	24.....	430	30.....	1,040
Jan. 2.....	1,100	22.....	1,200	25.....	390	31.....	950
3.....	900	23.....	1,000	26.....	1,000	Apr. 1.....	900
4.....	760	24.....	800	27.....	2,500	2.....	860
5.....	660	25.....	680	28.....	5,600	3.....	840
6.....	540	26.....	580	Mar. 1.....	5,400	4.....	800
7.....	470	27.....	520	2.....	5,000	5.....	780
8.....	430	28.....	480	3.....	4,000	6.....	860
9.....	400	29.....	450	4.....	3,500	7.....	1,000
10.....	390	30.....	420	5.....	3,000	8.....	1,300
11.....	370	31.....	390	6.....	2,500	9.....	1,700
Apr. 20.....	2,500	Feb. 1.....	360	7.....	2,100	10.....	2,200
Month			Maximum	Minimum	Mean	Per square mile	Runoff in inches
January 1913.....			1,200	520	791	-	-
March.....			9,200	440	2,600	-	-
Water year 1912-13.....			12,100	160	1,510	1.73	23.48
Calendar year 1913.....			12,100	160	1,550	1.78	24.10
January 1914.....			1,240	290	517	-	-
April.....			8,000	860	2,740	-	-
Water year 1913-14.....			16,200	100	1,480	1.70	23.08
Calendar year 1914.....			16,200	100	1,240	1.42	19.34
January 1915.....			1,500	240	511	-	-
February.....			5,600	250	737	-	-
March.....			5,400	590	1,580	-	-
April.....			7,130	780	2,900	-	-
Water year 1914-15.....			7,130	100	1,130	1.30	17.61
Calendar year 1915.....			7,130	160	1,160	1.33	18.11



## Dead River at The Forks, Maine--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	82	3.5	2,340
1.8	177	4.0	3,340
2.0	304	5.0	5,800
2.4	680	6.0	8,700
3.0	1,510		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,510	665	704	1,380	1,010	470	1,980	2,410	1,750	624	*1,730	304
2	1,450	1,420	740	1,340	985	680	1,970	1,950	3,290	602	290	335
3	1,400	1,980	1,530	1,460	945	1,440	1,980	1,560	4,260	591	218	189
4	1,300	4,070	1,700	1,700	915	1,360	2,070	1,340	3,770	591	212	161
5	1,340	2,600	1,350	2,080	905	1,280	1,510	1,150	3,720	569	236	146
6	1,560	1,650	917	1,950	880	1,280	549	1,030	3,470	499	206	141
7	1,170	1,320	1,530	1,850	850	1,210	658	1,280	4,040	1,090	177	130
8	1,440	1,880	1,530	1,750	810	740	728	1,840	4,210	865	177	121
9	1,780	1,900	1,400	1,650	800	386	740	2,070	4,020	1,140	172	108
10	1,270	1,480	1,180	1,560	790	1,210	839	2,470	3,520	680	690	218
11	1,180	1,210	972	1,460	765	1,750	1,200	2,150	3,380	692	2,990	270
12	1,100	1,010	917	1,360	740	2,000	1,270	2,830	2,950	1,410	2,620	290
13	1,040	891	813	1,260	715	1,440	1,200	7,000	2,750	2,140	2,450	342
14	1,740	839	1,040	1,220	705	350	1,320	7,200	2,290	2,480	2,690	327
15	2,810	1,080	986	1,860	670	1,770	5,590	1,690	3,140	2,750	312	
16	3,060	1,280	1,060	1,850	690	2,770	1,780	4,640	1,480	2,880	2,560	290
17	2,770	1,340	1,280	1,810	690	2,500	*1,920	5,150	1,390	3,050	2,500	277
18	2,850	1,220	1,560	1,770	680	2,500	2,190	4,650	1,320	3,570	2,290	270
19	3,320	1,030	2,170	1,690	680	2,380	2,580	2,700	1,300	2,970	2,190	270
20	2,990	904	2,340	1,650	670	2,320	3,270	2,500	1,070	2,370	2,170	270
21	2,750	826	2,220	1,570	650	2,320	4,380	4,240	891	2,680	1,270	290
22	2,500	728	2,150	1,510	640	2,310	3,410	4,500	740	3,210	925	256
23	2,290	716	2,070	1,390	600	2,320	3,160	4,680	930	2,520	256	230
24	1,850	680	2,020	1,340	590	2,340	3,640	4,430	680	2,360	201	224
25	1,140	692	1,970	1,300	580	2,310	3,060	3,560	613	1,900	195	218
26	647	580	1,920	1,270	570	2,260	2,750	2,890	624	399	189	218
27	479	692	1,630	1,220	800	2,180	2,890	3,550	958	660	195	224
28	416	728	1,730	1,160	2,000	2,150	3,060	3,610	930	2,880	373	224
29	680	776	1,650	1,130	1,280	2,100	2,910	*2,310	740	2,560	358	224
30	1,180	716	1,570	1,080	-	2,050	2,890	2,000	680	2,170	335	212
31	469	-	1,500	1,040	-	2,020	-	1,690	-	2,560	312	-
Total	51,481	36,903	46,349	46,680	23,635	53,230	63,874	98,970	64,156	56,552	33,927	7,091
Mean	1,661	1,230	1,495	1,506	815	1,717	2,129	3,193	2,139	1,824	1,090	236
(f)	-1,121	+1,255	-23	-849	-255	-1,167	+3,143	+572	-100	-3,677	-926	-46

## Adjusted for change in reservoir contents

	Mean	Cfsm	In.
540	2,485	1,472	657
0.619	2.85	1.69	0.753
0.71	3.18	1.95	0.87

		Observed			Adjusted							
Calendar year 1951:	Max	9,650	Min	86	Mean	1,731	Mean	1,651	Cfsm	1.69	In.	25.70
Water year 1951-52:	Max	7,200	Min	108	Mean	1,592	Mean	1,481	Cfsm	1.70	In.	23.12

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Flagstaff and Spencer Lakes and Dead River Pond.

Note.--No gage-height record Dec. 18-24, May 18-21; discharge estimated on basis of weather records and records for station near Dead River. Stage-discharge relation affected by ice Dec. 25 to Mar. 15.

## Austin Stream at Bingham, Maine

Location.--Lat 45°03'55", long. 69°52'55", on right bank at Bingham, Somerset County, three-quarters of a mile upstream from mouth.

Drainage area.--91.1 sq mi.

Records available.--October 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 350.14 ft above mean sea level, datum of 1929.

Average discharge.--21 years (1931-52), 166 cfs.

Extremes.--Maximum discharge during year, 3,050 cfs Nov. 4 (gage height, 11.32 ft); minimum, 2.9 cfs Aug. 31, Sept. 1 (gage height, 6.67 ft).

1931-52: Maximum discharge, 5,820 cfs Sept. 17, 1932, and Nov. 27, 1950 (maximum gage height, 13.12 ft); minimum, 1.6 cfs Sept. 30, Oct. 1, 1948.

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

Revisions.--W 1171: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3

Nov. 4 to Sept. 30

7.2	17	8.5	246	6.6	1.7	7.4	54	8.6	370
7.4	30	9.0	460	6.7	3.4	7.6	86	9.0	557
7.6	48	9.5	770	6.8	5.9	7.8	128	9.5	868
7.8	75	10.0	1,200	7.0	16	8.0	175	10.0	1,270
8.0	108	10.5	1,770	7.2	30	8.2	228	11.0	2,500
8.2	152								

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	199	108	106	71	53	110	633	162	33	5.6	2.9
2	40	196	113	94	69	53	130	517	633	29	5.4	5.4
3	35	1,260	98	79	69	53	168	445	616	26	5.2	6.7
4	32	2,290	94	69	69	51	203	387	396	24	5.2	10
5	30	1,120	102	63	118	51	228	342	*383	22	5.9	9.2
6	29	633	460	58	130	56	413	312	323	21	5.9	7.5
7	27	552	882	57	128	63	507	315	413	20	5.6	6.3
8	44	1,060	744	57	124	66	512	330	557	20	5.4	5.4
9	77	926	547	56	120	64	532	334	413	19	4.4	*4.6
10	74	605	400	54	108	54	584	326	300	19	4.2	4.6
11	59	450	297	50	*106	58	*687	300	240	20	4.2	4.6
12	49	354	*259	49	100	94	627	480	203	18	3.9	4.6
13	41	293	200	48	94	168	584	988	170	17	4.2	11
14	37	262	168	*44	86	152	633	706	159	16	3.6	18
15	33	283	146	54	83	128	819	502	115	16	3.4	14
16	30	286	128	102	79	108	812	562	94	15	3.6	*9.2
17	29	330	118	120	78	*92	798	616	83	14	14	6.3
18	28	308	106	128	72	86	812	473	79	13	16	5.6
19	27	253	106	124	69	81	904	366	71	12	12	5.9
20	24	208	102	120	66	78	1,160	304	64	11	8.4	21
21	23	175	124	106	64	81	1,280	330	54	12	5.9	20
22	22	152	176	106	62	96	1,060	436	48	12	5.6	14
23	22	152	200	106	58	121	996	374	41	11	4.9	10
24	22	148	188	102	57	121	1,030	300	38	10	4.6	9.2
25	615	132	162	96	56	108	868	244	37	8.6	4.4	11
26	699	117	136	92	54	106	812	279	41	7.6	4.4	12
27	422	121	130	88	54	108	875	323	60	7.0	3.6	19
28	268	141	128	86	54	115	897	273	51	7.6	3.1	18
29	215	126	132	83	53	108	819	217	41	6.8	3.2	14
30	159	108	136	79	-	106	791	195	35	5.9	3.4	11
31	152	-	124	74	-	110	-	168	-	*5.9	2.9	-
Total	3,422	13,240	6,814	2,550	2,349	2,789	20,651	12,377	5,900	479.4	172.1	301.9
Mean	110	441	220	82.3	81.0	90.0	688	399	197	15.5	5.55	10.1
Cfsm	1.21	4.84	2.41	0.903	0.889	0.988	7.55	4.38	2.16	0.170	0.061	0.111
In.	1.40	5.40	2.78	1.04	0.96	1.14	8.42	5.05	2.49	0.15	0.07	0.12

Calendar year 1951: Max 3,200 Min 12 Mean 196 Cfsm 2.15 In. 29.17  
 Water year 1951-52: Max 2,290 Min 2.9 Mean 194 Cfsm 2.13 In. 29.02

Peak discharge (base, 1,200 cfs)--Nov. 4 (4:30 a.m.) 3,050 cfs (11.32 ft); Apr. 20 (10 p.m.) 1,400 cfs (10.14 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Feb. 12 to Mar. 16, June 26 to July 29; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams. Stage-discharge relation affected by ice Dec. 15 to Feb. 11 (no gage-height record Dec. 18-23, and probably on other days).

## Kennebec River at Bingham, Maine

Location.--Lat 45°03'05", long. 69°53'15", on right bank at Bingham, Somerset County, 200 ft downstream from highway bridge, half a mile downstream from Austin Stream, and 1½ miles downstream from Wyman Dam.

Drainage area.--2,710 sq mi, approximately.

Records available.--June 1907 to June 1910, October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 330.2 ft above mean sea level, datum of 1929. June 1907 to June 1910, chain gage on highway bridge at different datum.

Average discharge.--24 years (1907-9, 1930-52), 4,161 cfs (unadjusted).

Extremes.--Maximum discharge during year, 16,600 cfs Nov. 3 (gage height, 9.82 ft); minimum daily, 1,340 cfs Apr. 13.  
1907-10, 1930-52: Maximum discharge, 58,800 cfs (revised) Mar. 20, 1936 (gage height, 14.44 ft), from rating curve extended above 16,000 cfs on basis of computations of flow at Wyman Dam plus inflow; minimum daily, 110 cfs Dec. 25, 1947.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by Moosehead Lake (see p. 77), Brassau, Flagstaff, and Spencer Lakes, Second Roach, First Roach, Moxie, Dead River, and Wyman Ponds (see pp. 97,98). Considerable diurnal fluctuation caused by powerplant above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

5.6	1,200	8.0	7,790
6.0	1,910	8.5	10,000
6.5	2,980	9.0	12,200
7.0	4,310	9.5	14,900
7.5	5,950		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	3,340	3,990	3,820	5,640	5,120	3,680	6,850	4,520	3,440	3,820	2,250
2	3,620	3,340	2,880	5,460	4,140	3,600	4,080	5,210	9,100	3,490	3,530	3,190
3	3,680	6,850	4,220	5,000	3,880	b6,000	3,560	4,040	10,800	3,100	2,130	3,030
4	3,790	11,400	4,010	4,980	5,280	5,500	3,360	3,220	9,670	1,820	3,680	3,090
5	3,980	7,170	4,330	4,630	5,140	5,680	3,200	4,470	9,820	3,670	3,560	3,250
6	3,990	5,200	4,540	b5,760	5,140	5,790	1,690	3,210	8,890	2,980	3,490	3,220
7	3,590	5,080	5,650	5,500	5,370	5,460	3,800	3,680	10,200	3,740	3,530	1,790
8	3,860	7,030	4,200	5,100	5,230	4,430	3,610	3,850	13,400	3,740	3,580	3,230
9	3,760	7,140	3,700	5,090	4,070	3,010	3,780	4,220	12,600	3,790	3,870	3,020
10	3,900	5,050	4,610	5,050	3,900	5,790	4,980	3,900	10,200	3,420	1,850	2,960
11	3,860	3,610	3,650	4,940	6,480	5,740	4,600	3,290	9,580	4,050	3,610	*3,080
12	3,430	3,930	3,780	4,320	4,160	5,140	3,890	6,590	9,000	3,630	3,510	2,970
13	3,840	3,250	3,780	3,690	b5,650	b5,300	1,340	10,900	8,370	2,300	3,440	2,880
14	2,520	3,650	4,280	5,580	b6,000	5,120	5,700	10,300	6,350	4,020	3,770	2,180
15	3,610	3,060	4,260	5,060	b5,900	b3,900	6,270	9,400	4,930	3,660	3,280	3,060
16	3,800	3,160	4,210	5,340	b4,650	b3,900	6,150	10,100	5,240	3,700	3,700	2,970
17	4,050	3,430	4,280	5,160	b5,250	5,480	6,230	10,500	5,060	3,850	1,800	3,110
18	3,790	2,380	4,200	4,860	5,280	5,140	5,780	10,000	4,380	3,740	3,650	2,940
19	4,000	4,140	4,540	4,110	b5,850	5,380	4,690	7,310	4,200	3,840	3,480	3,140
20	3,680	3,290	4,470	3,810	5,680	5,150	4,780	6,540	4,130	2,390	3,400	2,840
21	3,760	3,380	4,560	5,380	5,500	4,830	8,190	8,550	4,020	3,620	3,530	2,100
22	3,860	3,160	4,230	b5,400	5,340	3,820	9,290	10,000	3,160	3,780	3,390	3,050
23	3,830	4,010	3,550	5,120	5,060	3,580	8,400	10,400	3,390	3,830	3,310	3,310
24	3,560	3,450	3,290	5,620	3,650	4,300	9,050	9,840	3,780	3,580	2,450	3,080
25	4,070	2,500	3,180	b5,500	6,490	4,140	7,780	8,630	3,630	3,870	3,290	2,700
26	2,780	3,900	4,280	4,340	5,830	4,000	6,780	7,850	3,310	3,880	3,460	3,210
27	2,470	3,740	4,200	2,620	6,280	3,920	7,400	8,930	3,560	2,350	3,500	2,790
28	2,140	3,560	4,480	5,340	5,550	3,940	7,940	9,130	2,980	4,300	3,550	2,160
29	3,370	3,920	4,230	5,440	b5,660	3,400	7,550	3,580	2,880	3,560	3,640	3,070
30	3,350	3,710	3,820	5,900	-	2,940	7,220	5,340	3,920	3,490	3,340	2,970
31	3,450	-	3,830	5,900	-	3,920	-	4,190	-	3,620	1,840	-
Total	110,950	130,830	127,210	152,800	150,050	143,400	164,770	214,020	195,240	108,230	101,980	86,650
Mean	3,579	4,361	4,104	4,929	5,174	4,626	5,492	6,904	6,508	3,491	3,290	2,888
(†)	-2,102	+3,488	+348	-2,563	-3,080	-3,466	+8,513	+4,187	-385	-3,339	-3,176	-2,662

Adjusted for change in reservoir contents

Mean	1,477	7,849	4,452	2,366	2,114	1,160	14,005	11,091	6,123	152	114	226
Cfsm	0.545	2.90	1.64	0.873	0.780	0.428	5.17	4.09	2.26	0.056	0.042	0.083
In.	0.63	3.24	1.89	1.01	0.84	0.49	5.77	4.72	2.52	0.06	0.05	0.09

	Observed						Adjusted					
Calendar year 1951:	Max	22,000	Min	1,430	Mean	5,217	Mean	5,019	Cfsm	1.85	In.	25.19
Water year 1951-52:	Max	13,400	Min	1,340	Mean	4,607	Mean	4,242	Cfsm	1.57	In.	21.31

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Brassau, Moosehead, Flagstaff, and Spencer Lakes, Second Roach, First Roach, Moxie, Dead River and Wyman Ponds.

b Stage-discharge relation affected by ice.

## Carratasset River near North Anson, Maine

Location.--Lat 44°52'00", long. 69°57'10", on left bank 3 miles upstream from Mill Stream and North Anson, Somerset County.

Drainage area.--354 sq mi.

Records available--November 1901 to May 1907, August 1925 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 303.3 ft above mean sea level, datum of 1929. Nov. 1, 1901, to May 1907, chain and rod gages 1 mile upstream at different datum.

Average discharge.--32 years (1902-6, 1925-52), 675 cfs.

Extremes.--Maximum discharge during year, 16,100 cfs Nov. 3 (gage height, 15.00 ft); minimum, 39 cfs Aug. 4 (gage height, 2.40 ft).

1925-52: Maximum discharge, 30,800 cfs (revised) Mar. 19, 1936 (gage height, 21.17 ft), from rating curve extended above 11,000 cfs; minimum, 18 cfs Oct. 29, 1929 (gage height, 2.02 ft).

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
681.....	1928	Nov. 4, 1927	23,100	17.83
726.....	1932	Sept. 17, 1932	25,600	18.91
801.....	1936	Mar. 19, 1936	30,800	21.17
851.....	1938	Oct. 24, 1937	14,500	13.95
1001.....	1944	Nov. 9, 1943	18,400	15.75
1171.....	1950	Apr. 21, 1950	22,100	17.40

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some regulation at low flow by mills above station.

Revisions.--W 851: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1904-7, superseding those published in Water-Supply Papers 198 and 241, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1903		1904		1905		1906	
Dec. 21.....	2,000	Dec. 15.....	180	Dec. 31.....	250	Dec. 8.....	250
22.....	1,650	16.....	166			9.....	240
23.....	1,200	17.....	160	1906		10.....	235
24.....	1,000	18.....	176	Apr. 1.....	865	11.....	235
25.....	800	19.....	220	2.....	815	12.....	235
26.....	680	20.....	240	3.....	765	13.....	235
27.....	580	21.....	215	4.....	825	14.....	240
28.....	480	22.....	200	5.....	1,100	15.....	240
29.....	380	23.....	190	6.....	1,380	16.....	240
30.....	330	24.....	200	7.....	1,690	17.....	230
31.....	280	25.....	190	8.....	1,500	18.....	220
1904		26.....	180	9.....	1,400	19.....	215
Dec. 3.....	360	27.....	160	10.....	1,320	20.....	210
4.....	350	28.....	190	11.....	1,250	21.....	220
5.....	360	29.....	210	12.....	1,200	22.....	230
6.....	330	30.....	200	13.....	1,150	23.....	240
7.....	300	31.....	190	14.....	1,100	24.....	235
8.....	270	1905		15.....	1,310	25.....	230
9.....	250	Dec. 25.....	300	16.....	3,750	26.....	225
10.....	230	26.....	285	Dec. 2.....	400	27.....	220
11.....	220	27.....	265	3.....	340	28.....	215
12.....	215	28.....	245	4.....	300	29.....	210
13.....	210	29.....	225	5.....	290	30.....	205
14.....	200	30.....	220	6.....	270	31.....	230
				7.....	260		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1903.....	2,000	120	451	1.27	1.46
Calendar year 1903.....	13,340	55	675	1.91	25.92
Water year 1903-4.....	13,670	55	850	2.40	32.59
December 1904.....	376	160	236	.667	.77
Calendar year 1904.....	13,670	55	889	2.51	34.19
Water year 1904-5.....	3,750	120	669	1.89	25.67
December 1905.....	840	220	378	1.07	1.23
Calendar year 1905.....	3,750	120	638	1.80	24.48
April 1906.....	5,775	765	2,450	6.92	7.72
Water year 1905-6.....	5,775	77	646	1.82	24.78
December 1906.....	450	205	251	.709	.82
Calendar year 1906.....	5,775	77	688	1.94	26.38

## Carrabassett River near North Anson, Maine--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 8

Apr. 9 to Sept. 30

2.9	108	7.0	3,100	2.4	39	5.0	1,120
3.5	265	8.0	4,400	2.6	63	6.0	2,100
4.0	455	9.0	5,800	2.8	95	7.0	3,330
5.0	1,040	10.0	7,250	3.0	135	8.0	4,710
6.0	1,950	11.1	8,870	3.5	278	9.5	6,900
				4.0	490		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	518	662	300	300	220	785	2,090	910	176	56	43
2	143	513	634	365	290	220	900	1,670	4,980	*166	46	140
3	137	4,850	551	375	280	215	1,550	1,470	3,450	153	40	250
4	135	8,880	513	360	275	210	1,240	1,190	1,920	133	40	230
5	132	3,660	459	345	395	210	970	1,020	*2,060	131	46	195
6	124	2,140	2,100	330	830	220	1,370	902	1,170	120	55	120
7	122	1,790	3,110	325	770	235	2,400	1,010	1,120	122	62	90
8	212	6,030	2,420	315	660	245	2,100	1,100	1,240	112	55	80
9	434	3,560	1,500	305	595	240	2,230	1,190	988	108	49	75
10	299	2,060	1,030	295	530	225	2,460	1,310	809	106	47	72
11	243	1,180	770	290	470	250	3,300	1,120	706	114	48	68
12	215	872	595	*285	445	595	3,120	5,360	638	104	51	70
13	186	787	505	285	415	1,140	2,620	6,630	583	101	51	66
14	172	750	475	280	*370	1,120	2,980	3,320	521	103	50	63
15	165	859	440	280	355	1,010	3,600	2,160	466	97	47	75
16	152	859	405	550	335	925	3,240	2,280	413	88	41	74
17	152	1,020	380	970	315	860	3,580	2,500	370	86	158	70
18	143	948	365	925	300	805	*3,480	2,010	387	85	355	65
19	139	806	355	900	290	760	3,760	1,530	357	70	144	69
20	130	656	345	710	270	770	5,710	1,400	330	64	93	72
21	126	571	340	605	260	820	5,610	1,590	292	75	74	118
22	128	522	655	595	250	950	*4,180	3,000	261	78	64	97
23	126	571	1,120	500	250	995	4,570	2,020	238	78	62	86
24	128	662	970	455	245	970	4,120	1,510	213	75	58	81
25	1,180	628	690	415	240	925	2,990	1,320	219	70	51	78
26	1,150	499	545	375	235	870	2,670	1,380	244	58	50	90
27	708	696	455	430	230	900	2,940	1,850	337	51	48	88
28	546	906	375	415	225	950	3,070	1,280	268	63	46	90
29	508	819	325	375	225	940	2,840	1,120	216	69	44	92
30	499	720	270	345	-	870	2,910	1,020	201	*51	43	85
31	459	-	255	325	-	815	-	950	-	58	42	-
Total	9,145	49,132	23,604	13,625	10,650	20,480	86,875	58,322	25,907	2,965	2,114	2,893
Mean	295	1,638	761	440	367	661	2,896	1,881	864	95.6	68.2	96.4
Cfm	0.833	4.63	2.15	1.24	1.04	1.87	8.18	5.31	2.44	0.270	0.193	0.272
In.	0.96	5.17	2.48	1.43	1.12	2.16	9.13	6.12	2.72	0.31	0.22	0.30

Calendar year 1951: Max 13,200 Min 88 Mean 816 Cfsm 2.31 In. 31.32

Water year 1951-52: Max 8,880 Min 40 Mean 835 Cfsm 2.36 In. 32.12

Peak discharge (base, 6,000 cfs).--Nov 3 (11 p.m.) 16,100 cfs (15.00 ft); Nov. 8 (12:30 p.m.) 6,700 cfs (9.62 ft); Apr. 20 (10 p.m.) 7,840 cfs (10.08 ft); May 12 (9:30 p.m.) 13,500 cfs (15.22 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record May 15 to June 5, and Aug. 27 to Sept. 6; discharge estimated on basis of recorded range in stage, 1 discharge measurement, and records for nearby stations. Stage-discharge relation affected by ice Dec. 10 to Apr. 8 (no gage-height record Dec. 14 to Jan. 11; discharge estimated on basis of weather records and records for nearby stations).

## Sandy River near Farmington, Maine

Location.--Lat 44°42'05", long. 70°10'25", on downstream side near center of easterly spar of bridge on Route 4, three-quarters of a mile upstream from Baker Stream, 2.4 miles northwest of Farmington, Franklin County.

Drainage area.--242 sq mi.

Records available.--July 1910 to September 1915 (discontinued).

Gage.--Chain gage. Altitude of gage is 335 ft (from topographic map).

Average discharge.--5 years (1910-15), 433 cfs.

Extremes.--1910-15: Maximum discharge, 8,800 cfs (revised), Nov. 10, 1913 (gage height, 10.8 ft, from graph based on gage readings), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 13 cfs July 14, 15, 1911 (gage height, 2.0 ft).

Revisions.--The figures of maximum discharge for water years 1913 and 1914 have been revised to 7,100 cfs Oct. 25, 1912 (gage height, 9.7 ft) and 8,800 cfs Nov. 10, 1913 (gage height, 10.8 ft), superseding those published in the Water-Supply Papers 351 and 381, respectively.

Remarks.--At low flow there is some diurnal fluctuation caused by powerplant at Phillips above the station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1913-14, superseding figures published in Water-Supply Papers 351 and 381, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1912		1912		1913	
Dec. 9.....	350	Dec. 30.....	355	Dec. 28.....	150
10.....	515	31.....	350	29.....	190
11.....	665			30.....	220
12.....	615	1913		31.....	250
13.....	575	Dec. 11.....	430	1914	
14.....	560	12.....	390	Apr. 1.....	430
15.....	520	13.....	355	2.....	515
16.....	490	14.....	315	3.....	475
17.....	470	15.....	285	4.....	430
18.....	460	16.....	260	5.....	410
19.....	500	17.....	240	6.....	410
20.....	570	18.....	230	7.....	390
21.....	540	19.....	205	8.....	370
22.....	485	20.....	196	9.....	430
23.....	450	21.....	188	10.....	590
24.....	430	22.....	168	11.....	785
25.....	410	23.....	160	12.....	820
26.....	400	24.....	152	13.....	785
27.....	370	25.....	142	14.....	725
28.....	360	26.....	136	15.....	695
29.....	360	27.....	138	16.....	695

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1912.....	787	350	482	1.99	2.29
Calendar year 1912.....	6,720	25	522	2.16	29.38
Water year 1912-13.....	6,720	19	555	2.29	31.15
December 1914.....	853	136	291	1.20	1.38
Calendar year 1913.....	6,500	19	591	2.44	33.15
April 1914.....	7,250	370	1,640	6.78	7.56
Water year 1913-14.....	7,250	25	514	2.12	28.80
Calendar year 1914.....	7,250	25	373	1.54	20.90

## Sandy River near Mercer, Maine

Location.--Lat 44°42'30", long. 69°56'25", on right bank 0.9 mile upstream from Bog Stream, 3 miles north of Mercer, Somerset County, and 9½ miles upstream from mouth.

Drainage area.--514 sq mi.

Records available.--October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 197.1 ft above mean sea level, datum of 1929.

Average discharge.--24 years (1928-52), 899 cfs.

Extremes.--Maximum discharge during year, 14,200 cfs Nov. 4 (gage height, 10.54 ft); minimum, 56 cfs Sept. 18, 19 (gage height, 2.38 ft).

1928-52: Maximum discharge, 38,600 cfs (revised) Mar. 19, 1936 (gage height, 16.75 ft), from rating curve extended above 12,000 cfs on basis of records for stations on Kennebec River at Bingham and Waterville, Carrabassett River near North Anson, and Sebasticook River near Pittsfield; minimum, 32 cfs Sept. 22-26, 1939 (gage height, 2.15 ft).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some regulation at low flow by mills above station.

Revisions (water years).--W 756: 1933. W 801: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 7

Apr. 8 to Sept. 30

2.8	119	5.0	1,620	2.3	47	4.5	1,100
3.0	170	6.0	3,050	2.5	70	5.0	1,650
3.5	350	7.0	5,020	2.7	104	6.0	3,100
4.0	640	8.0	7,280	3.0	177	7.0	5,180
4.5	1,070	10.0	12,700	3.5	366	8.0	7,550
				4.0	675	9.0	10,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	176	626	800	315	655	450	1,400	2,370	1,020	232	81	63
2	167	648	720	390	625	445	1,550	1,860	7,070	215	78	78
3	167	3,600	660	405	605	440	1,740	1,590	4,630	205	73	72
4	159	11,500	600	400	580	440	2,130	1,400	2,340	202	70	102
5	148	4,060	580	390	810	440	2,560	1,390	2,640	183	72	117
6	146	2,380	2,300	375	1,090	460	5,020	1,240	2,040	180	72	110
7	143	2,140	4,100	365	1,060	545	6,410	1,310	1,600	177	70	102
8	193	8,210	2,720	350	945	585	5,570	1,440	1,440	174	70	90
9	472	5,280	2,040	340	845	550	5,130	1,450	1,220	169	70	86
10	397	4,000	1,690	335	780	495	5,460	1,540	1,000	160	70	80
11	303	2,500	1,260	325	725	450	6,880	1,390	859	163	72	73
12	257	1,500	960	315	690	1,070	5,710	2,780	785	155	70	70
13	219	1,000	740	305	640	1,770	4,750	9,880	696	152	70	65
14	187	860	578	305	*610	1,730	5,300	4,150	619	149	69	62
15	170	960	520	300	585	1,510	6,540	2,750	546	144	68	62
16	170	1,100	465	605	570	1,370	5,970	2,820	492	130	68	62
17	173	1,220	445	*1,170	565	1,200	5,890	3,240	474	125	70	60
18	167	1,180	420	1,150	560	*1,080	*5,620	2,310	474	123	69	57
19	159	1,060	395	1,110	545	1,040	5,870	1,810	492	121	142	62
20	146	900	390	1,050	535	990	6,680	1,540	450	114	155	66
21	143	710	380	970	525	990	8,010	1,910	415	106	132	64
22	141	600	440	900	515	1,130	*5,410	*3,770	348	104	125	62
23	138	670	1,260	830	505	1,540	4,770	2,340	316	102	110	65
24	136	730	1,160	795	495	1,500	5,130	1,760	316	99	102	68
25	950	680	680	765	490	1,370	3,570	1,490	304	91	93	68
26	1,690	660	625	765	460	1,360	3,140	1,570	304	88	*66	69
27	829	920	500	880	465	1,390	3,320	2,440	334	88	63	68
28	599	1,090	420	845	460	1,510	3,410	1,660	329	86	78	62
29	571	960	360	770	455	1,490	3,000	1,310	276	84	86	63
30	648	850	305	715	-	1,350	3,150	1,190	243	83	84	66
31	612	-	270	685	-	1,310	-	1,050	-	*83	70	-
Total	10,578	62,594	28,983	19,220	18,410	32,000	139,290	68,750	34,072	4,287	2,628	2,194
Mean	341	2,066	935	620	635	1,032	4,643	2,218	1,136	138	84.8	73.1
Cfs/m	0.663	4.06	1.62	1.21	1.24	2.01	9.03	4.32	2.21	0.268	0.165	0.142
In.	0.76	4.53	2.10	1.40	1.34	2.32	10.08	4.98	2.47	0.31	0.19	0.16

Calendar year 1951: Max 18,300 Min 100 Mean 1,146 Cfs/m 2.23 In. 30.23  
Water year 1951-52: Max 11,500 Min 57 Mean 1,156 Cfs/m 2.25 In. 30.64

Peak discharge (base, 6,000 cfs).--Nov. 4 (10 a.m.) 14,200 cfs (10.54 ft); Apr. 11 (7 a.m.) 7,310 cfs (7.90 ft); Apr. 15 (7 a.m.) 6,880 cfs (7.72 ft); Apr. 21 (6:30 a.m.) 9,700 cfs (8.82 ft); May 13 (7 a.m.) 12,600 cfs (9.83 ft); June 2 (6:30 p.m.) 10,800 cfs (9.19 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 10 to Dec. 6, Dec. 28 to Jan. 16; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for stations on nearby streams. Stage-discharge relation affected by ice Dec. 12-13, Dec. 15 to Apr. 7.

## Sebasticook River near Pittsfield, Maine

Location.--Lat 44°42'55", long. 69°24'55", on right bank  $1\frac{1}{2}$  miles upstream from Twenty-five mile Stream and 4 miles south of Pittsfield, Somerset County.

Drainage area.--598 sq mi.

Records available.--October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 133.9 ft above mean sea level, datum of 1929.

Average discharge.--23 years (1929-52), 899 cfs.

Extremes.--Maximum discharge during year, 6,040 cfs Apr. 9 (gage height, 7.89 ft); minimum, 19 cfs July 29, Aug. 19 (gage height, 1.37 ft).  
1928-52: Maximum discharge, 14,400 cfs Mar. 22, 1936 (gage height, 13.18 ft); minimum, 2.9 cfs Dec. 30, 1941 (gage height, 0.40 ft); minimum daily, 4.8 cfs Dec. 13, 1941.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Considerable diurnal fluctuation caused by powerplant above station. Flow partly regulated by powerplants above station and by Great Moose and Sebasticook Lakes and Plymouth Pond (combined capacity, about 2,345,000,000 cu ft).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 9					Apr. 10 to Sept. 30				
1.8	75	3.5	825		1.3	15	2.3	190	
2.0	115	4.0	1,250		1.5	28	2.6	305	
2.2	162	5.0	2,300		1.7	45	3.0	500	
2.4	226	6.0	3,480		2.0	100			
2.6	307	7.0	4,760		Note.--Same as preceding table above 3.0 ft.				
3.0	500	8.0	6,210						

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	305	380	722	955	1,620	915	1,840	1,170	701	480	124	64
2	140	385	650	905	1,440	890	1,950	1,040	1,100	465	83	86
3	270	535	860	915	1,250	985	2,410	897	1,440	445	25	220
4	188	1,330	722	905	1,180	975	2,850	722	1,740	415	164	192
5	265	1,550	648	905	1,200	1,100	3,260	600	2,080	245	154	235
6		1,600	743	880	*1,250	1,190	4,020	360	2,220	235	160	29
7	148	1,950	1,220	890	1,400	1,060	5,030	505	2,130	465	144	27
8	240	2,360	1,740	920	1,430	845	5,620	525	1,990	400	156	150
9	140	2,680	2,100	960	1,330	758	5,850	495	1,910	280	65	156
10	285	2,820	2,300	*970	1,250	*770	5,780	330	1,500	255	26	154
11	240	2,780	2,240	810	1,220	750	5,730	346	1,310	270	156	160
12	*265	2,580	2,080	680	1,170	790	5,660	545	1,120	142	162	162
13	120	2,280	1,880	500	1,160	815	5,520	655	925	174	149	20
14	160	2,010	1,620	615	1,140	825	5,320	830	700	440	148	20
15	158	1,750	1,410	695	1,090	835	5,220	915	591	400	138	235
16	152	1,540	1,220	795	1,010	910	5,150	990	690	370	24	104
17	160	1,430	1,160	970	920	955	5,000	1,030	580	375	27	75
18	186	1,300	1,140	1,160	905	900	4,820	1,070	590	198	380	104
19	158	1,160	1,130	1,360	1,270	855	4,540	1,250	575	27	94	106
20	82	1,100	1,120	1,600	1,230	840	4,080	1,160	560	116	20	23
21	124	1,050	1,120	1,830	1,000	855	3,720	1,170	385	405	21	24
22	245	929	1,130	1,950	960	960	*3,360	1,190	350	210	23	132
23	144	818	1,140	2,080	865	1,190	2,950	1,200	545	162	25	136
24	154	802	1,200	2,390	840	1,300	2,620	1,060	510	160	27	132
25	325	818	1,270	2,520	895	1,280	2,320	994	490	295	29	138
26	385	788	1,320	2,500	775	1,250	3,220	1,150	390	25	56	138
27	110	795	1,340	2,500	905	1,350	1,750	1,110	550	146	86	142
28	315	780	1,250	2,450	880	1,530	1,520	1,100	345	390	100	*24
29	380	758	1,120	2,300	895	1,570	1,390	1,030	360	*330	110	168
30	290	750	1,040	2,100	-	1,730	1,300	950	550	20	118	158
31	390	-	1,000	1,860	-	1,850	-	730	-	104	90	-
Total	6,684	41,958	39,415	42,870	32,450	32,828	113,800	27,119	28,927	8,444	3,083	3,534
Mean	216	1,399	1,271	1,383	1,115	1,059	3,793	875	964	272	99.5	118
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 7,710 Min 34 Mean 1,279 Cfsm 2.21 In. 30.07

Water year 1951-52: Max 5,850 Min 20 Mean 1,041 Cfsm 1.80 In. 24.42

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 17 to Feb. 20.



## Cobbosseecontee Stream at Gardiner, Maine

Location.--Lat 44°13'15", long. 69°47'25", at dam of Gardiner Water Power Co. in Gardiner, Kennebec County, 1.2 miles upstream from mouth.

Drainage area.--217 sq mi.

Records available.--June 1890 to September 1952.

Gage.--Staff gages in pond above dam and in tailrace of powerplant. Altitude of gage is at mean sea level (from topographic map).

Average discharge.--62 years, 326 cfs.

Extremes.--Maximum and minimum daily discharges for the water years 1910-15 and 1952 are contained in the following table:

Water year	Maximum day		Minimum day	
	Date	Discharge (cfs)	Date	Discharge (cfs)
1910.....	May 2,3,6,7,1910	882	Many days	0
1911.....	Apr. 1,9,1911	765	do	7
1912.....	June 1,3,1912	1,590	do	7
1913.....	Apr. 7,1913	1,670	do	7
1914.....	Apr. 12,13,1914	1,580	do	7
1915.....	Feb. 27,1915	960	do	10
1952.....	Apr. 7-17,1952	2,470	Sept.29,30,1952	70

1890-1952: Maximum discharge, 5,020 cfs Mar. 21, 1936 (elevation, 139.4 ft above mean sea level); maximum daily, 4,320 cfs Mar. 20, 21, 1936; minimum, leakage only, when all gates in dam are closed.

Remarks.--Discharge is sum of flow over dam, through gates and water wheels (computed on basis of coefficients and experiments), and leakage. Flow regulated by Cobbosseecontee Lake (surface area, 8.5 sq mi) and several other lakes above station.

Cooperation.--Records of daily discharge furnished by S. D. Warren Co.

Revisions (water years).--W 1201: Drainage area. W 541: 1916-20. Revised figures of discharge for the water years 1910-15, superseding those published in Water-Supply Papers 281, 301, 321, 351, 381, and 401, are given herewith.

Discharge, in cubic feet per second, water year October 1909 to September 1910

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	260	260	260	237	247	287	343	867	287	287	267	267
2	260	260	260	7	247	287	352	892	287	287	267	267
3	0	260	260	237	247	287	361	882	287	7	267	267
4	260	260	260	237	247	287	352	857	287	27	267	7
5	260	260	0	237	247	287	332	857	7	167	267	267
6	260	260	260	237	7	7	317	862	287	287	267	267
7	260	0	260	237	247	297	313	862	287	177	7	267
8	260	260	260	237	247	357	313	377	287	267	267	267
9	260	260	260	7	247	407	322	297	287	267	267	267
10	0	260	260	222	247	397	7	287	287	7	267	267
11	260	260	260	207	247	377	287	287	287	267	267	7
12	260	260	0	207	247	342	287	287	7	267	267	267
13	260	260	260	207	7	22	287	287	287	267	267	267
14	260	0	260	207	247	321	287	287	287	267	7	267
15	260	260	260	207	247	321	287	7	287	267	267	267
16	260	260	260	7	247	321	287	287	287	267	267	267
17	0	260	260	207	247	321	7	287	287	7	267	267
18	260	260	260	207	247	312	287	287	287	267	267	7
19	260	260	0	207	247	307	267	287	7	267	267	267
20	260	260	260	207	7	7	267	287	287	267	267	267
21	260	0	260	207	247	287	287	287	287	267	7	267
22	260	260	260	222	247	287	267	7	287	267	267	267
23	260	260	260	7	247	287	277	287	287	267	267	267
24	0	260	260	267	247	287	7	287	287	7	267	267
25	260	260	260	252	247	287	287	287	287	267	267	7
26	260	260	0	237	247	297	287	287	7	267	267	267
27	260	260	260	237	7	167	292	287	287	267	267	267
28	260	0	230	237	277	327	452	287	287	267	7	267
29	260	260	230	237	-	327	587	7	287	267	267	267
30	260	260	230	7	-	332	715	27	287	267	267	267
31	0	260	230	247	-	343	-	287	-	7	267	-
Total	6,760	6,760	6,990	5,922	5,986	8,779	8,990	11,997	7,490	6,607	7,237	6,970
Mean	218	225	222	191	214	283	300	387	250	213	233	232
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1909: Max	2,000			Min 0		Mean 298		Cfsm -		In. -		
Water year 1909-10: Max	882			Min 0		Mean 248		Cfsm -		In. -		

## Cobbosseecontee Stream at Gardiner, Maine--Continued

Discharge, in cubic feet per second, water year October 1910 to September 1911

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	227	157	7	187	127	765	287	267	262	207	207
2	7	227	157	157	187	127	707	287	287	7	207	207
3	267	227	157	157	187	127	602	287	267	257	207	7
4	267	227	7	157	187	127	427	287	7	132	207	207
5	267	227	157	147	7	7	357	287	267	127	207	207
6	267	7	157	157	187	127	317	287	267	207	7	207
7	267	227	157	157	187	127	417	7	267	207	207	207
8	267	227	157	7	187	127	657	267	267	207	207	207
9	7	227	157	157	197	127	765	287	267	7	207	207
10	227	227	157	157	207	127	727	287	267	207	207	7
11	227	227	7	157	207	127	517	287	7	207	207	207
12	227	227	147	157	7	7	342	287	267	207	207	207
13	227	7	157	157	207	127	342	287	267	207	7	207
14	227	207	127	157	207	152	342	7	267	207	207	207
15	227	207	127	7	197	127	437	277	287	207	207	207
16	7	207	127	157	182	172	512	277	267	7	207	207
17	227	207	127	157	177	157	527	277	267	207	207	7
18	227	207	7	157	177	167	432	277	7	207	207	207
19	227	207	127	157	7	7	342	277	267	207	207	207
20	227	7	127	157	177	207	312	277	267	207	7	207
21	227	177	127	157	177	207	287	7	267	207	207	207
22	227	177	127	7	177	207	287	267	267	207	207	207
23	7	177	117	157	177	207	7	267	267	7	207	207
24	227	92	107	157	152	207	267	267	267	207	207	7
25	227	177	7	157	127	207	287	267	7	207	207	207
26	227	177	37	157	7	7	287	267	267	207	207	207
27	227	7	127	157	127	207	287	267	267	207	7	207
28	227	157	127	157	127	247	287	7	262	207	207	207
29	227	157	127	7	-	287	287	267	262	207	207	207
30	7	157	132	187	-	287	7	137	262	7	207	207
31	227	-	137	187	-	527	-	267	-	207	207	-
Total	6,217	5,215	3,652	4,107	4,336	4,997	12,136	7,407	6,955	5,367	5,617	5,410
Mean	201	174	118	132	155	161	405	239	232	173	181	180
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1910: Max	862			Min	7	Mean	233	Cfsm	-	In.	-	
Water year 1910-11: Max	765			Min	7	Mean	196	Cfsm	-	In.	-	

Discharge, in cubic feet per second, water year October 1911 to September 1912

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	117	127	187	207	237	587	292	1,590	267	257	7
2	207	117	127	187	207	237	587	292	1,560	267	257	267
3	207	112	7	187	207	7	577	292	1,590	267	257	267
4	207	107	127	187	7	237	547	292	1,480	157	7	267
5	207	7	127	177	207	237	537	7	1,280	177	267	267
6	207	127	127	177	222	237	527	277	947	267	267	267
7	207	127	127	7	237	237	507	277	497	7	267	267
8	7	127	127	177	237	237	547	277	297	257	267	7
9	167	127	127	177	237	207	667	277	7	257	267	257
10	167	127	7	177	237	7	807	277	297	257	267	257
11	167	127	127	177	7	237	877	277	297	257	7	257
12	167	7	127	177	237	237	937	7	297	257	267	257
13	167	127	127	177	237	237	947	267	297	257	267	257
14	167	127	127	7	237	247	937	267	297	7	267	257
15	7	127	127	177	237	257	937	267	297	257	267	7
16	167	127	127	177	237	287	1,050	267	7	257	267	197
17	167	127	7	177	237	657	1,140	267	267	257	267	197
18	142	127	127	177	7	727	967	407	267	257	7	197
19	152	7	127	177	237	747	867	537	267	257	267	197
20	167	127	127	177	237	777	907	567	267	257	267	197
21	167	127	127	7	237	807	1,060	567	267	7	267	197
22	7	127	127	207	237	787	987	437	267	257	267	7
23	167	127	127	207	237	737	897	317	7	257	267	197
24	167	127	7	207	237	667	1,010	307	267	257	267	197
25	167	127	37	207	7	577	1,010	297	267	257	7	197
26	167	7	137	207	237	387	857	7	267	257	267	197
27	167	127	192	207	237	317	687	297	267	257	267	197
28	137	127	177	7	237	317	407	297	267	7	267	197
29	7	127	177	207	237	317	307	297	267	257	267	197
30	167	67	177	207	-	357	292	307	7	257	267	197
31	137	-	7	207	-	477	-	1,010	-	257	267	-
Total	4,517	3,215	3,472	5,117	5,815	12,037	25,060	9,830	14,255	6,807	7,207	5,740
Mean	146	107	112	165	201	388	769	317	475	220	232	191
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1911: Max	765			Min	7	Mean	185	Cfsm	-	In.	-	
Water year 1911-12: Max	1,590			Min	7	Mean	277	Cfsm	-	In.	-	

## Cobboosseecontee Stream at Gardiner, Maine--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	217	7	267	287	287	819	257	227	257	257	207
2	197	217	267	267	7	7	877	257	849	257	257	207
3	197	7	287	267	287	287	902	257	837	257	257	207
4	197	267	267	267	287	287	907	127	617	132	257	207
5	197	257	267	7	287	287	1,080	257	367	177	257	207
6	7	257	267	267	287	287	1,610	257	307	7	257	207
7	197	257	267	267	287	287	1,670	257	307	257	257	7
8	197	257	7	267	287	287	1,635	257	7	257	257	207
9	197	257	267	267	7	7	1,580	257	272	257	257	197
10	197	7	267	267	287	287	1,470	257	257	257	7	187
11	197	267	267	267	287	287	1,210	7	257	257	257	187
12	197	267	267	7	287	287	857	257	257	257	257	187
13	7	267	267	267	287	287	817	257	257	7	257	187
14	197	267	267	267	287	287	1,050	257	257	257	257	7
15	197	267	7	267	287	287	1,040	257	7	257	257	187
16	197	267	267	267	7	7	957	257	257	257	257	187
17	197	7	267	267	287	287	747	257	257	257	7	187
18	197	267	267	267	287	287	517	7	257	257	257	187
19	197	267	267	7	287	287	307	257	257	257	257	187
20	7	267	267	267	287	287	157	257	257	7	257	187
21	197	267	267	267	287	347	287	257	257	257	257	7
22	197	267	7	277	287	617	287	257	7	257	257	187
23	197	267	267	287	7	807	287	257	257	257	257	187
24	197	7	267	287	287	827	272	257	257	257	7	187
25	197	267	137	287	287	787	257	7	257	257	257	187
26	197	267	137	7	287	787	257	257	257	257	257	187
27	7	267	267	287	287	777	7	257	257	7	257	187
28	217	137	267	287	287	777	257	257	257	257	257	7
29	217	137	7	287	787	257	7	257	257	257	257	187
30	217	137	267	287	-	757	257	197	257	257	257	187
31	217	257	267	287	-	787	-	257	-	257	7	-
Total	5,427	6,550	6,717	7,407	6,916	12,967	22,609	7,027	8,437	6,762	6,967	5,040
Mean	175	218	217	239	247	418	754	227	281	218	225	168
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1912: Max 1,587 Min 7 Mean 297 Cfsm - In. -  
 Water year 1912-13: Max 1,670 Min 7 Mean 282 Cfsm - In. -

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	187	257	277	280	10	10	809	290	260	260	260	260
2	187	7	277	280	280	390	967	290	280	260	10	260
3	187	257	277	280	280	693	1,130	10	260	260	260	260
4	187	257	277	10	280	1,030	1,100	290	260	260	260	260
5	7	257	277	280	280	1,060	1,140	290	260	10	260	260
6	187	257	277	280	280	1,030	1,100	260	260	260	260	10
7	197	257	277	280	280	970	1,100	260	10	260	260	260
8	207	257	277	280	10	971	1,100	260	260	260	260	260
9	207	7	277	280	280	882	1,450	260	260	260	10	260
10	207	257	277	280	280	856	1,570	10	260	260	260	260
11	207	257	277	10	280	826	1,550	780	260	260	260	260
12	7	257	277	280	280	805	1,580	1,050	260	10	260	260
13	207	257	277	280	280	806	1,580	1,060	260	260	260	10
14	207	257	7	280	280	778	1,540	993	10	260	260	260
15	207	257	277	280	10	766	1,450	459	260	260	260	260
16	232	7	277	280	280	764	1,380	310	260	260	10	260
17	257	257	277	280	280	764	1,240	10	260	260	260	260
18	257	257	277	10	280	764	1,250	260	260	260	260	260
19	7	257	277	280	280	784	1,310	260	260	10	260	260
20	257	257	277	280	280	786	1,300	260	260	260	260	10
21	257	257	97	280	280	720	1,570	260	10	260	260	190
22	257	257	277	280	10	536	1,570	260	260	260	260	190
23	257	7	277	280	290	396	1,570	260	260	260	10	190
24	257	277	277	280	290	392	1,370	10	260	260	260	190
25	257	277	137	10	290	391	693	260	260	260	260	190
26	7	277	277	280	290	389	722	260	260	10	260	190
27	257	137	277	280	290	551	715	260	260	260	260	10
28	257	277	277	280	290	583	725	260	10	260	260	190
29	257	277	277	280	-	799	715	260	260	260	260	190
30	257	7	277	280	-	764	555	260	260	260	10	190
31	257	-	277	280	-	762	-	10	-	260	260	-
Total	6,182	6,440	7,457	7,600	6,820	22,018	35,849	10,022	6,800	7,060	6,810	6,170
Mean	199	215	241	245	244	710	1,190	323	227	228	220	206
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1913: Max 1,667 Min 7 Mean 285 Cfsm - In. -  
 Water year 1913-14: Max 1,580 Min 7 Mean 354 Cfsm - In. -

## Cobboosseecontee Stream at Gardiner, Maine--Continued

Discharge, in cubic feet per second, water year October 1914 to September 1915

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	10	180	180	220	680	280	280	150	190	10	280
2	190	190	180	180	220	370	280	10	210	190	280	280
3	190	190	180	10	220	290	280	280	210	190	280	280
4	10	190	180	180	220	290	10	280	210	110	280	280
5	190	190	180	180	220	290	280	280	210	10	280	10
6	190	190	10	180	220	290	280	280	10	190	280	280
7	190	190	180	180	10	10	280	280	210	190	280	280
8	190	10	180	180	220	290	280	280	210	380	10	280
9	190	190	180	180	220	290	280	10	210	880	280	280
10	190	190	180	10	220	290	280	280	210	710	280	280
11	10	190	180	180	220	290	10	280	210	580	280	280
12	190	190	180	180	220	290	280	280	210	370	280	10
13	190	190	10	180	220	290	280	280	10	280	280	280
14	190	190	180	180	10	10	280	280	210	280	280	280
15	190	10	180	180	220	280	280	280	210	280	10	280
16	190	180	180	180	280	280	280	10	210	280	280	280
17	190	180	180	10	280	280	280	210	210	40	280	280
18	10	180	180	180	280	280	10	210	210	280	280	280
19	190	180	180	180	280	280	280	210	210	280	280	10
20	190	180	10	230	280	280	280	210	10	280	280	280
21	190	180	180	230	10	10	280	210	210	280	280	280
22	190	10	180	230	280	280	280	210	210	280	10	280
23	190	180	180	230	280	280	280	10	210	280	280	280
24	190	180	180	10	280	280	280	210	210	10	280	280
25	10	180	180	230	280	280	10	210	210	280	280	280
26	190	10	180	230	910	280	280	210	210	280	280	10
27	190	180	10	230	980	280	280	210	10	280	280	280
28	190	180	180	230	880	10	280	210	190	280	280	280
29	190	10	180	230	-	280	280	210	190	280	10	280
30	190	180	180	230	-	280	280	10	190	280	280	280
31	190	-	180	10	-	280	-	30	-	280	280	-
Total	5,170	4,260	4,360	4,910	7,960	7,870	6,800	5,980	5,380	8,210	6,810	6,800
Mean	167	142	141	158	284	254	227	193	179	265	220	227
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1914: Max			1,580		Min 10	Mean 337	Cfsm -	In. -				
Water year 1914-15: Max			980		Min 10	Mean 204	Cfsm -	In. -				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	210	690	410	990	555	755	550	460	100	150	130
2	250	210	645	430	965	555	785	555	630	100	150	160
3	240	290	625	440	885	540	1,000	515	740	100	150	160
4	230	370	805	440	880	525	1,170	500	740	100	150	160
5	230	685	590	440	1,000	525	1,420	485	830	165	150	135
6	230	900	925	440	1,060	540	2,080	440	890	230	180	115
7	230	1,340	955	440	1,080	540	2,470	380	805	230	150	135
8	230	1,800	985	430	1,020	530	2,470	305	855	210	150	160
9	230	1,800	785	420	975	525	2,470	260	535	210	150	160
10	230	1,140	735	410	925	510	2,470	280	495	210	150	150
11	230	840	670	400	925	560	2,470	260	455	200	150	140
12	230	785	605	400	950	710	2,470	260	440	190	150	140
13	230	565	555	390	880	850	2,470	315	345	190	150	125
14	230	415	510	380	855	925	2,470	415	255	190	150	125
15	230	375	410	400	810	925	2,470	490	255	190	150	130
16	230	520	320	420	675	885	2,470	555	260	180	135	130
17	230	735	320	430	625	840	2,470	605	270	170	135	130
18	230	765	325	675	645	795	2,390	590	270	170	150	130
19	220	765	330	890	670	745	2,270	525	270	170	150	130
20	210	735	350	890	645	705	2,070	460	270	170	150	120
21	210	710	640	915	625	685	1,710	460	270	180	150	120
22	210	710	915	915	625	655	1,470	475	270	150	150	130
23	220	710	890	1,260	625	630	1,180	430	250	150	150	130
24	230	710	810	1,600	625	630	765	385	230	150	150	130
25	220	710	725	1,380	625	630	600	355	230	150	155	130
26	210	760	660	1,190	610	630	585	355	230	150	160	130
27	210	810	605	1,220	590	680	550	370	230	150	160	120
28	210	760	465	1,220	590	785	535	370	165	150	160	120
29	210	710	340	1,180	570	785	550	370	100	150	160	70
30	210	710	365	1,140	-	785	565	385	100	150	150	70
31	210	-	390	1,060	-	785	-	400	-	150	100	-
Total	6,980	22,345	18,640	22,655	22,925	20,935	49,600	13,060	11,945	5,125	4,595	3,915
Mean	225	745	601	731	790	675	1,653	421	398	165	148	131
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1951: Max			2,770		Min 120	Mean 528	Cfsm -	In. -				
Water year 1951-52: Max			2,470		Min 70	Mean 554	Cfsm -	In. -				

## Smaller reservoirs in Kennebec River basin, Maine

Brassua Lake on Moose River, 4 miles southwest of Rockwood, completed in 1928, for power, has usable capacity of 8,560,000,000 cu ft between gage heights 43.0 and 73.0 ft. Gage-height record furnished by Kennebec Water Power Co.

Second Roach Pond on Roach River, 6 miles east of Kokadjo, used for power, has usable capacity of 216,000,000 cu ft between gage heights 0.5 and 10.0 ft. Gage-height record furnished by Kennebec Water Power Co.

First Roach Pond on Roach River, at Kokadjo, used for power, has usable capacity of 938,000,000 cu ft between gage heights 1.5 and 8.0 ft. Gage-height record furnished by Kennebec Water Power Co.

Moxie Pond on Moxie Stream,  $4\frac{1}{2}$  miles east of The Forks, used for power, has usable capacity of 540,000,000 cu ft between gage heights 6.0 and 14.0 ft. Gage-height record furnished by Kennebec Water Power Co.

Flagstaff Lake on Dead River, three-quarters of a mile upstream from Black Brook, in T. 3, R. 4, completed in 1950, for power, has usable capacity of 12,050,000,000 cu ft between elevations 1,110 and 1,146 ft. Record of elevations furnished by Kennebec Water Power Co.

Dead River Pond on Dead River, 15 miles upstream from The Forks, completed in 1905, for log driving, has usable capacity of 225,000,000 cu ft between gage heights 3.5 and 12.0 ft. Gage-height record furnished by Kennebec Water Power Co.

Spencer Lake on Little Spencer Stream, 4 miles upstream from mouth, in T. 3, R. 5, used for power, has usable capacity of 639,000,000 cu ft between gage heights 3.5 and 12.0 ft. Gage-height record furnished by Kennebec Water Power Co.

Wyman Pond on Kennebec River,  $1\frac{1}{2}$  miles upstream from Bingham, completed in 1930, for power, has storage capacity of 2,630,000,000 cu ft in top 20 ft of pond (total capacity of pond, 9,080,000,000 cu ft). Gage-height record furnished by Central Maine Power Co.

Monthly gage height and contents, water year October 1951 to September 1952

Date	Brassua Lake†			Second Roach Pond†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	63.65	4,988	-	6.0	107	-
Oct. 31.....	61.5	4,265	-723	-	0	-107
Nov. 30.....	66.15	5,878	+1,613	-	0	0
Dec. 31.....	65.8	5,751	-127	-	0	0
Calendar year 1951.....	-	-	-1,128	-	-	-94
Jan. 31.....	64.4	5,250	-501	-	0	0
Feb. 29.....	63.3	4,868	-382	-	0	0
Mar. 31.....	50.15	1,180	-3,688	-	0	0
Apr. 30.....	68.2	6,647	+5,467	7.9	158	+158
May 31.....	73.8	8,812	+2,165	7.2	139	-19
June 30.....	73.8	8,896	+84	8.8	182	+43
July 31.....	67.8	6,494	-2,402	6.4	118	-64
Aug. 31.....	62.8	4,698	-1,796	-	0	-118
Sept. 30.....	61.25	4,183	-515	-	0	0
Water year 1951-52.....	-	-	-805	-	-	-107

Date	First Roach Pond†			Moxie Pond†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	7.6	883	-	10.2	307	-
Oct. 31.....	7.9	924	+41	11.5	417	+110
Nov. 30.....	6.0	664	-260	13.8	622	+205
Dec. 31.....	7.8	911	+247	12.8	532	-90
Calendar year 1951.....	-	-	+247	-	-	+157
Jan. 31.....	7.0	801	-110	12.3	487	-45
Feb. 29.....	7.0	801	0	12.0	460	-27
Mar. 31.....	-	0	-801	11.6	426	-34
Apr. 30.....	5.1	543	+543	14.0	640	+214
May 31.....	8.0	938	+395	14.5	685	+45
June 30.....	8.1	952	+14	14.5	685	0
July 31.....	7.5	870	-82	13.8	622	-63
Aug. 31.....	7.5	870	0	11.5	417	-205
Sept. 30.....	6.4	719	-151	10.5	332	-85
Water year 1951-52.....	-	-	-164	-	-	+25

† Gage height and contents at 7 a.m. on first day of following month.

## KENNEBEC RIVER BASIN

Smaller reservoirs in Kennebec River basin, Maine--Continued

Monthly gage height and contents, water year October 1951 to September 1952--Continued

Date	Flagstaff Laket			Dead River Pond†		
	Elevation (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	1,139.4	7,434	-	3.5	18	-
Oct. 31.....	1,134.65	4,954	-2,480	-	0	-18
Nov. 30.....	1,140.65	8,206	+3,252	-	0	0
Dec. 31.....	1,140.55	8,144	-62	-	0	0
Calendar year 1951.....	-	-	-2,511	-	-	0
Jan. 31.....	1,136.55	5,870	-2,274	-	0	0
Feb. 29.....	1,135.25	5,232	-638	-	0	0
Mar. 31.....	1,126.8	2,107	-3,125	-	0	0
Apr. 30.....	1,142.7	9,570	+7,463	-	0	0
May 31.....	1,144.75	11,070	+1,500	4.5	32	+32
June 30.....	1,144.35	10,768	-302	3.0	10	-22
July 31.....	1,137.75	6,498	-4,270	-	0	-10
Aug. 31.....	1,133.15	4,293	-2,205	-	0	0
Sept. 30.....	1,133.35	4,378	+85	-	0	0
Water year 1951-52.....	-	-	-3,056	-	-	-18

Date	Spencer Laket			Wyman Pond‡		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	10.4	503	-	83.9	8,920	-
Oct. 31.....	-	0	-503	83.8	8,900	-20
Nov. 30.....	-	0	0	83.0	8,790	-110
Dec. 31.....	-	0	0	84.4	8,990	+200
Calendar year 1951.....	-	-	0	-	-	+60
Jan. 31.....	-	0	0	81.4	8,570	-420
Feb. 29.....	-	0	0	82.7	8,750	+180
Mar. 31.....	-	0	0	80.5	8,440	-310
Apr. 30.....	12.5	683	+683	84.9	9,060	+620
May 31.....	12.5	683	0	84.7	9,040	-20
June 30.....	13.2	748	+65	83.6	8,900	-140
July 31.....	10.8	537	-211	84.0	8,930	+30
Aug. 31.....	7.3	263	-274	83.9	8,920	-10
Sept. 30.....	4.3	58	-205	83.8	8,900	-20
Water year 1951-52.....	-	-	-445	-	-	-20

† Gage height and contents at 7 a.m. on first day of following month.

‡ Gage height and contents at 12 p.m.

Diamond River near Wentworth Location, N. H.

Location.--Lat 44°52'40", long. 71°03'25", on left bank 0.7 mile above mouth and 1½ miles north of Wentworth Location, Coos County.

Drainage area.--153 sq mi.

Records available.--July 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,275 ft (from topographic map).

Average discharge.--11 years, 344 cfs.

Extremes.--Maximum discharge during year, 4,120 cfs June 2 (gage height, 7.85 ft); minimum, 6.8 cfs Sept. 1 (gage height, 0.81 ft).  
1941-52: Maximum discharge, 8,630 cfs June 16, 1943 (gage height, 10.66 ft), from rating curve extended above 3,000 cfs; minimum, 6.8 cfs Aug. 27, 28, 1949, Sept. 1, 1952 (gage height, 0.81 ft).

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.8	6.4	2.5	213
.9	10	3.0	350
1.0	15	3.5	530
1.2	27	4.0	740
1.4	42	5.0	1,340
1.6	64	6.0	2,140
1.8	89	7.0	3,130
2.0	117		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	193	280	300	92	68	100	1,630	890	89	14	7.1
2	64	169	284	285	86	66	116	1,090	3,140	77	11	20
3	65	1,340	251	250	82	66	180	894	1,530	66	10	33
4	65	1,300	227	225	84	66	210	780	731	60	10	33
5	63	725	218	215	122	66	180	713	686	56	11	27
6	57	426	644	205	170	68	210	805	526	50	14	20
7	57	350	986	198	*130	68	350	1,270	614	43	14	15
8	196	810	1,030	*196	120	70	290	1,260	618	40	12	12
9	236	690	652	190	110	65	290	1,280	459	36	10	10
10	153	441	462	190	102	66	350	1,230	370	34	9.6	10
11	117	364	308	188	98	76	695	992	320	36	10	9.3
12	102	320	305	178	94	*86	600	1,630	353	45	*15	10
13	89	280	211	172	92	85	515	2,370	324	42	19	10
14	79	320	191	170	86	84	665	1,340	251	34	18	9.3
15	76	980	178	180	79	82	1,090	873	211	31	14	7.5
16	74	656	180	230	76	80	885	1,210	198	33	12	7.5
17	69	618	150	196	74	79	1,000	934	198	28	37	9.3
18	65	498	138	160	72	77	1,480	674	334	26	38	10
19	63	370	132	138	71	76	1,850	557	236	26	27	12
20	62	250	160	122	70	76	3,220	488	294	27	20	26
21	58	178	270	114	69	74	3,130	940	224	26	*16	34
22	57	152	425	104	68	80	2,060	1,010	171	22	*14	20
23	56	295	355	98	66	93	3,060	731	142	21	14	20
24	56	605	305	82	66	108	*3,060	553	120	20	14	17
25	128	335	260	86	66	104	2,000	466	153	19	15	16
26	285	260	220	80	68	99	2,030	594	155	16	14	16
27	179	220	190	80	68	98	2,560	652	213	16	11	21
28	137	190	170	136	68	94	2,650	470	165	16	10	23
29	125	245	160	120	68	92	2,660	384	119	18	8.9	22
30	114	280	152	108	-	85	2,640	374	102	18	12	18
31	112	-	190	100	-	94	-	311	-	16	9.3	-
Total	3,131	14,450	9,644	5,106	2,517	2,499	40,126	28,695	13,707	1,087	463.8	505.0
Mean	101	482	311	165	86.8	80.6	1,338	926	457	35.1	15.0	16.8
Cfsm	0.660	3.15	2.03	1.08	0.567	0.527	8.75	6.05	2.99	0.229	0.098	0.110
In.	0.76	3.51	2.34	1.24	0.61	0.61	9.76	6.98	3.34	0.26	0.11	0.12
Calendar year 1951: Max			3,300	Min	37	Mean	340	Cfsm	2.22	In.	30.16	
Water year 1951-52: Max			3,220	Min	7.1	Mean	333	Cfsm	2.18	In.	29.64	

Peak discharge (base, 3,600 cfs)--Apr. 20 (7:30 p.m.) 4,020 cfs (7.77 ft); Apr. 23 (11 p.m.) 3,770 cfs (7.56 ft); June 2 (1 to 2 a.m.) 4,120 cfs (7.85 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 15 to Jan. 7; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Nov. 20-29, Jan. 8 to Apr. 17.

## Androscoggin River at Errol, N. H.

Location.--Lat 44°46'55", long. 71°07'45", on right bank 0.4 mile downstream from Errol Dam, 0.4 mile northeast of Errol, Coos County, and 0.6 mile upstream from Clear Stream.

Drainage area.--1,045 sq mi.

Records available.--January 1905 to September 1952 (monthly discharge only, October 1922 to November 1943 in Water-Supply Paper 1301).

Gage.--Water-stage recorder. Datum of gage is 1,227.30 ft above mean sea level, datum of 1929. Prior to Dec. 8, 1943, movable rod gage in dam 0.4 mile upstream at datum 5.0 ft higher.

Average discharge.--45 years, 1,861 cfs (unadjusted).

Extremes.--Maximum discharge during year, 8,780 cfs June 4 (gage height, 6.69 ft); minimum daily, 325 cfs Nov. 4.

1905-52: Maximum daily discharge, 15,700 cfs June 18, 1943; minimum daily, leakage only, at various times when gates in dam were closed.

Instantaneous maximums not available prior to Dec. 9, 1943.

Remarks.--Records excellent except those for periods of backwater from pulpwood, which are good. Flow regulated by Kennebago, Rangeley, Mooselookmeguntic, Richardson, Umbagog, and Azischohos Lakes (see pp. 108,109).

Cooperation.--Water-stage recorder inspected by employee of Union Water Power Co.

Revisions.--W 1001: Drainage area.

Rating table, water year 1951-52, except period of backwater from pulpwood (gage height, in feet, and discharge, in cubic feet per second)

0.6	304	2.5	1,760
.8	389	3.0	2,420
1.0	485	4.0	3,860
1.5	786	5.0	5,390
2.0	1,200	6.6	8,590

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,710	1,560	1,770	1,820	2,080	2,290	1,680	2,350	2,870	2,070	1,760	1,820
2	1,770	1,480	1,590	1,770	2,050	2,280	1,470	1,860	8,810	1,920	1,800	1,620
3	1,810	810	1,610	1,760	2,050	2,310	1,190	1,670	8,440	1,840	1,820	1,530
4	1,820	325	1,710	1,810	2,020	2,320	1,120	1,670	8,570	1,790	1,820	1,560
5	1,790	1,160	1,730	1,890	1,930	2,250	1,160	1,570	8,280	1,800	1,800	1,610
6	1,800	1,170	1,360	1,890	1,970	2,240	955	1,280	5,700	1,670	1,800	1,640
7	1,790	1,070	1,100	2,020	2,030	2,250	710	1,300	5,630	1,730	1,730	1,660
8	1,480	505	1,240	2,100	2,030	2,240	900	1,820	5,320	1,810	1,720	1,660
9	1,410	510	1,350	2,100	2,020	2,250	908	1,790	4,650	1,960	1,750	1,710
10	1,440	850	1,490	2,050	2,030	2,280	924	2,140	3,490	1,760	1,760	1,730
11	1,390	1,040	1,630	2,050	2,070	2,240	1,450	2,030	2,910	1,710	1,820	1,770
12	1,440	1,190	1,660	2,070	2,080	2,150	1,770	2,690	2,920	1,730	*1,810	1,760
13	1,530	1,350	1,790	2,030	2,150	2,180	1,790	3,530	2,470	1,720	1,790	1,750
14	1,550	1,270	1,860	2,020	2,160	2,100	1,960	3,310	2,120	1,770	1,800	1,750
15	1,520	988	1,600	2,010	2,140	2,110	2,370	2,140	2,100	1,800	1,810	1,750
16	1,520	940	1,890	1,940	2,140	2,140	2,520	2,280	2,110	1,820	1,790	1,730
17	1,550	650	1,980	1,960	2,120	2,180	2,560	1,980	2,200	1,840	1,810	1,720
18	1,570	995	2,050	1,880	2,140	2,180	2,560	1,660	2,220	1,820	1,680	1,730
19	1,590	1,170	2,070	1,890	2,120	2,200	2,760	1,740	2,030	1,810	1,760	1,720
20	1,570	1,170	2,120	1,920	2,120	2,190	3,110	1,680	2,110	1,810	1,820	1,610
21	1,560	1,320	1,920	1,920	2,110	2,120	3,830	1,920	2,190	1,800	*1,840	1,670
22	1,580	1,500	1,810	2,020	2,110	1,960	4,080	1,810	2,230	1,820	1,840	1,700
23	1,570	1,370	1,810	1,990	2,120	1,900	4,100	1,650	2,310	1,840	1,810	1,700
24	1,640	1,240	1,860	1,960	2,190	1,900	4,360	1,990	2,420	1,840	1,770	1,710
25	1,440	1,210	1,950	2,060	2,250	1,940	4,130	2,510	2,460	1,640	1,760	1,710
26	1,460	1,220	1,970	2,030	2,270	2,010	3,500	3,240	2,420	1,820	1,760	1,680
27	1,520	1,340	1,960	1,940	2,290	2,030	3,290	3,600	2,230	1,800	1,750	1,630
28	1,560	1,590	2,020	1,900	2,290	1,970	2,790	3,120	2,080	1,810	1,760	1,670
29	1,560	1,670	2,050	1,960	2,310	1,920	3,180	2,600	2,080	1,800	1,750	1,720
30	1,550	1,750	2,010	2,060	-	1,840	3,270	2,320	2,110	1,810	1,750	1,670
31	1,550	-	1,920	2,100	-	1,730	-	2,150	-	1,800	1,750	-
Total	49,000	34,403	55,060	60,940	61,390	65,700	70,397	67,400	105,480	56,180	54,990	50,690
Mean	1,581	1,147	1,776	1,968	2,117	2,119	2,347	2,174	3,516	1,812	1,774	1,690
(†)	-1,178	+1,867	-75	-1,068	-1,530	-1,538	+4,708	+3,325	-437	-1,934	-1,842	-1,727

Adjusted for change in reservoir contents

Mean	403	3,014	1,701	898	587	581	7,055	5,499	3,079	-122	-68	-37
Cfs	0.366	2.88	1.63	0.859	0.562	0.556	6.75	5.26	2.95	-0.117	-0.065	-0.035
In.	0.44	3.21	1.88	0.99	0.61	0.64	7.53	6.06	3.29	-0.13	-0.07	-0.04

	Observed						Adjusted					
Calendar year 1951:	Max	6,190		Min	325	Mean	2,122	Mean	1,982	Cfs	1.90	In. 25.74
Water year 1951-52:	Max	8,570		Min	325	Mean	1,999	Mean	1,874	Cfs	1.79	In. 24.41

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Rangeley-Umbagog series of lakes and Kennebago and Azischohos Lakes.

Note.--Stage-discharge relation affected by pulpwood July 1 to Sept. 30.



## Androscoggin River near Gorham, N. H.

Location.--Lat 44°26'30", long. 71°11'15", on right bank at Pulsifer Rips, 2 miles downstream from Dead River and 4 miles upstream from Gorham, Coos County.

Drainage area.--1,363 sq mi.

Records available.--October 1913 to September 1952 (monthly discharge only, October 1922 to February 1929 in Water-Supply Paper 1301). Published as "at Berlin" prior to September 1928.

Gage.--Water-stage recorder since Mar. 16, 1929. Datum of gage is 832.9 ft above mean sea level, datum of 1929. Prior to Sept. 30, 1928, staff gages showing head and tailwater elevations at site 3 miles upstream at different datum.

Average discharge.--39 years, 2,412 cfs.

Extremes.--Maximum discharge during year, 10,500 cfs June 5 (gage height, 7.79 ft); minimum, 784 cfs Nov. 28 (gage height, 2.36 ft); minimum daily, 1,580 cfs Oct. 12, Nov. 27.

1913-52: Maximum daily discharge, 20,000 cfs June 18, 1917, Apr. 30, 1923; minimum (since 1929), 456 cfs Aug. 10, 1947 (gage height, 1.74 ft), from rating curve extended below 1,400 cfs; minimum daily, 795 cfs Mar. 15, 1948.

Remarks.--Records excellent except those for periods of no gage-height record or backwater from paper mill waste, which are good. Flow regulated by powerplants above station and by Rangeley-Umbagog series of lakes and Kennebec and Azischoos Lakes (see p. 108).

Revisions (water years).--W 1001: Drainage area.

Rating table, water year 1951-52, except period of backwater from paper mill waste (gage height, in feet, and discharge, in cubic feet per second)

3.2	1,500	5.0	4,050
3.5	1,820	6.0	6,000
4.0	2,460	7.7	10,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,830	1,780	2,060	2,270	2,260	2,430	*2,180	4,740	2,970	2,090	1,820	1,760
2	1,820	1,810	2,020	2,240	2,280	2,420	2,490	3,340	8,680	2,040	1,810	1,840
3	1,890	2,940	1,900	2,200	2,220	2,400	2,380	2,970	10,100	1,940	1,840	1,730
4	1,920	3,800	1,890	2,120	2,270	2,430	2,280	2,680	9,820	1,820	1,820	1,710
5	1,900	2,380	2,000	2,150	2,320	2,430	2,120	2,640	10,100	1,840	1,860	1,530
6	1,900	2,260	2,460	2,150	2,260	2,430	2,790	2,350	8,610	1,820	1,940	1,640
7	1,880	2,110	2,430	2,110	2,310	2,420	2,730	2,390	6,960	1,780	1,860	1,690
8	2,140	*2,720	2,140	2,220	2,310	2,420	2,500	2,520	6,690	1,840	1,780	1,680
9	1,940	2,070	2,190	2,240	2,280	2,420	2,700	2,860	5,850	1,870	1,750	1,670
10	1,790	1,690	2,060	2,260	2,230	2,400	2,780	2,930	4,630	1,900	1,810	1,710
11	1,700	1,710	2,000	2,190	2,240	2,500	3,520	3,280	3,710	1,920	*1,820	1,720
12	1,580	1,720	1,940	2,190	2,290	2,820	3,810	3,970	3,530	1,820	1,820	1,730
13	1,620	1,820	1,950	2,220	2,200	2,540	3,570	6,400	3,410	1,800	1,790	1,720
14	1,660	1,890	1,940	2,160	2,310	2,490	3,810	5,820	2,680	1,790	1,760	1,720
15	1,640	2,000	2,040	2,230	2,240	2,390	4,940	4,300	2,460	1,820	1,760	1,720
16	1,630	1,980	1,920	2,290	2,270	2,380	4,660	3,680	2,420	1,820	1,780	1,710
17	1,620	1,860	2,000	2,290	2,290	2,400	5,080	3,810	2,360	1,840	1,940	1,700
18	1,610	1,700	2,080	2,320	2,260	2,420	5,540	2,940	2,760	1,820	1,830	1,710
19	1,610	1,820	2,160	2,280	2,290	2,430	6,090	2,700	2,450	1,950	1,720	1,710
20	1,610	1,740	2,150	2,280	2,280	2,460	7,870	2,640	2,460	1,890	1,760	1,710
21	1,810	1,640	2,350	2,200	2,270	2,480	8,950	3,210	2,460	1,860	*1,780	1,680
22	1,700	1,740	2,240	2,230	2,260	2,550	7,720	3,730	2,400	1,890	1,750	1,710
23	1,710	1,940	2,200	2,230	2,240	2,520	7,900	3,150	2,380	1,830	1,740	1,720
24	*1,760	1,950	2,140	2,200	2,280	2,390	*8,200	2,850	2,420	1,830	1,750	1,720
25	2,050	1,820	2,150	2,260	2,330	2,310	7,160	2,900	2,520	1,830	1,730	1,730
26	1,890	1,740	2,190	2,300	2,350	2,350	6,040	3,950	2,640	1,800	1,730	1,740
27	1,710	1,580	2,150	2,280	2,380	2,490	5,980	4,680	2,800	1,740	1,730	1,730
28	1,640	2,010	2,120	2,320	2,360	2,450	5,540	4,500	2,360	1,840	1,750	1,710
29	1,830	2,020	2,160	2,360	2,420	2,360	5,400	3,600	2,190	1,810	1,750	1,730
30	1,660	2,020	2,230	2,340	-	2,310	5,730	3,330	2,070	1,760	1,780	1,780
31	*1,710	-	2,260	2,310	-	2,240	-	2,820	-	1,760	1,780	-
Total	54,780	60,260	65,500	69,440	66,300	75,180	142,480	107,480	126,930	57,360	55,500	51,440
Mean	1,767	2,009	2,113	2,240	2,288	2,425	4,749	3,467	4,231	1,850	1,790	1,715
(+)	-1,178	+1,867	-75	-1,068	-1,530	-1,538	+4,708	+3,325	-437	-1,934	-1,842	-1,727

Adjusted for change in reservoir contents

Mean	589	3,876	2,057	1,172	756	887	9,457	6,792	3,794	-84	-52	-12
Cfsm	0.432	2.84	1.51	0.860	0.555	0.651	6.94	4.96	2.78	-0.062	-0.038	-0.009
In.	0.50	5.17	1.74	0.99	0.60	0.75	7.74	5.74	3.10	-0.07	-0.04	-0.01

Observed

Adjusted

Calendar year 1951: Max	9,780	Min	1,580	Mean	2,690	Mean	2,550	Cfsm	1.87	In.	25.38
Water year 1951-52: Max	10,100	Min	1,580	Mean	2,548	Mean	2,423	Cfsm	1.78	In.	24.21

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Rangeley-Umbagog series of lakes and Kennebec and Azischoos Lakes.

Note.--No gage-height record Jan. 22-30; discharge estimated on basis of powerplant records. Stage-discharge relation affected by paper mill waste Oct. 1 to Nov. 4.

## ANDROSCOGGIN RIVER BASIN

## Androscoggin River at Rumford, Maine

Location.--Lat 44°32'45", long. 70°32'35", on left bank at upper plant of Rumford Falls Power Co., at Rumford, Oxford County, 0.8 mile upstream from Swift River.

Drainage area.--2,067 sq mi.

Records available.--May 1892 to September 1903 and October 1904 to September 1952 in reports of Geological Survey. October 1903 to September 1904 (monthly discharges only) in first annual report of Maine State Water Storage Commission.

Gage.--Gages in pond above dam and in tailrace of upper plant. Prior to Aug. 1, 1937, gages in pond and tailrace of middle plant.

Average discharge.--56 years (1896-1952), 3,599 cfs.

Extremes.--Maximum daily discharge during year, 26,000 cfs June 2; minimum daily, 1,650 cfs Sept. 22.

1892-1952: Maximum discharge, 74,000 cfs Mar. 20, 1936.

Remarks.--Discharge computed from flow over upper dam and through wheels. Flow regulated by Rangeley-Umbagog series of lakes and Kennebagog and Aziscochos Lakes (see p. 108).

Cooperation.--Records furnished by Rumford Falls Power Co.

Revisions.--W 1001: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,000	2,590	2,910	3,480	2,920	2,860	3,560	9,860	9,420	2,430	1,980	1,910
2	2,060	2,870	3,050	3,480	3,070	2,830	4,310	7,610	26,000	2,450	1,910	2,680
3	2,070	14,500	2,860	3,450	3,100	2,790	5,390	5,680	18,600	2,150	1,820	2,420
4	2,040	15,900	2,610	3,220	3,110	2,790	4,770	5,380	14,900	2,290	1,860	2,170
5	2,120	8,040	2,870	2,940	3,650	2,840	5,200	5,000	14,500	2,180	1,960	2,040
6	2,070	5,360	12,900	2,980	3,800	2,870	11,200	4,800	13,200	2,220	2,010	1,710
7	2,020	6,960	11,200	2,870	3,390	2,950	9,570	5,430	10,700	2,370	2,040	1,750
8	3,720	12,500	8,130	2,740	3,240	2,880	8,130	5,470	9,670	2,030	1,950	1,670
9	3,630	7,930	7,160	2,800	3,160	2,760	7,910	5,920	8,440	2,140	1,910	1,760
10	2,550	5,190	6,610	2,840	3,080	2,940	8,270	6,360	7,000	2,070	1,900	1,790
11	2,340	4,220	5,620	3,030	3,080	2,910	10,400	6,190	5,790	2,170	1,990	1,860
12	2,140	3,790	4,790	2,840	3,090	3,730	9,540	17,100	5,060	2,320	1,940	1,860
13	2,010	3,400	2,350	2,730	2,890	3,630	8,710	17,600	4,820	2,110	2,000	1,740
14	2,050	3,420	1,610	2,790	2,770	3,520	9,330	11,500	4,150	2,030	1,990	1,720
15	2,020	4,060	2,250	2,830	2,890	3,200	11,800	8,670	3,590	2,060	1,940	1,770
16	2,010	3,830	2,060	3,270	2,870	2,980	11,700	8,960	3,350	2,060	1,860	1,800
17	1,920	3,770	2,170	3,350	2,880	3,000	12,000	7,930	2,610	1,940	2,190	1,760
18	1,870	3,360	2,700	3,380	2,730	3,110	13,200	6,270	3,310	1,970	2,460	1,740
19	1,860	3,120	2,480	3,440	2,730	3,000	15,100	5,390	3,620	2,180	2,030	1,810
20	1,910	2,510	2,920	3,220	2,730	3,010	20,800	5,000	3,160	2,130	1,760	1,760
21	2,060	2,280	2,920	3,190	2,720	3,420	21,200	8,440	3,160	2,040	1,810	1,900
22	1,800	2,380	3,860	2,780	2,730	3,540	16,800	8,680	3,050	2,040	1,940	1,650
23	1,790	2,850	3,660	2,870	2,720	3,820	19,000	7,150	3,060	1,990	1,810	1,680
24	2,000	3,220	3,350	3,200	2,730	3,450	17,600	5,700	2,790	2,030	1,790	1,710
25	4,550	3,050	3,260	2,890	2,800	3,270	14,100	5,440	2,960	1,940	1,880	1,710
26	3,850	2,300	3,210	2,970	2,890	3,250	12,800	7,980	3,140	1,880	1,960	1,700
27	2,830	2,160	3,000	3,120	2,820	3,490	13,100	8,550	3,650	1,990	1,710	1,800
28	2,480	1,790	2,970	3,200	2,840	3,820	13,000	7,200	3,240	2,080	1,780	1,760
29	2,560	2,630	2,760	2,960	2,910	3,850	13,200	6,140	2,770	2,110	1,910	1,780
30	2,530	2,910	2,890	2,700	-	3,620	12,300	5,510	2,690	1,930	1,910	1,670
31	2,340	-	3,310	2,600	-	3,550	-	4,740	-	1,840	1,710	-
Total	73,210	142,700	124,680	94,370	86,140	99,580	344,590	231,870	202,400	65,190	59,730	55,300
Mean	2,362	4,757	4,022	3,044	2,970	3,212	11,490	7,480	6,747	2,103	1,927	1,843
(†)	-1,178	+1,867	-75	-1,068	-1,530	-1,538	+4,708	+3,325	-437	-1,934	-1,842	-1,727

Adjusted for change in reservoir contents

Mean	1,184	6,824	3,947	1,976	1,440	1,674	16,198	10,805	6,310	169	85	116
Cfsm	0.573	3.20	1.91	0.956	0.697	0.810	7.84	5.23	3.05	0.082	0.041	0.056
In.	0.66	3.57	2.20	1.10	0.75	0.93	8.75	6.03	3.40	0.09	0.05	0.06

	Observed						Adjusted					
Calendar year 1951:	Max	23,400	Min	1,790	Mean	4,393	Max	4,253	Cfsm	2.06	In.	27.92
Water year 1951-52:	Max	26,000	Min	1,650	Mean	4,516	Max	4,191	Cfsm	2.03	In.	27.59

† Change in contents, equivalent in cubic feet per second, in Rangeley-Umbagog series of lakes and Kennebagog and Aziscochos Lakes.

## Swift River near Roxbury, Maine

Location.--Lat 44°38'30", long. 70°35'15", on left bank 2½ miles downstream from Roxbury, Oxford County, and 6 miles upstream from mouth.

Drainage area.--95.8 sq mi.

Records available.--June 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 615.67 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 191 cfs.

Extremes.--Maximum discharge during year, 8,060 cfs June 2 (gage height, 9.21 ft); minimum, 5.4 cfs Aug. 4, 1929-52; Maximum discharge, 14,500 cfs (revised) June 15, 1942 (gage height, 12.42 ft), from rating curve extended above 7,000 cfs; maximum gage height, 12.58 ft Sept. 17, 1932; minimum discharge, 3.8 cfs Sept. 16, 17, 1948 (gage height, 0.93 ft).

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

Revisions (water years).--W 801: 1934(m). W 1031: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.98	6.1	2.5	268
1.0	6.8	3.0	470
1.1	11	3.5	730
1.2	17	4.0	1,060
1.4	33	5.0	1,890
1.6	55	6.0	2,980
1.8	86	6.4	3,490
2.0	126		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	180	135	86	59	48	116	543	1,020	37	7.1	6.8
2	34	128	138	74	61	47	188	451	3,010	33	6.4	102
3	36	3,430	128	69	66	44	164	372	748	50	6.1	68
4	36	1,250	116	66	86	43	172	353	548	27	6.1	50
5	36	523	133	62	138	43	260	337	803	26	6.8	31
6	36	322	635	56	100	45	625	410	548	24	15	21
7	37	795	518	53	*69	43	495	442	423	22	12	16
8	156	*1,540	357	49	62	49	455	480	353	19	8.4	12
9	159	663	268	*44	59	47	437	589	261	17	6.8	11
10	90	380	202	43	58	48	669	446	199	17	6.4	9.8
11	66	293	172	42	56	54	691	1,460	174	25	9.8	9.8
12	55	237	159	42	55	*134	528	1,760	166	33	11	9.3
13	45	208	116	41	55	92	523	719	142	24	*14	8.4
14	43	205	106	43	54	69	790	464	118	19	11	7.1
15	42	372	99	86	54	72	754	710	105	17	8.8	6.8
16	40	293	92	200	53	68	760	674	96	14	8.8	6.8
17	39	337	86	116	51	56	822	442	109	13	325	7.1
18	36	244	86	97	51	55	1,050	349	228	11	122	7.1
19	35	191	86	78	51	51	1,220	304	133	15	49	7.5
20	34	156	106	66	51	53	2,400	510	159	10	29	17
21	33	142	210	58	50	66	1,370	820	107	11	22	18
22	33	149	305	69	50	110	1,070	470	103	11	*18	12
23	33	162	174	86	50	97	1,790	360	69	10	16	11
24	34	180	102	79	50	83	*1,160	300	58	7.1	15	10
25	585	144	72	69	50	76	927	320	58	13	13	12
26	268	159	59	68	50	78	1,080	713	71	6.4	11	19
27	152	144	51	66	50	88	1,290	402	81	6.8	9.3	27
28	120	135	49	63	49	92	1,120	290	56	22	7.1	24
29	118	140	48	62	48	90	1,280	261	45	19	6.8	17
30	101	138	69	58	-	88	803	237	42	12	7.1	12
31	118	-	88	58	-	88	-	191	-	9.3	6.8	-
Total	2,689	13,240	4,965	2,149	1,737	2,115	25,009	16,199	10,033	560.6	801.6	576.5
Mean	86.7	441	160	69.3	59.9	68.2	834	523	334	18.1	25.9	19.2
Cfs/m	0.905	4.60	1.67	0.723	0.625	0.712	8.71	5.46	3.49	0.189	0.270	0.200
In.	1.04	5.13	1.92	0.83	0.67	0.82	9.72	6.30	3.89	0.22	0.31	0.22

Calendar year 1951: Max 3,430 Min 17 Mean 235 Cfs/m 2.45 In. 33.31  
Water year 1951-52: Max 3,430 Min 6.1 Mean 219 Cfs/m 2.29 In. 31.07

Peak discharge (base, 2,400 cfs).--Nov. 3 (2 p.m.) 7,410 cfs (8.88 ft); Apr. 20 (3:30 p.m.) 3,360 cfs (6.30 ft); May 11 (10 p.m.) 5,090 cfs (7.51 ft); June 2 (12:30 a.m.) 8,060 cfs (9.21 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 14 to Apr. 8.

## Nezinscot River at Turner Center, Maine

Location.--Lat 44°16'10", long. 70°13'50", on left bank 500 ft upstream from upper highway bridge at Turner Center, Androscoggin County, and 3 miles upstream from mouth.

Drainage area.--171 sq mi.

Records available.--August 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 270 ft (from topographic map).

Average discharge.--11 years, 288 cfs.

Extremes.--Maximum discharge during year, 3,560 cfs Apr. 7 (gage height, 5.87 ft); minimum, 17 cfs Sept. 1 (gage height, 0.99 ft).

1941-52: Maximum discharge, 6,920 cfs Apr. 4, 1951 (gage height, 7.70 ft); minimum, 16 cfs Oct. 1, 2, 1941, Sept. 13, 14, 1949; minimum gage height, 0.97 ft Sept. 13, 14, 1949.

Maximum discharge known, 9,340 cfs Mar. 21, 1936, at Turner (drainage area, 158 sq mi).

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	18	2.5	355
1.2	34	3.0	600
1.4	63	4.0	1,350
1.6	98	5.0	2,390
1.8	140	5.8	3,450
2.0	190		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	281	240	300	250	210	490	408	351	100	*39	18
2	75	281	233	290	240	205	948	355	1,190	108	37	25
3	73	970	235	280	225	210	1,390	325	1,540	93	37	27
4	72	2,570	233	270	220	210	1,400	306	906	73	35	29
5	72	1,970	255	250	265	215	1,450	295	678	65	34	29
6	72	1,070	810	250	320	220	2,720	281	560	58	33	28
7	72	970	1,380	250	325	225	*3,450	292	538	55	33	28
8	154	2,150	990	245	305	240	2,840	285	490	50	32	27
9	227	2,010	752	*240	280	245	2,430	285	397	50	31	25
10	193	1,200	642	230	260	240	2,210	271	340	55	30	25
11	157	824	501	220	250	250	2,400	255	299	52	30	24
12	136	642	420	210	250	515	2,220	990	251	52	30	24
13	120	516	380	205	250	*620	1,840	2,270	248	53	32	24
14	106	442	330	196	255	605	1,800	1,480	190	49	31	23
15	100	415	265	205	250	545	2,030	885	172	46	30	22
16	94	402	235	300	240	500	2,040	837	154	43	30	22
17	91	433	205	355	235	475	1,920	941	145	42	31	21
18	89	420	190	345	235	440	1,710	766	150	42	30	20
19	85	363	182	345	225	410	1,590	600	145	46	30	24
20	84	313	178	340	225	395	1,580	490	131	46	29	28
21	78	281	190	320	240	385	1,560	636	120	46	29	26
22	77	245	235	310	240	375	1,270	906	112	46	28	*24
23	75	248	395	305	235	395	1,030	733	106	46	26	24
24	75	285	300	345	230	395	892	566	100	44	24	24
25	395	313	250	340	220	360	740	501	98	44	24	24
26	642	281	220	320	220	370	630	600	104	43	*23	a24
27	442	260	194	315	220	395	543	714	118	42	22	a24
28	317	240	190	305	210	440	501	554	112	42	22	a24
29	347	254	190	285	205	460	511	439	96	42	21	a24
30	351	186	275	275	-	460	480	376	94	40	20	a24
31	310	-	235	255	-	450	-	325	-	39	19	-
Total	5,263	20,849	11,251	8,701	7,125	11,460	46,615	18,974	9,955	1,650	902	735
Mean	170	695	363	281	246	370	1,554	612	331	53.2	29.1	24.5
Cfs/m	0.994	4.06	2.12	1.64	1.44	2.16	9.09	3.58	1.94	0.311	0.170	0.143
In.	1.15	4.53	2.44	1.89	1.55	2.49	10.14	4.13	2.16	0.36	0.20	0.16

Calendar year 1951: Max 6,220 Min 72 Mean 413 Cfs/m 2.42 In. 32.77

Water year 1951-52: Max 3,450 Min 18 Mean 392 Cfs/m 2.29 In. 31.20

Peak discharge (base, 1,700 cfs).--Nov. 4 (4 p.m.) 2,740 cfs (5.27 ft); Nov. 8 (5 to 12 p.m.) 2,390 cfs (5.00 ft); Apr. 7 (6 a.m.) 3,560 cfs (5.87 ft); May 13 (7 to 11 a.m.) 2,390 cfs (5.00 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

Note.--Stage-discharge relation affected by ice Nov. 27, 28, 30, Dec. 1, 3, and Dec. 13 to Apr. 1.

## Little Androscoggin River near South Paris, Maine

Location.--Lat 44°17'05", long. 70°32'10", on right bank just upstream from Biscoe Falls and 4½ miles upstream from South Paris, Oxford County.

Drainage area.--76.2 sq mi.

Records available.--September 1913 to April 1924, October 1931 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 394.5 ft above mean sea level, datum of 1929. Prior to Apr. 30, 1924, chain gage at same site and datum.

Average discharge.--31 years (1913-23, 1931-52), 136 cfs.

Extremes.--Maximum discharge during year, 2,120 cfs June 2; maximum gage height, 8.11 ft Nov. 4; minimum discharge, 2.0 cfs Aug. 31, Sept. 1 (gage height, 1.40 ft).  
1913-24, 1931-52: Maximum discharge, 6,980 cfs Mar. 19, 1936 (gage height, 11.72 ft), from rating curve extended above 2,800 cfs, verified by computation of flow over dam at South Paris; minimum, 1 cfs Aug. 16, 1914 (gage height, 0.7 ft).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation at low and medium flow by sawmills and gristmills above station.

Revisions.--W 726: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

2.1	23	4.0	247	1.4	2.0	3.0	95
2.3	34	5.0	489	1.5	3.8	3.5	134
2.6	57	6.0	840	1.7	8.0	4.0	254
3.0	95	7.5	1,590	1.8	11	5.0	510
3.5	160			2.0	18	6.0	895
				2.2	28	7.5	1,710
				2.5	49		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	113	94	168	99	72	230	183	250	26	6.5	2.0
2	30	107	99	151	98	70	433	166	1,690	24	5.8	13
3	28	830	99	139	96	70	522	149	800	22	4.8	19
4	28	1,490	95	126	103	69	447	137	396	22	4.4	18
5	29	655	111	112	186	72	519	134	337	20	4.8	12
6	28	375	465	114	184	78	1,400	123	264	18	5.4	9.4
7	26	650	507	100	154	93	*1,280	136	268	16	4.8	6.7
8	98	1,300	318	98	131	90	1,050	128	223	13	4.0	5.6
9	118	710	241	95	126	116	980	112	174	12	4.6	5.2
10	80	411	217	92	116	106	920	102	142	12	4.8	5.0
11	65	296	166	87	107	117	1,120	95	117	12	5.4	4.6
12	55	251	a150	83	106	292	913	650	106	17	6.0	4.4
13	47	212	a154	83	91	309	742	940	94	16	6.2	4.4
14	41	196	a118	83	91	270	802	426	82	14	6.0	3.6
15	38	217	a102	88	86	224	904	282	74	12	5.2	3.6
16	35	198	a84	165	84	207	918	420	62	10	5.0	3.4
17	35	215	a88	146	84	181	895	420	55	9.7	7.3	3.2
18	34	196	a92	162	86	156	850	295	63	8.8	7.8	3.2
19	32	165	95	176	94	137	864	228	55	9.7	7.1	4.2
20	30	157	98	146	92	128	1,040	185	47	10	5.8	6.9
21	29	119	113	134	88	139	955	395	42	10	5.2	7.1
22	29	106	181	113	85	178	632	434	38	8.3	4.2	6.0
23	30	112	165	150	84	207	549	287	35	7.8	3.8	5.2
24	31	137	144	179	83	186	482	217	32	7.8	3.6	*5.2
25	345	b130	127	a140	81	176	367	177	32	7.6	3.6	5.2
26	288	b91	122	a120	81	190	320	300	33	7.3	3.4	5.4
27	166	b76	114	a114	79	230	287	325	40	7.3	3.1	5.4
28	123	b88	104	a108	78	268	260	223	33	7.3	2.9	5.5
29	148	b99	99	a106	75	241	262	172	29	7.3	2.7	5.4
30	145	96	99	a104	-	226	234	154	26	7.3	2.3	4.6
31	118	-	157	97	-	238	-	127	-	6.9	2.0	-
Total	2,360	9,758	4,798	3,779	2,948	5,136	21,157	8,122	5,639	388.9	148.5	192.5
Mean	76.1	325	155	122	102	166	705	262	188	12.5	4.79	6.42
Cfsm	0.999	4.27	2.03	1.80	1.34	2.18	9.25	3.44	2.47	0.164	0.063	0.084
In.	1.15	4.78	2.34	1.84	1.44	2.51	10.32	3.97	2.76	0.19	0.07	0.09

Calendar year 1951: Max 2,290 Min 13 Mean 170 Cfsm 2.23 In. 30.32  
Water year 1951-52: Max 1,690 Min 2.0 Mean 176 Cfsm 2.31 In. 31.44

Peak discharge (base, 1,000 cfs).--Nov. 4 (1 a.m.) 1,980 cfs (8.11 ft); Nov. 8 (10 a.m.) 1,400 cfs (7.19 ft); Apr. 6 (5 a.m.) 1,600 cfs (7.31 ft); May 12 (10 p.m.) 1,410 cfs (7.00 ft); June 2 (9 a.m.) 2,120 cfs (8.09 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

b Stage-discharge relation affected by ice.

## Little Androscoggin River near Auburn, Maine

Location.--Lat 44°03'50", long. 70°16'25", on right bank just upstream from highway bridge at Littlefields, 3 miles southwest of Auburn, Androscoggin County, and 3.6 miles upstream from mouth.

Drainage area.--328 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 215 ft (from topographic map).

Average discharge.--12 years, 529 cfs.

Extremes.--Maximum discharge during year, 4,980 cfs Apr. 8 (gage height, 8.09 ft); minimum, 19 cfs Sept. 1 (gage height, 1.12 ft).  
1940-52: Maximum discharge, 5,800 cfs June 18, 1942 (gage height, 9.18 ft); minimum, 14 cfs Oct. 14, 22, 1949; minimum gage height, 1.07 ft Sept. 8, 1941.  
Maximum discharge known, 16,800 cfs Mar. 20, 1936, at mouth of river.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by Pennesseewassee and Thompson Lakes (see p.108) and several powerplants above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 7

Apr. 8 to Sept. 30

1.7	106	4.0	1,080	1.2	26	3.5	820
2.0	177	5.0	1,820	1.4	54	4.0	1,120
2.5	337	6.0	2,700	1.7	112	5.0	1,830
3.0	544	7.0	3,630	2.0	190	6.0	2,670
3.5	780	8.0	4,650	2.5	356	7.0	3,700
				3.0	565	8.1	4,990

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	248	553	487	705	580	525	1,140	1,020	844	261	213	30
2	214	500	440	805	555	520	1,540	940	1,580	241	170	34
3	177	1,340	487	755	550	520	2,110	868	2,180	225	58	148
4	174	2,260	478	705	590	520	2,320	770	2,230	213	71	250
5	172	2,900	522	670	705	515	2,460	710	1,770	168	219	144
6	126	2,450	1,130	615	835	510	*3,930	685	1,460	93	232	62
7	151	2,100	1,550	570	820	520	4,350	670	1,290	240	188	122
8	310	2,790	1,630	545	780	525	4,910	670	1,180	196	219	117
9	348	2,980	1,330	515	730	545	4,500	670	1,080	184	138	114
10	383	2,580	1,080	500	680	565	4,150	606	916	176	36	148
11	348	1,880	901	480	660	635	4,060	578	787	173	140	159
12	312	1,430	791	455	635	905	3,340	1,660	695	176	245	157
13	241	1,150	673	440	610	1,080	3,800	2,290	675	170	184	182
14	235	962	575	435	590	1,200	3,360	2,350	540	225	204	220
15	251	907	515	455	565	1,110	3,460	1,810	386	241	204	56
16	208	861	453	505	550	1,040	*3,380	1,590	555	222	130	260
17	194	883	415	570	540	980	3,290	1,570	552	213	51	128
18	188	844	405	635	520	905	3,070	1,390	520	210	166	130
19	183	791	405	680	540	855	2,780	1,230	476	193	184	207
20	154	730	544	705	545	*833	2,600	1,080	442	91	199	210
21	167	663	635	660	550	828	2,480	1,240	320	142	165	187
22	208	562	755	570	545	840	2,400	1,430	129	202	196	190
23	194	571	755	660	550	890	2,090	1,430	105	204	213	213
24	177	571	705	780	550	890	1,770	1,220	168	202	110	268
25	660	576	635	730	545	880	1,560	1,070	225	193	27	196
26	785	562	590	635	545	885	1,390	1,080	254	179	140	144
27	785	550	545	620	545	950	1,230	1,180	284	102	220	108
28	654	540	515	605	545	1,080	1,170	1,200	274	142	182	168
29	868	518	500	595	540	1,120	1,150	1,070	305	210	149	165
30	607	500	500	595	-	1,080	1,090	922	294	*220	118	159
31	576	-	565	575	-	1,070	-	838	-	210	73	-
Total	10,078	36,504	21,511	18,770	17,475	25,321	81,280	35,837	22,476	5,917	4,844	4,676
Mean	325	1,217	694	605	603	817	2,709	1,156	749	191	156	156
(+)	-35	+149	+25	-74	-166	-5	+198	+71	-76	-88	-122	-65

Adjusted for change in reservoir contents

Mean	290	1,366	719	531	437	812	2,907	1,227	673	103	34	91
Cfsm	0.884	4.16	2.19	1.62	1.33	2.48	8.86	3.74	2.05	0.314	0.104	0.277
In.	1.02	4.64	2.52	1.87	1.43	2.86	9.88	4.31	2.29	0.36	0.12	0.31

	Observed						Adjusted					
Calendar year 1951:	Max	5,250	Min	57	Mean	734	Mean	740	Cfsm	2.26	In.	30.63
Water year 1951-52:	Max	4,910	Min	27	Mean	778	Mean	762	Cfsm	2.32	In.	31.61

\* Discharge measurement made on this day.

+ Change in contents, equivalent in cubic feet per second, in Pennesseewassee and Thompson Lakes.  
Note.--Stage-discharge relation affected by ice Nov. 27, 28, Dec. 14, 15, 17-19, Dec. 23 to Mar. 19 Mar. 22-31.

## Androscoggin River near Auburn, Maine

Location.--Lat 44°04'15", long. 70°12'35", on left bank  $1\frac{1}{2}$  miles downstream from Little Androscoggin River and 2 miles downstream from north bridge between Auburn and Lewiston, Androscoggin County.

Drainage area.--3,257 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 109.18 ft above mean sea level, datum of 1929.

Average discharge.--24 years, 5,832 cfs (unadjusted).

Extremes.--Maximum discharge during year, 37,500 cfs June 2 (gage height, 11.80 ft); minimum daily, 480 cfs Aug. 31.

1928-52: Maximum discharge, 135,000 cfs Mar. 20, 1936 (gage height, 27.57 ft), from rating curve extended above 76,000 cfs on basis of slope-area determination of peak flow and computation of flow over dams; minimum, 309 cfs Sept. 28, 1941 (gage height, 0.34 ft); minimum daily, 340 cfs Sept. 28, 1941.

Remarks.--Records excellent. Considerable fluctuation caused by powerplants above station. Flow regulated by powerplants above station and by Rangeley-Umbagog series of lakes, Kennebecago, Azisicohos, Pennessewassee, Thompson and Auburn Lakes, and Gulf Island Pond (see p. 108).

Revisions (water years).--W 781: 1930, 1933-34. W 1301: 1929-36, 1940-50 (adjusted monthly runoff in inches).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	444	3.0	3,240
.8	560	4.0	5,350
1.0	695	6.0	11,100
1.5	1,100	8.0	18,900
2.0	1,650	11.1	34,200
2.5	2,360		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,510	4,610	4,500	5,800	5,110	4,240	8,080	16,500	7,860	3,800	2,830	620
2	3,590	4,930	3,010	6,800	5,440	3,770	9,870	13,800	20,600	3,260	1,260	3,630
3	3,310	8,580	5,700	6,420	4,620	5,640	12,600	11,400	34,000	3,300	530	3,310
4	3,380	32,700	5,550	6,760	6,230	5,310	13,600	9,270	24,500	2,710	2,960	3,940
5	3,200	25,200	5,640	5,680	6,780	5,180	13,500	9,100	20,300	2,360	2,610	3,600
6	1,790	14,800	8,730	4,810	6,640	5,130	20,400	8,240	19,200	2,500	2,690	1,230
7	610	12,800	17,700	5,680	6,860	5,270	28,300	8,140	16,800	3,880	2,660	520
8	3,800	22,000	14,700	5,730	6,590	4,130	24,500	9,880	14,400	3,710	2,730	3,160
9	4,620	23,700	10,300	5,530	5,170	3,620	21,900	8,930	13,200	3,250	1,510	2,780
10	5,420	15,700	8,950	5,470	5,680	5,920	21,000	8,780	12,100	3,310	500	2,640
11	4,200	11,200	7,980	6,060	6,590	6,140	23,000	9,130	9,790	3,140	2,930	2,600
12	4,250	9,060	7,000	4,940	7,080	6,770	23,000	13,300	8,480	1,650	2,870	2,620
13	2,780	8,140	5,910	3,240	6,690	6,490	20,800	32,300	7,840	1,250	2,920	1,140
14	1,780	7,710	5,080	5,660	5,360	7,480	19,800	25,700	6,300	3,800	2,920	560
15	3,550	5,970	3,390	5,130	5,360	7,210	22,100	17,600	6,370	3,310	2,680	2,920
16	3,430	7,520	1,790	5,820	4,010	6,610	*23,800	15,000	6,090	3,200	1,360	2,670
17	3,430	7,480	4,550	6,260	3,330	6,830	23,000	15,700	5,700	3,100	490	2,720
18	3,230	7,310	4,200	6,600	5,500	7,000	22,800	13,700	5,070	2,930	3,370	2,570
19	3,260	6,850	4,620	5,340	5,530	6,830	24,100	11,300	5,000	1,110	3,200	2,600
20	1,620	6,480	4,530	6,110	5,390	6,610	26,200	9,800	5,620	660	3,290	1,220
21	610	5,800	5,450	6,990	5,530	6,680	32,600	10,300	5,200	3,680	3,140	560
22	3,360	3,920	5,440	6,150	5,430	5,290	29,900	15,400	2,270	3,290	2,960	*3,150
23	3,400	5,080	5,100	6,850	4,490	5,750	25,000	14,100	4,640	3,220	1,410	2,760
24	3,450	5,400	6,420	6,600	2,900	7,510	27,400	11,400	4,580	3,070	550	2,760
25	4,030	5,030	5,820	6,610	5,550	7,180	23,900	9,900	4,470	2,980	3,140	2,760
26	6,860	5,830	6,410	5,790	5,260	7,290	20,000	9,740	4,610	1,200	2,850	2,620
27	6,920	5,420	6,330	5,540	4,930	7,600	18,800	13,300	5,140	605	2,970	1,190
28	5,370	4,450	6,330	6,400	5,520	8,150	18,700	12,800	4,090	3,290	2,920	555
29	5,100	4,530	5,340	6,450	5,330	7,710	18,300	10,600	2,670	2,870	2,750	3,090
30	4,820	4,460	3,000	6,460	-	8,280	18,700	9,610	3,920	*2,840	930	2,660
31	4,950	-	5,950	5,430	-	8,330	-	8,780	-	2,940	480	-
Total	113,630	292,660	194,920	183,510	158,000	195,930	635,650	392,210	290,810	85,805	70,420	69,355
Mean	3,665	9,755	6,288	5,920	5,448	6,320	21,190	12,650	9,694	2,768	2,272	2,312
(+)	-1,200	+1,952	-7	-1,168	-1,725	-1,475	+4,951	+3,579	-576	-2,133	-1,917	-1,831

Adjusted for change in reservoir contents

	Mean	2,465	11,707	6,281	4,752	3,723	4,845	26,141	16,029	9,118	635	355	481
Cfs/m	0.756	3.59	1.93	1.46	1.14	1.49	8.03	4.92	2.80	0.195	0.109	0.148	0.148
In.	0.87	4.00	2.22	1.68	1.23	1.72	8.96	5.67	3.12	0.22	0.13	0.17	0.17

	Observed						Adjusted					
Calendar year 1951:	Max	50,100	Min	610	Mean	7,256	Mean	7,123	Cfs/m	2.19	In.	29.66
Water year 1951-52:	Max	34,000	Min	480	Mean	7,330	Mean	7,179	Cfs/m	2.20	In.	29.99

\* Discharge measurement made on this day.

† Adjusted for change in contents of Rangeley chain of lakes, Azisicohos Reservoir, Gulf Island Pond, Auburn, Pennessewassee and Thompson Lakes.

## ANDROSCOGGIN RIVER BASIN

## Reservoirs in Androscoggin River basin

Kennebago Lake on Kennebago River, at Kennebago, used for power, has usable capacity of 721,000,000 cu ft between elevations 1,773.0 (corrected) and 1,780.5 ft above mean sea level, unadjusted. Gage-height record furnished by Union Water Power Co.

Rangeley Lake on Rangeley Stream, at Oquossoc, used for power and log driving, has usable capacity of 1,339,200,000 cu ft in top 4 ft of lake (top of flashboards). Gage-height record furnished by Union Water Power Co.

Mooselookmeguntic Lake at Upper Dam, in Richardson Township, used for power and log driving, has usable capacity of 8,370,000,000 cu ft between gage heights 8.3 and 20.5 ft. Gage-height record furnished by Union Water Power Co.

Upper and Lower Richardson Lakes on Rapid River, at Middle Dam, used for power and log driving, has usable capacity of 5,691,500,000 cu ft between gage heights 3.0 and 20.5 ft. Gage-height record furnished by Union Water Power Co.

Umbagog Lake on Androscoggin River, at Errol Dam, three-quarters of a mile northeast of Errol, N. H., used for power and log driving, has usable capacity of 3,080,160,000 cu ft between gage heights 5.5 and 15.0 ft. Gage-height record furnished by Union Water Power Co.

Azisochos Lake on Magalloway River, in Lincoln Township, 3 miles east of village of Wilsons Mills, completed in 1911 for power, has usable capacity of 9,593,000,000 cu ft between gage heights 490.0 and 535.0 ft. Gage-height record furnished by Union Water Power Co.

Gulf Island Pond on Androscoggin River, 3 miles upstream from Lewiston, completed in 1928 for power, has capacity of 1,100,000,000 cu ft in top 10 ft of pond. Gage-height record furnished by Central Maine Power Co.

Lake Auburn on outlet stream to Androscoggin River, at East Auburn, used for storing water supply of Auburn and Lewiston, has usable capacity of 580,000 cu ft between gage heights 54.7 and 60.7 ft. Gage-height record furnished by Auburn Water District.

Pennesseewassee Lake on short outlet stream to Little Androscoggin River, at Norway used for power, has usable capacity of 192,000,000 cu ft between gage heights 95.0 and 100.0 ft. Gage-height record furnished by Central Maine Power Co.

Thompson Lake on short outlet stream to Little Androscoggin River, at Oxford, used for power, has usable capacity of 950,000,000 cu ft between gage heights 95.0 and 100.0 ft. Gage-height record furnished by Robinson Manufacturing Co.

Monthly gage height and contents, water year October 1951 to September 1952

Date	Kennebago Lake†			Rangeley Lake†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	79.4	599	-	3.42	1,145	-
Oct. 31.....	78.2	470	-129	2.0	670	-475
Nov. 30.....	80.8	756	+286	1.42	476	-194
Dec. 31.....	80.7	744	-12	.17	57	-419
Calendar year 1951.....	-	-	-242	-	-	-670
Jan. 31.....	79.7	632	-112	.71	237	+180
Feb. 29.....	78.7	523	-109	.50	167	-70
Mar. 31.....	78.3	480	-43	.33	110	-57
Apr. 30.....	80.4	710	+230	3.67	1,229	+1,119
May 31.....	80.9	767	+57	4.00	1,339	+110
June 30.....	81.2	802	+35	4.00	1,339	0
July 31.....	78.3	480	-322	3.00	1,004	-335
Aug. 31.....	76.9	335	-145	2.33	780	-224
Sept. 30.....	76.9	335	0	1.67	559	-221
Water year 1951-52.....	-	-	-264	-	-	-586

Date	Mooselookmeguntic Lake†			Upper and Lower Richardson Lakes†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	13.1	3,178	-	14.30	3,381	-
Oct. 31.....	12.15	2,532	-646	12.20	2,613	-758
Nov. 30.....	15.6	4,884	+2,352	13.75	3,179	+566
Dec. 31.....	15.85	5,056	+172	16.10	4,047	+868
Calendar year 1951.....	-	-	-1,311	-	-	-351
Jan. 31.....	13.85	3,688	-1,368	14.00	3,270	-777
Feb. 29.....	11.8	2,297	-1,391	11.35	2,302	-968
Mar. 31.....	8.8	310	-1,987	9.40	1,630	-672
Apr. 30.....	15.05	4,504	+4,194	13.65	3,142	+1,512
May 31.....	19.95	7,974	+3,470	19.95	5,461	+2,339
June 30.....	19.45	7,616	-358	19.35	5,256	-225
July 31.....	17.05	5,906	-1,710	17.05	4,398	-858
Aug. 31.....	14.3	3,994	-1,912	14.10	3,307	-1,091
Sept. 30.....	12.25	2,600	-1,394	11.40	2,321	-986
Water year 1951-52.....	-	-	-578	-	-	-1,080

† Gage height and contents at 7 a.m. on first day of following month.



## Reservoirs in Androscoggin River basin--Continued

## Monthly gage height and contents, water year October 1951 to September 1952--Continued

Date	Umbagog Lake†			Azisecos Lake†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	12.10	1,958	-	524.3	6,464	-
Oct. 31.....	11.45	1,722	-236	521.05	5,564	-900
Nov. 30.....	12.45	2,091	+369	526.3	7,024	+1,460
Dec. 31.....	12.60	2,148	+57	523.2	6,156	-868
Calendar year 1951.....	-	-	+38	-	-	-1,866
Jan. 31.....	11.80	1,848	-300	521.45	5,672	-484
Feb. 29.....	10.55	1,398	-450	518.25	4,825	-847
Mar. 31.....	9.45	1,045	-353	514.2	3,818	-1,007
Apr. 30.....	14.55	2,904	+1,859	526.6	7,108	+3,290
May 31.....	15.05	3,106	+196	535.8	9,841	+2,733
June 30.....	14.15	2,748	-352	535.05	9,608	-235
July 31.....	12.85	2,053	-695	530.9	8,350	-1,258
Aug. 31.....	12.10	1,958	-95	525.8	6,884	-1,466
Sept. 30.....	11.35	1,686	-272	520.9	5,280	-1,604
Water year 1951-52.....	-	-	-272	-	-	-1,184

Date	Gulf Island Pond‡			Lake Auburn†		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	62.04	2,492	-	59.2	408	-
Oct. 31.....	61.96	2,480	-12	59.3	419	+11
Nov. 30.....	60.51	2,283	-197	60.0	496	+77
Dec. 31.....	61.82	2,461	+178	59.7	463	-33
Calendar year 1951.....	-	-	+29	-	-	+11
Jan. 31.....	61.04	2,354	-107	59.7	463	0
Feb. 29.....	60.70	2,308	-46	59.5	441	-22
Mar. 31.....	61.96	2,480	+172	59.6	452	+11
Apr. 30.....	61.96	2,480	0	60.6	568	+116
May 31.....	61.90	2,472	-8	60.3	532	-36
June 30.....	61.62	2,434	-38	59.2	408	-124
July 31.....	60.06	2,224	-210	58.4	320	-88
Aug. 31.....	61.45	2,410	+186	57.8	260	-60
Sept. 30.....	60.94	2,340	-70	57.5	230	-30
Water year 1951-52.....	-	-	-152	-	-	-178

Date	Fennesseewassee Lake††			Thompson Lake††		
	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)	Gage height (feet)	Contents (millions of cubic feet)	Change in contents during month (m.c.f.)
Sept. 30.....	97.8	85	-	97.50	1,742	-
Oct. 31.....	96.6	121	+36	97.00	1,647	-95
Nov. 30.....	98.4	111	-10	98.65	1,998	+351
Dec. 31.....	97.5	74	-37	99.25	2,074	+76
Calendar year 1951.....	-	-	+35	-	-	+199
Jan. 31.....	97.55	76	+2	98.40	1,913	-161
Feb. 29.....	96.7	46	-30	96.35	1,524	-389
Mar. 31.....	96.3	33	-13	96.35	1,524	0
Apr. 30.....	98.4	111	+78	98.65	1,960	+436
May 31.....	98.55	118	+7	99.60	2,142	+182
June 30.....	98.2	102	-16	98.65	1,960	-182
July 31.....	98.2	102	0	97.40	1,723	-237
Aug. 31.....	95.9	22	-80	96.10	1,476	-247
Sept. 30.....	97.9	89	+67	94.85	1,240	-236
Water year 1951-52.....	-	-	+4	-	-	-502

† Gage height and contents at 7 a.m. on first day of following month.

‡ Gage height and contents at 12 p.m.

†† Gage height and contents as of last day of each month determined by interpolation.

## Royal River at Yarmouth, Maine

Location.--Lat 43°47'55", long. 70°10'45", on right bank 150 ft above lower highway bridge in Yarmouth, Cumberland County.

Drainage area.--142 sq mi.

Records available.--October 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,000 cfs Apr. 6 (gage height, 5.16 ft); minimum, 5.4 cfs Aug. 26 (gage height, 0.68 ft).  
1949-52: Maximum discharge, 4,400 cfs Apr. 1, 1951; minimum, that of Aug. 26, 1952; minimum gage height, 0.64 ft Aug. 23, 24, 1950.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

1.2	70	2.5	705	1.0	31	1.4	120
1.4	125	3.0	1,140	1.1	47	1.6	196
1.6	198	4.0	2,290	1.2	68	1.8	285
1.8	285	5.0	3,740				
2.0	385						

Note.--Same as preceding table above 1.8 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	232	215	677	335	198	772	333	309	124	54	31
2	68	219	202	590	255	178	1,610	272	1,742	109	87	87
3	68	2,050	190	486	250	190	*2,250	240	1,390	103	53	75
4	69	3,310	194	420	595	182	1,870	227	670	109	*50	53
5	68	1,620	206	380	1,430	178	1,820	209	442	112	61	44
6	68	765	835	335	1,230	198	3,490	196	354	98	90	39
7	70	1,200	1,240	290	869	258	3,430	196	343	90	77	36
8	250	3,640	760	260	585	267	2,130	192	369	83	67	40
9	402	2,310	512	240	448	249	1,590	180	280	79	62	42
10	227	1,040	415	*225	370	232	1,320	167	231	79	64	37
11	159	656	359	205	345	315	1,250	163	209	82	73	31
12	149	467	299	194	905	1,310	1,080	*1,220	196	82	70	36
13	122	396	219	186	740	1,380	887	2,090	180	80	68	36
14	107	359	178	182	465	1,160	860	1,140	155	76	66	36
15	95	375	160	182	360	870	1,210	600	148	69	58	37
16	90	369	156	186	300	670	1,000	550	144	66	49	33
17	88	531	150	194	267	480	804	844	134	65	82	37
18	82	492	142	220	232	414	649	616	184	64	82	37
19	82	385	142	360	250	408	557	448	180	70	62	37
20	82	319	359	505	260	380	512	354	163	75	53	75
21	80	262	875	705	249	448	461	705	144	68	47	62
22	78	227	1,210	635	236	557	402	923	134	63	45	44
23	76	232	890	1,420	220	656	375	564	130	63	39	37
24	78	280	564	1,760	225	576	333	396	127	56	44	*36
25	985	319	492	1,350	210	550	299	319	124	55	45	37
26	1,260	450	369	905	211	684	323	359	138	55	37	39
27	570	750	335	1,310	211	923	319	442	262	58	37	41
28	319	369	310	1,190	202	1,130	314	328	176	61	36	44
29	436	323	290	870	206	1,060	474	267	138	58	36	44
30	391	240	280	635	-	959	448	262	130	53	31	41
31	276	-	499	475	-	941	-	262	-	51	33	-
Total	6,965	24,187	13,067	17,572	12,461	18,001	32,839	15,064	9,324	2,356	1,726	1,374
Mean	225	806	422	567	430	581	1,095	486	311	76.0	55.7	43.5
Cfsm	1.58	5.68	2.97	3.99	3.03	4.09	7.71	3.42	2.19	0.535	0.392	0.376
In.	1.82	6.34	3.42	4.60	3.27	4.72	8.60	3.94	2.44	0.62	0.45	0.34

Calendar year 1951: Max 4,130

Min 63

Mean 376

Cfsm 2.65

In. 35.96

Water year 1951-52: Max 3,640

Min 31

Mean 423

Cfsm 2.98

In. 40.56

Peak discharge (base, 1,500 cfs).--Nov. 4 (6 a.m.) 3,660 cfs (4.95 ft); Nov. 8 (11:30 a.m.) 3,820 cfs (5.05 ft); Jan. 23 (7 p.m.) 1,930 cfs (3.70 ft); Apr. 3 (2 a.m.) 2,340 cfs (4.04 ft); Apr. 6 (9 p.m.) 4,000 cfs (5.16 ft); May 12 (9:30 p.m.) 2,460 cfs (4.13 ft); June 2 (10:30 a.m.) 2,010 cfs (3.77 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 10, 15-19, 27-30, Jan. 4-22, Jan. 29 to Feb. 3, Feb. 8, 10-16, 19, 20, 23-25, Mar. 1, 2, 15, 16, and by debris on control Aug. 11 to Sept. 30.

## Presumpscot River at outlet of Sebago Lake, Maine

Location.--Lat 43°49'05", long. 70°27'00", at dam of hydroelectric plant at Eel Weir Falls, 1 mile downstream from lake outlet, Cumberland County.

Drainage area.--436 sq mi.

Records available.--January 1887 to September 1952.

Gage.--Float gages in forebay and tailrace of hydroelectric plant at Eel Weir Falls and staff gage at dam on outlet of Sebago Lake.

Average discharge.--65 years, 657 cfs.

Remarks.--Discharge computed from Allen meter records for each of 3 pairs of water wheels and from records of openings of 2 regulating gages at Eel Weir hydroelectric plant. Water wasted at rare intervals through gates in dam on outlet of Sebago Lake; flow computed from records of gate openings. Water diverted by Portland Water District and leakage through dam, totaling about 35 cfs, not included in figures of daily discharge. Flow completely regulated by Crystal, Highland and Pleasant Lakes, Brandy, Thomas, and Panther Ponds, Sebago Lake (surface area, 45.6 sq mi), and by several smaller ponds, which have a combined usable capacity of 13,535,000,000 cu ft (revised).

Cooperation.--Records furnished by S. D. Warren Co.

Revisions (water years).--W 261: Drainage area. W 1301: 1920-50 (adjusted monthly runoff in inches).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	786	823	833	836	837	1,290	838	2,250	1,500	174	830	834
2	830	818	833	837	932	1,050	826	1,160	1,030	0	836	282
3	738	825	834	835	1,010	1,050	835	1,160	3,380	0	826	832
4	743	784	834	835	1,010	1,050	835	1,100	2,800	145	838	834
5	773	624	834	834	1,010	1,050	838	728	3,620	360	836	817
6	830	661	834	837	1,010	1,050	835	1,040	2,980	234	837	834
7	754	826	785	837	1,010	1,050	833	950	3,590	647	835	835
8	647	545	834	838	1,010	891	872	990	2,860	794	836	835
9	559	542	835	841	1,000	1,050	1,420	998	2,250	777	835	835
10	724	795	833	840	1,000	1,050	2,320	1,100	1,650	832	834	833
11	678	833	835	840	1,010	1,050	3,350	881	1,550	905	832	833
12	722	834	829	839	1,000	1,050	3,320	904	1,150	764	836	833
13	715	834	835	840	824	1,050	3,340	2,900	1,160	835	834	833
14	752	835	751	840	1,000	1,050	3,370	3,560	1,160	836	905	833
15	751	835	836	839	1,010	836	3,250	3,040	1,050	837	834	830
16	659	835	843	838	1,010	812	3,160	3,290	1,140	832	836	829
17	752	835	865	836	1,000	746	2,640	2,300	1,160	835	800	829
18	728	835	548	837	1,010	835	2,450	2,200	1,160	831	838	828
19	734	835	545	836	883	836	1,680	1,830	1,160	829	778	827
20	748	835	694	836	823	835	2,110	2,250	1,170	830	822	952
21	734	835	834	835	1,010	835	2,570	1,880	1,160	910	833	873
22	737	791	824	836	1,060	837	2,130	1,970	1,160	840	820	826
23	727	835	836	836	1,440	836	2,860	1,920	1,200	834	832	824
24	829	835	835	835	1,830	840	2,840	1,880	1,320	834	833	825
25	739	835	725	836	1,440	833	2,740	1,920	1,180	833	834	1,170
26	649	833	507	835	1,440	834	2,740	1,870	1,150	836	834	825
27	802	834	834	948	1,440	837	2,690	1,870	1,120	835	805	826
28	722	829	835	836	1,440	833	2,680	1,870	907	839	811	822
29	722	834	835	837	1,440	838	2,740	2,180	745	829	840	853
30	679	834	835	836	-	838	2,730	1,990	0	833	876	823
31	798	-	835	836	-	833	-	1,120	-	834	906	-
Total	22,560	23,884	24,405	26,057	31,739	28,875	65,742	55,099	47,262	21,554	25,882	24,865
Mean	728	786	787	841	1,034	931	2,191	1,777	1,575	695	835	829
(+)	-328	+513	+422	+364	-125	+303	+1,319	-73	-312	-721	-870	-234

## Adjusted for change in reservoir contents

Mean Cfsm In.	Observed						Adjusted					
	400	1,309	1,209	1,205	959	1,234	3,510	1,704	1,263	-26	-35	595
	0.917	3.00	2.77	2.76	2.22	2.83	8.05	3.91	2.90	-0.060	-0.080	1.36
	1.06	3.35	3.19	3.18	2.39	3.26	8.98	4.51	3.24	-0.07	-0.09	1.52
Calendar year 1951:	Max	3,160	Min	212	Mean	849	Mean	941	Cfsm	2.16	In.	29.30
Water year 1951-52:	Max	3,620	Min	0	Mean	1,087	Mean	1,106	Cfsm	2.54	In.	34.52

† Change in contents, in Sebago Lake, Brandy Pond (controls also Long Lake), Panther Pond (controls also Rattlesnake Pond), Highland Lake, Pleasant Lake (controls also Parker Pond), Crystal Lake, Thomas Pond, and several smaller ponds, diversion by Portland Water District, and leakage past gaging station. Negative flows indicated for July and August are due to excessive evaporation from lake surface above gaging station.

Saco River near Conway, N. H.

Location.--Lat 43°59'25", long. 71°05'30", on left bank at Odell Falls, 1 $\frac{3}{4}$  miles downstream from Swift River and Conway, Carroll County.

Drainage area.--386 sq mi.

Records available.--August 1903 to June 1912, February 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 418.19 ft above mean sea level, datum of 1929. Aug. 26, 1903, to June 30, 1912, chain gage at site three-quarters of a mile downstream at different datum.

Average discharge.--29 years (1903-9, 1929-52), 914 cfs.

Extremes.--Maximum discharge during year, 22,700 cfs June 2 (gage height, 12.01 ft); minimum, 116 cfs Sept. 1 (gage height, 2.05 ft).  
1903-10, 1929-52: Maximum discharge, 40,600 cfs Mar. 19, 1936 (gage height, 16.45 ft), from rating curve extended above 11,000 cfs on basis of slope-area determination of peak flow; minimum, 40 cfs Mar. 16, 1932 (gage height, 1.61 ft).

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

Revisions.--W 756: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	103	4.0	1,140
2.2	156	5.0	1,330
2.4	218	6.0	3,970
2.6	288	7.0	6,080
3.0	465	8.0	8,760
3.5	752	9.5	13,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	365	792	727	780	450	400	696	4,050	4,150	512	180	116
2	340	752	690	740	430	395	1,100	3,140	13,500	455	174	640
3	335	7,530	654	690	415	395	1,570	2,680	4,550	425	168	517
4	331	7,910	630	630	395	390	1,360	2,340	3,230	397	171	425
5	327	5,290	678	595	1,050	390	1,410	2,100	3,120	363	208	304
6	315	*2,240	4,680	630	1,250	425	4,610	2,050	3,120	361	311	238
7	308	2,660	3,320	650	785	435	3,830	2,240	3,120	335	270	205
8	1,730	6,320	2,240	625	*715	435	3,140	2,380	3,200	323	*221	183
9	1,460	3,430	1,770	625	690	430	*2,800	2,660	3,280	315	186	174
10	846	2,400	1,540	620	635	425	2,840	2,870	2,680	515	168	165
11	696	1,970	1,230	*615	630	465	3,610	3,670	2,520	600	218	162
12	624	1,650	1,160	590	630	820	3,260	10,200	2,440	721	235	159
13	550	1,450	943	555	615	*640	2,840	7,690	2,200	455	218	153
14	512	1,340	820	515	580	570	3,010	4,120	1,870	369	189	145
15	481	1,500	710	505	540	500	4,310	3,180	1,500	323	168	136
16	460	1,340	625	1,190	495	465	4,390	3,410	1,380	296	165	145
17	440	1,310	565	935	475	530	4,350	2,800	1,210	284	284	145
18	420	1,160	510	965	490	495	4,780	2,330	980	266	356	139
19	410	1,050	465	950	515	475	5,600	2,120	870	274	249	150
20	397	943	420	690	505	475	8,900	2,050	670	284	205	165
21	374	846	400	515	480	480	8,240	3,930	625	270	186	156
22	365	832	985	415	460	535	5,900	3,410	595	259	180	142
23	361	875	750	600	445	570	8,220	2,680	572	249	186	134
24	356	935	665	725	435	560	6,950	2,270	539	228	218	148
25	1,570	875	620	565	425	545	4,960	2,100	561	215	212	148
26	1,260	798	570	570	415	545	4,580	3,790	572	212	186	142
27	839	818	550	820	410	630	5,300	2,900	670	205	174	145
28	721	759	530	890	405	740	5,580	2,180	765	232	159	148
29	727	752	510	630	400	690	7,130	1,870	607	225	139	139
30	684	727	505	500	-	680	5,720	1,810	572	202	123	134
31	666	-	830	470	-	690	-	1,550	-	186	118	-
Total	19,270	59,254	31,292	20,795	16,165	16,220	131,006	95,770	65,668	10,176	6,225	5,902
Mean	622	1,975	1,009	671	557	523	4,367	3,089	2,189	328	201	197
Cfsm	1.61	5.12	2.61	1.74	1.44	1.35	11.31	8.00	5.67	0.850	0.521	0.510
In.	1.86	5.71	3.01	2.01	1.55	1.56	12.62	9.22	6.33	0.98	0.60	0.57

Calendar year 1951: Max 8,940 Min 290 Mean 1,169 Cfsm 3.03 In. 41.08  
Water year 1951-52: Max 13,500 Min 116 Mean 1,305 Cfsm 3.58 In. 46.02

Peak discharge (base, 8,700 cfs).--Nov. 4 (11 p.m.) 17,500 cfs (10.66 ft); Dec. 6 (3 p.m.) 8,820 cfs (8.02 ft); Apr. 20 (11 p.m.) 12,100 cfs (9.08 ft); Apr. 23 (9 p.m.) 10,900 cfs (8.69 ft); May 12 (5:30 p.m.) 16,000 cfs (10.25 ft); June 2 (5 a.m.) 22,700 cfs (12.01 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 14-29, Feb. 10 to Mar. 10, June 8-21, 27; discharge estimated on basis of weather records and records for nearby stations. Stage-discharge relation affected by ice Dec. 30 to Feb. 9, Mar. 11-31.

## Ossipee River at Effingham Falls, N. H.

Location.--Lat 43°47'40", long. 71°03'40", on left bank 0.3 mile upstream from highway bridge at Effingham Falls, Carroll County, 0.35 mile downstream from outlet of Ossipee Lake, and 4 miles northwest of Effingham.

Drainage area.--330 sq mi.

Records available.--September 1942 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map).

Average discharge.--10 years, 705 cfs.

Extremes.--Maximum discharge during year, 4,360 cfs Apr. 21, 22 (gage height, 8.46 ft); minimum, 177 cfs Sept. 30 (gage height, 2.09 ft); minimum daily, 179 cfs Sept. 26-30. 1942-52: Maximum discharge, 4,800 cfs Apr. 5, 1951 (gage height, 8.82 ft); minimum, 10 cfs Oct. 9, 10, 1944; minimum daily, 11 cfs Oct. 10, 1944.

Remarks.--Records excellent. Flow regulated by Ossipee and Silver Lakes and Pine River Pond (combined capacity, 1,430,000,000 cu ft).

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)

2.0	160	6.0	2,000
2.5	265	7.0	2,810
3.0	410	8.0	3,830
4.0	800	8.5	4,410
5.0	1,330		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	371	750	678	760	1,030	642	915	2,620	1,240	536	306	251
2	371	750	*670	778	1,020	622	975	2,420	2,240	380	301	256
3	368	1,100	670	804	1,000	608	1,140	2,200	3,140	380	298	256
4	368	2,350	666	809	995	586	1,330	1,980	3,160	380	298	256
5	365	2,900	662	800	1,000	522	1,500	1,790	2,930	377	295	256
6	362	2,800	674	800	1,030	590	2,050	1,260	2,630	374	295	256
7	362	2,580	997	791	1,050	602	2,840	1,020	2,350	371	293	254
8	368	2,610	1,240	818	1,040	598	3,290	845	1,980	368	290	251
9	397	2,680	1,370	905	1,040	594	3,480	840	1,620	368	290	251
10	477	2,570	1,500	872	1,020	582	3,470	840	1,310	*371	288	249
11	278	2,360	1,390	845	1,010	598	3,490	835	1,150	377	288	247
12	280	2,090	1,240	832	1,040	670	3,530	1,070	664	367	285	244
13	282	1,540	895	818	995	719	3,500	1,900	540	394	285	242
14	285	1,130	804	804	980	768	3,420	2,610	742	394	282	240
15	288	1,130	832	800	935	796	3,440	2,610	698	394	282	238
16	312	1,130	796	800	895	796	3,590	2,480	498	390	280	235
17	424	1,130	755	809	876	804	3,690	2,360	337	387	282	233
18	428	1,130	746	818	822	800	3,740	2,160	390	387	282	231
19	428	1,080	746	836	845	786	3,840	1,960	550	387	278	210
20	428	945	724	858	836	791	4,020	1,480	550	384	272	181
21	424	935	732	872	822	782	4,290	1,400	473	380	270	181
22	424	791	746	863	814	773	4,300	1,750	320	377	270	181
23	424	698	768	868	796	768	4,110	1,900	320	374	268	181
24	424	702	778	890	773	773	3,960	1,800	323	371	265	181
25	593	702	778	890	746	760	3,710	1,440	329	368	263	181
26	1,140	746	782	890	724	746	3,410	1,400	371	365	260	179
27	1,070	925	768	910	702	760	*3,130	1,700	761	362	*258	179
28	955	910	746	955	666	800	2,940	1,930	955	343	256	179
29	945	854	732	1,010	666	850	2,860	1,780	818	301	256	179
30	935	702	728	1,100	-	876	2,800	1,530	606	301	254	179
31	890	-	742	1,060	-	895	-	1,160	-	*309	251	-
Total	15,466	42,720	26,355	26,665	26,188	22,255	92,760	53,071	33,995	11,637	6,641	6,639
Mean	499	1,424	850	860	903	718	3,092	1,712	1,133	375	279	221
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Calendar year 1951: Max	4,720				Min 173	Mean 911	Cfsm 2.76	In. 37.49				
Water year 1951-52: Max	4,300				Min 179	Mean 1,001	Cfsm 3.03	In. 41.29				

\* Discharge measurement made on this day.

## Ossipee River at Cornish, Maine

Location.--Lat 43°48'25", long. 70°47'55", on left bank just downstream from highway bridge in Cornish, York County, 1 $\frac{1}{4}$  miles upstream from mouth.

Drainage area.--453 sq mi.

Records available.--July 1916 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 276.1 ft above mean sea level, datum of 1929. Prior to Aug. 21, 1929, chain gage at same site at 1 ft higher datum. Aug. 21, 1929, to Sept. 30, 1942, water-stage recorder at same site at datum 1 ft higher than present datum.

Average discharge.--36 years, 864 cfs.

Extremes.--Maximum discharge during year, 5,270 cfs Apr. 22 (gage height, 7.68 ft); minimum, 46 cfs Sept. 23 (gage height, 0.73 ft); minimum daily, 198 cfs Sept. 23, 27, 1916-52: Maximum discharge, 17,200 cfs Mar. 21, 1936 (gage height, 16.32 ft, present datum), from rating curve extended above 7,500 cfs; minimum, 25 cfs Oct. 23, 1947 (gage height, 0.60 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by powerplants at Kezar Falls and by Ossipee and Silver Lakes, Pine River, Bickford and Colcord Ponds (combined capacity, 1,600,000,000 cu ft).

Revisions.--W 756: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	198	4.0	1,540
1.7	261	5.0	2,350
2.0	370	6.0	3,300
2.5	600	7.0	4,440
3.0	880	7.7	5,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	444	932	863	1,190	1,610	970	1,350	4,120	1,520	754	362	269
2	444	880	863	1,180	1,490	960	1,750	3,780	3,040	548	328	343
3	444	1,720	868	1,170	1,490	940	1,970	3,480	3,700	485	340	316
4	449	3,320	851	1,120	1,490	920	2,070	3,210	3,720	481	336	292
5	440	3,290	874	1,060	1,620	903	2,460	2,990	3,510	476	347	275
6	427	*3,230	1,170	1,010	1,620	926	4,380	2,690	3,080	453	366	261
7	423	3,150	1,250	970	1,820	952	4,310	2,220	2,720	453	*351	264
8	627	3,750	1,500	*945	1,550	892	4,630	1,980	2,360	440	336	296
9	638	3,370	1,590	925	1,510	886	*4,880	1,910	1,980	436	314	260
10	611	3,040	1,800	915	1,500	868	4,900	1,850	1,580	436	340	260
11	519	2,760	1,650	905	1,440	*926	5,050	1,830	1,490	682	355	265
12	394	2,470	1,550	895	1,390	1,200	4,920	1,770	1,180	632	340	258
13	398	2,110	1,220	890	1,390	1,280	4,700	2,390	782	524	356	235
14	390	1,460	1,160	890	1,340	1,210	4,780	2,800	680	490	325	248
15	406	1,460	1,100	920	1,300	1,230	4,910	3,010	838	481	314	278
16	378	1,440	1,080	970	1,270	1,190	4,910	2,950	811	481	296	255
17	462	1,500	1,060	1,010	1,220	1,110	4,910	2,850	590	444	347	250
18	504	1,480	1,060	1,070	1,210	1,080	4,880	2,590	584	449	362	240
19	504	1,430	1,070	1,130	1,210	1,070	4,920	2,340	698	444	314	310
20	494	1,240	1,100	1,200	1,200	1,060	5,040	2,020	743	440	307	314
21	504	1,160	1,170	1,280	1,180	1,060	5,210	1,920	709	440	330	230
22	519	1,090	1,220	1,360	1,150	1,070	5,220	2,070	579	440	285	260
23	490	956	1,290	1,490	1,110	1,090	4,940	2,280	490	432	268	198
24	514	974	1,350	1,540	1,100	1,100	4,680	2,160	499	432	278	210
25	720	992	1,370	1,550	1,080	1,090	4,420	1,920	509	402	296	205
26	1,240	968	1,240	1,530	1,050	1,090	4,080	1,830	543	402	278	200
27	1,270	1,110	1,370	1,520	1,180	1,190	3,750	1,940	926	406	275	198
28	1,110	1,100	1,410	1,550	1,000	1,300	3,430	2,170	1,160	410	270	205
29	1,130	1,090	1,340	1,530	990	1,300	3,400	2,090	1,070	362	280	225
30	1,090	938	1,210	1,650	-	1,320	3,260	1,970	822	343	238	200
31	1,050	-	1,190	1,680	-	1,350	-	1,600	-	351	264	-
Total	19,033	54,410	37,839	37,045	38,140	33,513	124,110	74,730	43,213	14,449	9,748	7,621
Mean	614	1,814	1,221	1,195	1,315	1,081	4,137	2,411	1,440	466	314	254
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 6,170 Min 255 Mean 1,172 Cfsm 2.59 In. 35.13  
 Water year 1951-52: Max 5,220 Min 198 Mean 1,349 Cfsm 2.98 In. 40.56

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 17-21, Jan. 3-21, Feb. 12 to Mar. 4.

## Saco River at Cornish, Maine

Location.--Lat 43°48'30", long. 70°46'55", on left bank just upstream from highway bridge at Cornish, York County, half a mile downstream from Ossipee River.

Drainage area.--1,298 sq mi.

Records available.--June 1916 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 263.48 ft above mean sea level, datum of 1929. Prior to Oct. 30, 1919, chain gage on bridge just downstream at different datum.

Average discharge.--36 years, 2,661 cfs.

Extremes.--Maximum discharge during year, 16,900 cfs Apr. 23 (gage height, 11.09 ft); minimum, 340 cfs Sept. 14 (gage height, 1.65 ft).  
1916-52: Maximum discharge, 51,300 cfs Mar. 21, 22, 1936 (gage height, 21.90 ft, from floodmarks), from rating curve extended above 16,000 cfs on basis of contracted-opening determination of peak flow; minimum, 90 cfs Oct. 1, 1921 (gage height, 0.03 ft).

Remarks.--Records excellent except those for period of ice effect, which are fair. Flow regulated by powerplants above station and by Ossipee, Silver, Conway, and Kezar Lakes, and Moose, Hancock, Pine River, Bickford, and Colcord Ponds (combined capacity, 3,400,000,000 cu ft).

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	494	5.0	3,350
2.5	765	6.0	5,000
3.0	1,120	7.0	7,000
3.5	1,530	9.0	11,700
4.0	2,050	11.0	16,800

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	2,360	2,610	3,040	3,800	2,300	3,650	12,000	5,750	2,240	902	617
2	1,020	2,330	2,540	2,900	3,600	2,330	4,400	11,600	8,060	1,950	772	765
3	1,060	4,190	2,690	2,820	3,470	2,350	4,890	10,700	9,210	1,690	666	778
4	1,070	6,810	2,610	2,890	3,500	2,310	5,230	9,650	11,100	1,530	784	937
5	1,050	7,310	2,610	3,140	3,800	2,250	5,910	8,660	11,800	1,420	810	824
6	1,040	8,200	3,060	3,350	3,900	2,300	9,630	7,720	11,100	1,340	810	772
7	951	8,980	2,660	3,150	3,850	2,300	9,700	6,710	10,100	1,350	*815	784
8	1,190	10,300	4,360	2,990	3,740	2,290	*10,500	5,930	9,110	1,290	824	694
9	1,630	9,940	4,810	3,000	3,580	2,220	11,500	5,550	7,920	1,280	759	672
10	2,070	9,740	5,170	2,820	3,520	2,160	12,000	5,300	7,020	1,270	705	717
11	1,910	9,600	5,000	2,740	3,560	2,150	12,700	5,110	6,370	1,390	876	650
12	1,760	8,980	4,810	2,850	3,590	2,700	12,800	6,240	5,570	1,670	784	606
13	1,670	8,060	4,280	2,610	3,480	3,700	12,800	7,240	4,720	1,570	735	532
14	1,590	6,790	3,740	2,520	3,380	3,800	12,800	8,610	4,450	1,500	753	532
15	1,480	6,290	3,220	2,400	3,220	3,720	13,000	10,600	4,200	1,420	753	628
16	1,420	5,870	2,960	2,670	3,080	3,580	13,000	10,900	3,770	1,350	741	595
17	1,470	5,710	2,850	2,710	2,920	3,420	13,200	10,400	3,220	1,260	705	590
18	1,470	5,320	2,250	2,920	2,790	3,220	13,500	9,620	3,070	1,190	817	584
19	1,410	5,060	2,450	2,970	2,720	3,170	13,800	8,840	3,040	1,180	817	580
20	1,370	4,610	2,450	3,080	2,740	3,040	14,100	7,900	2,940	1,140	817	661
21	1,330	4,200	3,400	3,170	2,760	2,970	14,700	7,530	2,760	1,150	741	639
22	1,300	3,940	3,110	3,100	2,700	2,940	16,200	7,420	2,480	1,130	723	694
23	1,270	3,620	2,940	3,650	2,670	2,940	16,800	7,440	2,240	1,080	639	563
24	1,300	3,530	2,820	3,590	2,650	2,960	16,200	7,310	2,100	1,030	595	547
25	1,690	3,440	2,740	3,500	2,690	2,960	15,900	7,000	2,020	944	644	537
26	2,450	3,350	2,930	3,520	2,630	2,990	15,500	6,920	2,040	951	634	532
27	2,800	3,410	2,870	3,710	2,580	3,180	14,200	6,830	2,490	845	634	558
28	2,600	3,080	2,930	3,600	2,510	3,410	13,000	7,000	2,760	882	628	584
29	2,690	3,040	2,970	3,540	2,400	3,500	12,400	6,850	2,740	824	612	622
30	2,610	2,720	2,710	3,650	-	3,560	12,200	6,580	2,430	784	595	547
31	2,530	-	3,170	3,830	-	3,650	-	5,910	-	810	579	-
Total	50,381	170,660	100,720	96,290	91,840	90,370	356,010	246,070	156,580	39,460	22,669	19,411
Mean	1,625	5,689	3,249	3,106	3,167	2,915	11,870	7,938	5,219	1,273	731	647
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 16,900 Min 951 Mean 3,494 Cfsm 2.69 In. 36.54  
Water year 1951-52: Max 16,800 Min 532 Mean 3,936 Cfsm 3.03 In. 41.27

Peak discharge (base, 6,200 cfs).--Nov. 8 (3 p.m.) 10,600 cfs (8.50 ft); Apr. 23 (11:30 a.m.) 16,900 cfs (11.09 ft); May 16 (6 a.m. to 1 p.m.) 10,900 cfs (8.64 ft); June 5 (12:30 p.m.) 11,800 cfs (9.07 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 18 to Mar. 18.

## Little Ossipee River near South Limington, Maine

Location.--Lat 43°41'15", long. 70°40'05", on right bank just upstream from highway bridge, 2 miles southeast of South Limington, York County, and 4 miles upstream from mouth.

Drainage area.--161 sq mi.

Records available.--August 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 260 ft (from topographic map).

Average discharge.--12 years, 271 cfs.

Extremes.--Maximum discharge during year, 3,740 cfs Apr. 7 (gage height, 5.87 ft); minimum, 60 cfs Sept. 17, 18 (gage height, 1.81 ft).

1940-52: Maximum discharge, that of Apr. 7, 1952; minimum, 7.3 cfs July 23, 1941 (gage height, 1.30 ft).

Maximum discharge known, 8,530 cfs Mar. 19, 1936, at "Ledgemere" powerplant 4 miles upstream.

Remarks.--Records excellent except those for periods of ice effect or no gage height record, which are fair. Flow regulated by Little Ossipee Lake and Balch Pond (combined capacity, 351,000,000 cu ft) and by powerplants above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

3.5 845  
4.3 1,520

1.8 58 3.5 845  
2.0 106 4.0 1,310  
2.3 202 5.0 2,450  
2.6 322 5.8 3,630  
3.0 520

Note.--Same as following table below 3.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	235	300	548	540	300	681	707	426	200	96	69
2	132	228	296	578	504	295	870	630	860	192	93	71
3	123	455	292	520	483	290	1,350	559	1,230	184	90	73
4	118	1,450	288	470	504	285	1,420	526	912	176	88	76
5	118	1,390	313	455	636	300	1,510	478	707	170	93	76
6	120	890	467	415	735	322	2,690	447	612	164	*101	76
7	129	687	749	*400	700	354	3,610	436	551	160	109	73
8	164	1,360	770	440	605	359	2,780	431	462	158	112	71
9	235	1,430	668	420	548	359	*2,360	406	397	154	112	71
10	263	1,010	649	400	505	350	2,080	378	336	152	112	69
11	247	426	570	395	485	373	1,990	354	327	174	109	67
12	232	576	462	370	480	595	2,000	570	318	230	109	67
13	217	509	392	354	455	755	1,770	1,250	305	215	109	65
14	206	478	345	345	410	756	1,650	1,100	279	200	109	62
15	192	509	325	340	390	705	1,970	815	255	192	106	62
16	184	526	315	387	380	640	1,970	763	232	188	101	62
17	181	594	320	430	363	565	1,680	875	220	181	101	60
18	178	606	305	452	322	504	1,400	800	224	174	103	60
19	174	548	315	495	380	499	1,150	642	224	167	106	69
20	170	483	345	499	400	488	966	537	213	164	103	71
21	164	431	385	525	382	467	845	618	206	157	98	73
22	161	397	436	535	368	478	763	852	192	151	93	73
23	157	368	478	560	363	499	687	763	184	157	88	76
24	154	359	478	675	350	515	606	582	181	132	80	76
25	198	373	480	655	335	504	554	472	174	123	78	76
26	363	363	467	600	325	509	588	457	181	115	76	73
27	365	392	455	655	322	600	624	509	202	112	75	73
28	298	354	410	770	322	697	618	504	224	106	71	75
29	275	336	395	755	315	700	770	462	220	106	69	73
30	271	313	395	680	-	687	808	431	210	101	67	71
31	255	-	462	600	-	694	-	406	-	98	67	-
Total	6,181	18,066	13,307	15,711	12,907	15,434	42,760	18,760	11,044	4,953	2,922	2,107
Mean	199	602	429	507	445	498	1,425	605	368	160	94.3	70.2
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 2,810 Min 109 Mean 390 Cfsm - In. -

Water year 1951-52: Max 3,610 Min 60 Mean 449 Cfsm - In. -

Peak discharge (base, 1,000 cfs).--Nov. 4 (5 to 10 p.m.) 1,620 cfs (4.40 ft); Nov. 8 (12 p.m.) 1,560 cfs (4.34 ft); Apr. 7 (5 to 10 a.m.) 3,740 cfs (5.87 ft); Apr. 15 (9 to 12 p.m.) 2,070 cfs (4.70 ft); May 13 (1 to 6 p.m.) 1,330 cfs (4.02 ft); June 3 (4 to 9 a.m.) 1,280 cfs (3.97 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record June 30 to July 15; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Dec. 15-21, 25, 27-30, Jan. 3-12, 17, 19, 21-25, Jan. 29 to Feb. 1, Feb. 8, 10-16, 19, 20, 25, 26, Feb. 29 to Mar. 4, Mar. 12, 13, 15, 16.



## Mousam River near West Kennebunk, Maine

Location.--Lat 43°25'05", long. 70°39'35", on right bank 100 ft upstream from highway bridge, 1½ miles downstream from Middle Branch, and 4 miles west of West Kennebunk, York County.

Drainage area.--105 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 170 ft (from topographic map).

Average discharge.--13 years, 171 cfs.

Extremes.--Maximum discharge during year, 2,350 cfs Apr. 6 (gage height, 5.04 ft); minimum, 8.0 cfs Sept. 20, Dec. 23 (gage height, 0.42 ft).  
1939-52: Maximum discharge, that of Apr. 6, 1952; minimum, 1.1 cfs Aug. 22, 1941; minimum gage height, 0.29 ft Nov. 15, 16, 1947.

Remarks.--Records good except those below 50 cfs and those for periods of no gage-height record, which are fair. Flow regulated by Square Pond and Mousam and Estes Lakes (combined usable capacity, about 700,000,000 cu ft) and by powerplants above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 4					Apr. 5 to Sept. 30				
0.7	27	1.7	275		0.5	12	2.0	395	
.8	37	2.0	395		.7	27	2.5	635	
.9	50	2.5	622		.9	50	3.0	920	
1.0	66	3.0	890		1.1	85	4.0	1,580	
1.2	108	4.0	1,480		1.5	198	4.8	2,170	
1.4	164								

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	196	263	467	424	215	517	440	339	184	95	27
2	150	190	271	450	391	215	790	404	760	132	18	156
3	126	680	290	429	395	225	978	363	610	76	18	148
4	124	1,050	250	383	480	235	912	355	545	74	91	120
5	124	*720	267	367	552	220	1,060	355	754	85	*96	116
6	30	517	339	331	632	198	2,120	319	569	70	94	42
7	36	725	395	347	545	188	1,560	299	458	118	97	37
8	184	1,360	343	315	476	184	*1,140	287	404	120	85	99
9	188	908	347	299	441	180	1,040	255	387	116	18	104
10	158	632	367	287	408	235	932	195	339	100	29	104
11	164	545	319	275	420	359	920	202	335	100	118	102
12	168	458	295	245	435	556	824	635	291	42	140	104
13	61	458	271	251	345	574	743	*777	271	61	178	28
14	64	399	228	271	355	550	812	574	259	132	134	28
15	146	399	239	271	323	471	884	480	191	122	118	104
16	142	395	220	335	287	420	789	458	210	110	45	106
17	138	403	239	335	315	403	699	422	184	96	93	100
18	126	408	243	363	311	359	846	404	215	76	140	106
19	124	390	275	363	299	343	564	395	215	230	126	102
20	27	340	251	408	299	347	528	323	200	210	116	25
21	37	305	371	454	295	343	480	415	116	98	114	27
22	132	263	489	371	283	347	456	490	116	98	114	85
23	116	305	467	560	271	387	426	418	154	93	43	71
24	126	303	424	637	255	408	395	331	136	100	30	69
25	182	303	383	494	275	379	387	319	120	92	100	62
26	250	400	383	489	275	403	413	379	128	18	95	60
27	144	445	323	683	255	489	422	383	190	16	97	25
28	146	350	291	736	235	574	485	343	130	94	93	28
29	220	320	303	637	225	531	579	307	155	93	92	74
30	215	295	283	526	-	517	523	291	171	96	23	80
31	198	-	412	458	-	555	-	291	-	66	25	-
Total	4,174	14,441	9,841	12,855	10,598	11,390	23,004	11,989	8,932	3,116	2,675	2,339
Mean	135	481	317	414	365	367	787	384	298	101	85.3	78.0
(f)	-3.2	+58.2	-0.9	+10.9	-4.0	+2.2	+63.1	-25.0	-26.3	-24.9	-19.8	-28.5

Adjusted for change in reservoir contents

Mean	132	539	316	425	361	369	830	359	272	76.1	66.5	49.5
Cfs/m	1.26	5.13	3.01	4.05	3.44	3.51	7.90	3.42	2.59	0.725	0.653	0.471
In.	1.45	5.72	3.47	4.67	3.71	4.05	8.81	3.94	2.89	0.84	0.73	0.53
				Observed				Adjusted				
Calendar year 1951:	Max	1,450	Min	27	Mean	265	Mean	263	Cfs/m	2.50	In.	33.99
Water year 1951-52:	Max	2,120	Min	16	Mean	315	Mean	315	Cfs/m	3.00	In.	40.81

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Square Pond and Mousam and Estes Lakes.

Note.--No gage-height record Feb. 26 to Mar. 10, Sept. 22-30; discharge estimated on basis of weather records and recorded range in stage.

## Salmon Falls River near South Lebanon, Maine

Location.--Lat 43°19'40", long. 70°55'40", on left bank at Stair Falls, 1½ miles south of South Lebanon, York County, and 2½ miles upstream from Little River.

Drainage area.--147 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 179.60 ft above mean sea level, datum of 1929.

Average discharge.--23 years (1929-52), 230 cfs.

Extremes.--Maximum discharge during year, 2,440 cfs Apr. 7 (gage height, 7.97 ft); minimum, 10 cfs Sept. 15 (gage height, 1.11 ft).

1928-52: Maximum discharge, 5,490 cfs Mar. 19, 1936 (gage height, 12.31 ft); minimum, 4.7 cfs Aug. 28, 1950.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage-height (feet)
696.....	1930	Mar. 27, 1930	1,780	5.84
711.....	1931	June 10, 1931	1,400	4.90
741.....	1933	Apr. 19, 1933	4,090	10.04

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

Flow partly regulated by powerplants above station and by Great East and Lovell Lakes and Horn, Wilsons and Milton Ponds (also controls Northeast and Town House Ponds), combined capacity, 1,280,000,000 cu ft.

Revisions.--W 1301: 1929-37, 1939-50 (adjusted monthly runoff in inches).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	240	340	575	640	320	540	540	188	81	85	16
2	205	230	390	475	535	340	865	435	1,070	77	66	74
3	210	800	395	465	525	370	800	360	1,430	85	24	97
4	176	1,500	350	450	640	325	750	335	1,090	57	57	90
5	138	*1,000	315	455	935	305	850	260	750	20	86	83
6												
7	114	855	435	540	*880	300	2,250	250	455	23	*84	90
8	36	785	425	550	770	300	2,360	275	355	20	88	32
9	240	1,600	380	545	715	280	*2,050	265	500	32	74	43
10	240	1,300	440	495	605	280	1,860	250	265	66	53	70
11	190	830	425	480	595	265	1,430	182	240	90	36	68
12												
13	200	560	420	455	595	345	1,380	138	265	65	92	68
14	176	425	415	450	560	545	1,320	755	240	49	110	68
15	138	355	410	460	660	545	1,200	*1,300	230	85	134	79
16	65	355	405	470	710	505	1,240	1,100	210	90	114	30
17	150	390	395	465	640	455	1,360	740	46	60	96	46
18												
19	215	385	380	495	475	475	1,280	540	176	46	57	77
20	215	415	*450	490	455	420	1,110	435	200	81	41	81
21	205	400	395	485	445	405	715	405	188	100	95	83
22	205	395	400	475	465	405	705	375	172	52	89	70
23	100	375	405	495	465	410	600	340	176	24	81	97
24												
25	49	350	475	495	485	410	630	505	146	68	78	59
26	132	310	595	495	455	405	620	470	43	92	76	100
27	215	330	510	535	410	465	585	410	68	74	67	79
28	205	365	460	515	400	455	435	350	138	81	53	79
29	360	360	430	530	425	445	265	380	100	59	79	74
30												
31	290	420	440	460	365	485	240	460	97	32	83	66
32	130	455	430	495	360	590	176	445	116	36	74	81
33	90	365	485	540	360	610	395	390	146	130	74	26
34	265	565	535	510	345	530	565	360	35	95	77	102
35	275	330	420	535	-	575	545	265	52	70	100	86
36	250	-	560	575	-	570	-	245	-	70	32	-
Total	5,595	16,825	13,300	15,455	15,915	13,115	28,921	13,560	8,987	2,010	2,355	2,116
Mean	180	561	429	499	549	423	964	437	300	64.8	76.0	70.5
(†)	-16.0	+127	-21.4	-51.7	-149	+55.3	+209	-1.3	-25.6	-52.1	-59.6	-47.5

Adjusted for change in reservoir contents

Mean	164	688	408	447	400	478	1,173	436	274	12.7	16.4	23.0
Cfsm	1.12	4.68	2.78	3.04	2.72	3.25	7.98	2.97	1.86	0.086	0.112	0.156
In.	1.29	5.22	3.20	3.50	2.93	3.75	8.90	3.42	2.08	0.10	0.13	0.17
Observed												
Calendar year 1951:	Max	2,260	Min	20	Mean	343	Mean	346	Cfsm	2.35	In.	32.00
Water year 1951-52:	Max	2,360	Min	16	Mean	377	Mean	374	Cfsm	2.54	In.	34.69

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Great East and Lovell Lakes and Horn, Wilsons and Milton Ponds (controls also Northeast and Town House Ponds).

Note.--No gage-height record Nov. 3-5, Dec. 1-4, 10-15, July 14, 15, Aug. 5-25; discharge estimated on basis of weather records and recorded range in stage.

## Oyster River near Durham, N. H.

Location.--Lat 43°08'55", long. 70°58'00", on left bank 200 ft upstream from bridge on U. S. Highway 4, 2½ miles west of Durham, Strafford County, and 7 miles upstream from mouth.

Drainage area.--12.1 sq mi.

Records available.--December 1934 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 70 ft (from topographic map).

Average discharge.--17 years (1935-52), 18.3 cfs.

Extremes.--Maximum discharge during year, 389 cfs Apr. 6 (gage height, 3.29 ft); minimum, 1.2 cfs Aug. 4.

1934-52: Maximum discharge, 548 cfs Mar. 19, 1936 (gage height, 7.45 ft), by computation of flow over dam; minimum, 0.39 cfs Aug. 9-11, 1949.

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.12	1.2	1.0	36
.2	2.15	1.5	82
.3	3.9	2.0	144
.5	9.2	2.5	222
.7	17	3.0	321

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.15	17	24	58	43	16	70	43	39	6.3	1.55	1.65
2	2.15	19	24	57	41	16	145	34	120	5.4	1.4	6.7
3	2.2	185	21	50	44	b15	136	28	81	4.1	1.35	4.0
4	2.3	160	20	43	80	b15	118	25	56	3.5	1.25	2.8
5	2.35	93	22	36	124	16	159	22	61	3.1	1.8	2.2
6	2.3	62	42	34	103	24	321	20	44	2.7	3.0	1.95
7	2.45	157	*58	32	77	30	161	20	34	2.35	3.9	1.7
8	17	196	33	31	58	28	115	18	27	2.15	2.6	1.55
9	8.6	117	35	b28	51	27	91	16	22	2.05	2.0	1.55
10	5.8	78	36	b26	46	25	76	15	19	3.0	2.9	1.45
11	5.2	62	28	25	43	45	67	15	16	9.2	5.2	1.45
12	9.9	50	24	23	*41	96	57	154	15	5.8	2.8	1.4
13	8.2	43	18	23	30	89	50	109	13	4.1	8.7	1.35
14	6.6	40	15	22	24	76	75	68	11	3.2	4.2	1.3
15	5.9	44	13	23	21	68	78	50	9.8	2.6	2.8	*1.3
16	5.4	43	14	32	19	62	62	58	8.4	2.15	2.35	1.45
17	5.0	54	b19	31	18	53	48	51	7.7	1.85	1.9	1.4
18	4.9	44	b24	39	16	50	41	40	7.1	1.75	7.9	1.3
19	4.8	36	b52	42	19	*48	35	34	6.6	2.0	4.9	3.4
20	4.4	29	b25	47	20	43	31	28	6.0	1.85	3.8	4.6
21	4.0	25	64	53	20	45	27	69	5.4	1.8	3.1	2.5
22	3.9	22	72	43	20	49	24	53	4.9	1.8	2.8	1.85
23	3.8	25	58	69	19	58	*23	*40	4.6	1.65	2.45	1.75
24	3.9	34	51	68	18	58	20	30	4.2	1.45	2.15	1.85
25	4.8	30	42	53	b17	58	22	29	4.5	1.35	1.85	1.75
26	28	58	38	59	b17	75	46	54	5.2	1.35	1.75	1.7
27	20	b57	35	89	18	93	37	43	*8.4	1.55	1.65	2.0
28	19	b40	b31	93	17	93	61	31	5.6	1.8	1.55	1.8
29	26	34	b28	80	15	81	82	27	5.9	1.45	1.45	1.65
30	*19	27	b28	66	-	76	62	28	9.2	*1.3	1.45	1.55
31	16	-	b56	53	-	72	-	23	-	1.35	1.4	-
Total	299.20	1,881	1,010	1,428	1,079	1,600	2,340	1,275	661.5	86.00	105.00	62.90
Mean	9.65	62.7	32.6	46.1	37.2	51.6	78.0	41.1	22.0	2.77	3.59	2.10
Cfsm	0.798	5.18	2.69	3.81	3.07	4.26	6.45	3.40	1.82	0.229	0.280	0.174
In.	0.92	5.78	3.10	4.39	3.32	4.92	7.19	3.92	2.03	0.26	0.32	0.19

Calendar year 1951: Max 196 Min 1.55 Mean 26.8 Cfsm 2.21 In. 30.03  
 Water year 1951-52: Max 321 Min 1.25 Mean 32.3 Cfsm 2.67 In. 36.34

Peak discharge (base, 170 cfs).--Nov. 3 (10 a.m.) 251 cfs (2.66 ft); Nov. 7 (5 p.m.) 365 cfs (3.19 ft); Apr. 2 (5:30 p.m.) 179 cfs (2.245 ft); Apr. 6 (1 a.m.) 389 cfs (3.29 ft); May 12 (10 a.m.) 259 cfs (2.695 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Lamprey River near Newmarket, N. H.

Location.--Lat 43°06'05", long. 70°57'20", on right bank 200 ft upstream from Packers Falls, 2 miles northwest of Newmarket, Rockingham County, and 4.6 miles upstream from mouth.

Drainage area.--183 sq mi.

Records available.--July 1934 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 40 ft (from topographic map).

Average discharge.--18 years, 270 cfs.

Extremes.--1935-36: Maximum discharge during water year, 5,490 cfs Mar. 20 (gage height 14.88 ft); minimum daily, about 1 cfs Oct. 21, 1935.

1951-52: Maximum discharge during water year, 2,780 cfs Apr. 7 (gage height, 8.87 ft), from rating curve extended above 1,700 cfs on basis of computation of flow over dam at gage height 14.69 ft; minimum daily, 6.0 cfs Sept. 17.

1934-52: Maximum discharge, 5,490 cfs Mar. 20, 1936 (gage height, 14.88 ft), from rating curve extended above 2,600 cfs by method explained above; minimum daily, about 1 cfs Oct. 21, 1935.

Remarks.--Records excellent except those below 150 cfs, which are good, and those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Pawtuckaway and Mendums Ponds (combined capacity, about 600,000,000 cu ft).

Revisions.--Revised figures of discharge for the water years 1936 (complete daily table given below) and 1937, superseding those published in Water-Supply Papers 801 and 821, are given herewith:

Discharge, in cubic feet per second, water year October 1935 to September 1936

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	18	323	33	150	258	830	265	73	94	92	19
2	23	31	283	30	140	239	764	263	72	75	79	18
3	24	38	226	157	135	239	1,010	256	67	66	76	28
4	25	36	158	368	135	232	1,090	330	56	65	73	15
5	20	53	120	396	130	239	1,050	355	57	62	69	20
6	19	46	104	462	125	241	1,120	330	49	60	73	18
7	20	44	90	410	135	230	1,250	294	62	57	82	20
8	21	44	90	325	160	224	1,290	263	75	52	72	55
9	14	38	94	278	185	234	1,170	238	73	60	68	56
10	15	38	129	375	190	283	950	222	73	82	65	55
11	19	40	153	396	175	378	870	216	71	188	84	50
12	16	49	169	368	185	1,640	950	217	79	180	62	30
13	13	50	147	341	180	2,770	890	279	101	147	57	24
14	13	59	140	318	190	3,500	770	305	86	118	52	22
15	64	60	126	340	208	3,540	684	318	92	96	49	21
16	18	59	188	1,330	245	2,760	652	272	110	71	46	22
17	3	58	214	1,070	320	2,410	838	234	123	61	43	21
18	4	64	174	910	382	2,790	605	218	115	58	41	21
19	4	74	181	646	368	4,250	544	202	104	58	34	35
20	2	78	158	383	368	5,270	499	228	97	57	30	36
21	1	83	113	305	368	4,690	469	182	102	68	28	33
22	2	90	79	295	368	4,060	454	163	82	71	36	43
23	17	98	80	298	341	3,810	425	147	73	66	37	32
24	27	101	79	267	320	3,090	382	133	71	87	38	26
25	24	91	67	245	305	2,140	336	120	73	134	26	54
26	27	83	49	230	285	1,610	310	104	68	139	24	80
27	25	74	44	215	276	1,390	290	97	66	116	21	75
28	20	77	40	195	276	1,530	274	106	61	126	19	75
29	17	280	36	180	267	1,450	267	91	72	121	23	68
30	23	295	35	170	-	1,290	269	86	75	96	27	73
31	22	-	35	160	-	1,050	-	78	-	92	25	-
Total	567	2,231	3,924	11,496	6,892	57,835	21,100	6,614	2,378	2,823	1,551	1,143
Mean	18.3	74.4	127	371	238	1,868	703	213	79.3	91.1	50.0	38.1
Cfs/m	0.100	0.407	0.694	2.03	1.30	10.2	3.84	1.16	0.433	0.498	0.273	0.208
In.	0.12	0.45	0.80	2.34	1.40	11.76	4.28	1.24	0.48	0.57	0.32	0.23
Calendar year 1935: Max	1,780			Min	1	Mean	259	Cfs/m	1.42	In.	19.21	
Water year 1935-36: Max	5,270			Min	1	Mean	324	Cfs/m	1.77	In.	23.99	

Note.--Stage-discharge relation affected by ice Jan. 25 to Feb. 14.

## Lamprey River near Newmarket, N. H.--Continued

Revised figures of discharge, in cubic feet per second, 1936-37

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1937		1937		1937		1937	
June 1.....	210	June 29.....	138	July 27.....	54	Aug. 24.....	144
2.....	170	30.....	123	28.....	49	25.....	134
3.....	149	July 1.....	113	29.....	37	26.....	128
4.....	326	2.....	100	30.....	36	27.....	134
5.....	330	3.....	92	31.....	35	28.....	138
6.....	305	4.....	84	Aug. 1.....	45	29.....	128
7.....	261	5.....	78	2.....	75	30.....	116
8.....	246	6.....	73	3.....	115	31.....	110
9.....	238	7.....	79	4.....	118	Sept. 1.....	104
10.....	232	8.....	73	5.....	92	2.....	96
11.....	234	9.....	71	6.....	72	3.....	92
12.....	222	10.....	66	7.....	61	4.....	88
13.....	208	11.....	68	8.....	68	5.....	91
14.....	180	12.....	50	9.....	102	6.....	92
15.....	167	13.....	48	10.....	122	7.....	99
16.....	154	14.....	66	11.....	194	8.....	113
17.....	140	15.....	62	12.....	257	9.....	108
18.....	156	16.....	61	1.....	263	10.....	94
19.....	281	17.....	56	14.....	246	11.....	96
20.....	238	18.....	60	15.....	216	12.....	80
21.....	210	19.....	40	16.....	192	13.....	81
22.....	294	20.....	52	17.....	170	14.....	167
23.....	294	21.....	56	18.....	159	15.....	165
24.....	244	22.....	56	19.....	148	16.....	164
25.....	196	23.....	45	20.....	142	17.....	126
26.....	161	24.....	40	21.....	129	18.....	100
27.....	150	25.....	39	22.....	141	19.....	85
28.....	148	26.....	39	23.....	151	20.....	80
						21.....	74

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
June 1937.....	6,405	330	123	214	1.17	1.30
July.....	1,878	113	35	60.6	.331	.38
August.....	4,310	263	45	139	.760	.88
September.....	2,875	167	64	95.8	.523	.58
Water year 1936-37.....	108,690	1,840	13	298	1.63	22.08
Calendar year 1937.....	130,376	2,020	10	357	1.95	26.49

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	244	b345	571	718	345	798	770	378	133	52	20
2	33	248	324	646	667	356	1,100	611	931	122	49	30
3	53	874	300	658	655	330	1,370	504	1,170	118	44	50
4	100	1,470	349	614	789	324	1,410	440	1,040	104	33	45
5	101	1,830	374	560	1,130	321	1,500	396	907	80	23	38
6	101	*1,610	455	496	1,180	374	2,360	365	712	72	36	30
7	101	1,330	*475	470	1,110	413	2,720	360	579	66	43	24
8	170	1,680	496	442	920	423	2,480	378	450	59	41	19
9	164	1,580	480	420	770	430	1,720	365	376	54	38	16
10	157	1,360	475	401	667	428	1,230	343	341	53	38	13
11	154	990	440	380	611	492	986	328	345	113	53	11
12	185	703	b400	356	568	809	837	838	352	124	43	9.5
13	189	568	b335	363	b425	882	724	921	324	107	60	8.5
14	187	498	b240	394	b410	960	757	876	319	100	74	7.5
15	176	509	b185	390	b390	896	886	712	305	94	62	7.0
16	161	511	b220	428	b385	792	907	602	282	89	62	6.2
17	131	588	b275	450	369	670	809	520	315	85	137	6.0
18	110	554	b285	511	294	591	667	470	313	81	136	6.2
19	102	504	b365	565	347	*580	571	410	282	81	111	14
20	88	440	b390	585	387	496	511	380	259	77	93	30
21	66	374	564	b650	387	496	455	450	242	74	72	23
22	60	330	697	602	371	517	418	550	231	72	58	18
23	55	332	706	745	365	579	*583	*463	231	70	46	18
24	52	390	72	798	349	628	358	418	224	66	41	19
25	260	408	640	742	338	643	343	371	215	63	35	19
26	321	498	535	754	334	721	504	491	188	60	32	17
27	317	565	462	918	358	854	527	501	*177	60	29	17
28	294	b425	408	896	367	978	625	468	156	59	27	16
29	309	b450	385	820	358	990	865	396	146	55	23	15
30	278	b390	376	900	-	807	868	371	187	*53	21	13
31	262	-	496	851	-	844	-	343	-	52	20	-
Total	4,774	22,253	13,198	18,396	16,019	19,029	29,689	15,431	11,957	2,496	1,638	585.9
Mean	154	742	426	593	552	614	990	498	399	80.5	52.8	18.9
Cfsm	0.842	4.05	2.33	3.24	3.02	3.36	5.41	2.72	2.18	0.440	0.289	0.103
In.	0.97	4.52	2.68	3.74	3.26	3.87	6.03	3.14	2.43	0.51	0.33	0.12
Calendar year 1951: Max	1,830	Min	29	Mean	378	Cfsm	2.07	In.	28.06			
Water year 1951-52: Max	2,720	Min	6.0	Mean	425	Cfsm	2.32	In.	31.60			

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record May 17-22, Aug. 30 to Sept. 15; discharge estimated on basis of weather records and records for Oyster River near Durham and Clark Brook at Auburn. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## East Branch Pemigewasset River near Lincoln, N. H.

Location.--Lat 44°03'40", long. 71°37'00", on right bank 1 1/8 miles downstream from Hancock Branch and 2 1/2 miles northeast of Lincoln, Grafton County.

Drainage area.--104 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,020 ft (from topographic map).

Average discharge.--24 years, 298 cfs.

Extremes.--Maximum discharge during year, 10,600 cfs June 1 (gage height, 8.85 ft), from rating curve extended above 6,200 cfs on basis of computation of flow over dam at gage height 10.3 ft; minimum daily, 38 cfs Aug. 29-31.  
1928-52: Maximum discharge, 17,000 cfs Mar. 19, 1936 (gage height, 9.80 ft), by computation of peak flow over dam; maximum gage height, 10.51 ft Mar. 9, 1942 (ice jam); minimum daily discharge, 13 cfs Feb. 7-12, 1948.

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

Revisions.--W 726: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 23

Apr. 24 to Sept. 30

3.5	78	5.0	940	3.1	38	5.0	980
3.7	132	5.5	1,540	3.3	84	5.5	1,540
4.1	281	6.0	2,340	3.6	159	6.0	2,340
4.5	516	6.5	3,360	4.0	300	6.5	3,360
				4.5	570		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	*221	180	240	160	82	*96	1,050	2,370	130	58	42
2	138	180	185	260	175	80	323	845	2,720	120	54	133
3	135	2,730	*165	210	165	*80	322	738	335	112	51	139
4	129	1,500	165	170	165	80	218	633	696	107	51	142
5	124	702	303	145	260	80	247	558	605	102	86	91
6	118	516	1,280	150	220	84	788	558	498	93	88	74
7	118	618	637	125	180	82	552	760	558	88	65	67
8	757	1,370	524	110	155	80	391	720	456	*86	58	60
9	582	720	435	*115	160	78	358	872	412	81	54	58
10	268	531	368	130	150	78	424	953	360	81	56	56
11	237	454	300	115	140	110	577	1,040	355	159	84	56
12	218	391	250	115	130	190	488	2,820	417	107	72	51
13	194	352	200	115	110	125	416	1,720	370	88	72	49
14	180	354	160	110	115	94	711	1,180	309	79	60	51
15	170	488	180	150	115	90	1,130	953	275	77	51	51
16	163	369	160	280	120	85	877	953	248	81	56	65
17	154	352	150	190	115	95	859	792	244	72	205	58
18	148	306	170	240	115	86	1,060	696	280	67	116	51
19	141	265	200	210	115	81	1,280	680	229	88	81	60
20	132	235	190	180	110	81	2,600	696	209	79	70	74
21	126	215	315	150	105	86	1,740	1,170	183	72	65	58
22	124	205	380	115	100	101	1,260	1,180	189	74	65	51
23	118	240	310	270	96	99	2,720	890	154	87	63	51
24	118	315	240	250	94	91	1,550	768	143	65	60	56
25	440	240	200	160	92	88	1,150	813	154	58	54	54
26	237	215	190	190	92	96	1,130	1,370	266	54	*51	54
27	184	200	170	280	90	129	1,360	899	326	81	44	79
28	170	170	155	240	88	121	*1,510	704	180	151	42	60
29	174	175	165	*190	86	104	1,920	640	154	*81	36	51
30	150	170	160	150	-	98	1,500	598	148	87	38	47
31	174	-	330	135	-	*99	-	516	-	63	38	-
Total	6,075	14,598	8,637	5,490	3,818	2,954	29,557	28,763	14,425	2,730	2,046	2,069
Mean	196	487	285	177	132	95.3	985	928	481	88.1	66.0	69.0
Cfsm	1.88	4.68	2.74	1.70	1.27	0.916	9.47	8.92	4.62	0.847	0.635	0.663
In.	2.17	5.22	3.16	1.96	1.37	1.06	10.57	10.29	5.16	0.98	0.73	0.74
Calendar year 1951: Max	2,730				Min 56		Mean 316		Cfsm 3.04		In. 41.26	
Water year 1951-52: Max	2,820				Min 38		Mean 332		Cfsm 3.19		In. 43.41	

Peak discharge (base, 3,900 cfs).--Nov. 3 (2 p.m.) 7,440 cfs (7.94 ft); May 12 (9:30 a.m.) 4,120 cfs (8.82 ft); June 1 (10 p.m.) 10,600 cfs (8.85 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 19 to Dec. 4, Dec. 11 to Mar. 13, Mar. 15-17.

## Pemigewasset River at Woodstock, N. H.

Location.--Lat 43°58'35", long. 71°40'50", on right bank 0.2 mile east of Woodstock, Grafton County, and 0.7 mile upstream from Eastman Brook.

Drainage area.--193 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 615 ft (from topographic map).

Average discharge.--13 years, 513 cfs.

Extremes.--Maximum discharge during year, 18,400 cfs June 1 (gage height, 11.19 ft), from rating curve extended above 9,300 cfs by logarithmic plotting; minimum, 60 cfs Aug. 30; minimum daily, 69 cfs Aug. 30.

1939-52: Maximum discharge, 22,800 cfs Nov. 26, 1950 (gage height, 12.05 ft), from rating curve extended above 9,300 cfs by logarithmic plotting; minimum daily, 42 cfs Feb. 11, 1948.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some diurnal fluctuation caused by powerplant above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	66	5.0	1,620
2.5	123	6.0	2,850
3.0	269	7.0	4,550
3.5	477	8.0	6,800
4.0	780		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*242	*382	314	421	300	175	*262	1,580	4,020	210	95	76
2	223	329	322	454	320	167	326	1,220	5,370	187	92	354
3	216	5,220	*288	370	305	167	951	1,040	1,920	170	82	276
4	210	2,640	284	306	*306	*167	652	887	1,330	162	88	275
5	204	1,230	526	270	492	170	814	752	1,170	159	116	159
6	195	855	2,790	280	426	172	2,240	745	903	143	170	123
7	190	1,020	1,250	230	341	170	1,420	1,140	1,050	136	114	110
8	1,810	2,590	983	205	299	167	1,110	1,070	825	128	101	103
9	808	1,240	773	215	306	162	1,020	1,250	690	*126	88	92
10	497	887	639	235	284	162	1,180	1,390	578	116	90	90
11	412	724	480	210	269	206	1,510	1,480	545	221	126	92
12	370	614	450	*210	250	410	1,200	4,270	690	172	123	90
13	326	539	340	215	210	288	999	3,040	639	136	130	82
14	295	528	280	200	220	229	2,020	1,900	492	119	114	82
15	284	935	320	260	225	210	2,850	1,480	426	110	95	84
16	262	645	280	500	230	185	2,080	1,620	374	119	90	101
17	255	608	270	350	225	190	1,920	1,260	345	108	574	99
18	242	513	300	440	220	184	2,450	1,030	390	99	280	88
19	229	449	350	380	220	178	2,740	951	333	112	164	93
20	216	395	320	320	215	181	5,020	943	306	128	128	123
21	204	361	570	260	210	190	3,490	1,900	269	105	108	101
22	204	341	700	205	205	235	2,440	2,050	245	103	101	92
23	201	386	530	500	200	245	4,650	1,420	232	92	101	84
24	198	556	420	440	195	226	2,840	1,140	213	95	97	95
25	890	439	360	290	190	220	1,990	1,340	235	80	95	93
26	500	378	340	330	190	238	1,880	2,980	327	82	*86	93
27	366	349	300	520	187	370	2,320	1,560	712	125	82	138
28	314	295	270	440	187	361	*2,480	*1,140	318	420	80	112
29	345	310	290	310	181	291	3,040	991	252	*172	74	97
30	295	300	310	250	-	269	2,420	927	242	121	69	88
31	306	-	580	240	-	275	-	745	-	105	76	-
Total	11,309	26,058	16,229	9,856	7,408	6,858	60,914	45,241	26,041	4,361	3,829	3,585
Mean	365	869	524	318	255	221	2,030	1,459	868	141	124	120
Cfsm	1.89	4.50	2.72	1.65	1.32	1.15	10.5	7.56	4.50	0.731	0.642	0.622
In.	2.18	5.02	3.13	1.90	1.43	1.32	11.74	8.72	5.02	0.84	0.74	0.69

Calendar year 1951: Max 5,220 Min 120 Mean 573 Cfsm 2.97 In. 40.31  
 Water year 1951-52: Max 5,970 Min 69 Mean 606 Cfsm 3.14 In. 42.73

Peak discharge (base, 7,100 cfs).--Nov. 3 (3:45 p.m.) 12,600 cfs (9.83 ft); June 1 (11:30 p.m.) 18,400 cfs (11.19 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 29, 30, Dec. 11-31, Jan. 5 to Feb. 3, Feb. 12-23, Mar. 12, 15-17.

## Baker River at Wentworth, N. H.

Location--Lat 43°52'05", long. 71°54'35", on left bank 50 ft downstream from highway bridge in Wentworth, Grafton County, and 0.2 mile upstream from Pond Brook.

Drainage area--58.8 sq mi.

Records available--October 1940 to May 1952 (discontinued).

Gage--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Average discharge--11 years (1940-51), 106 cfs.

Extremes--Maximum discharge during period October to May, 2,100 cfs Nov. 3 (gage height, 6.57 ft), from rating curve extended above 1,500 cfs; minimum, 24 cfs Oct. 6.  
1940-52: Maximum discharge, 12,000 cfs June 14, 1942, by slope-area determination; maximum gage height, 14.82 ft June 14, 1942; minimum discharge, 5.2 cfs Mar. 1, 1944, Sept. 15, 1948.

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

Rating table, Oct. 1, 1951, to May 31, 1952, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.9	20	4.4	132
3.2	36	4.7	275
3.5	56	5.0	440
3.8	83	6.0	1,360
4.1	122		

Discharge, in cubic feet per second, October 1951 to May 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	62	68	94	74	44	119	185				
2	28	55	72	99	73	45	458	153				
3	28	342	68	86	70	42	414	134				
4	27	493	64	74	*78	42	320	119				
5	26	*226	187	76	135	40	620	106				
6	24	153	622	71	112	43	1,230	106				
7	26	223	268	58	92	44	631	151				
8	498	436	223	55	82	43	508	132				
9	159	214	177	60	76	43	*515	134				
10	91	149	151	63	72	42	*650	150				
11	74	124	113	55	72	70	712	146				
12	68	103	96	55	62	214	478	497				
13	58	93	64	56	52	124	375	336				
14	52	94	49	*55	54	88	895	226				
15	49	149	56	72	57	69	810	185				
16	46	118	54	118	58	65	658	238				
17	43	130	52	79	54	62	595	180				
18	41	106	54	107	52	58	687	141				
19	39	87	52	90	54	58	622	122				
20	37	75	54	80	52	58	838	112				
21	36	64	100	62	52	62	555	258				
22	34	65	155	52	51	77	414	238				
23	34	75	97	115	49	82	649	173				
24	34	132	80	86	48	78	375	136				
25	166	107	72	66	48	77	280	249				
26	92	91	70	76	48	92	280	534				
27	68	74	64	163	48	161	320	*253				
28	62	60	56	130	47	*164	346	173				
29	79	69	63	88	45	125	*389	165				
30	62	*85	63	64	-	120	267	157				
31	59	-	120	72	-	130	-	118				
Total	2,162	4,834	3,486	2,477	1,867	2,462	15,980	5,987				
Mean	69.7	161	112	79.9	64.4	79.4	533	193				
Cfsm	1.19	2.74	1.90	1.36	1.10	1.35	9.06	3.23				
In.	1.37	3.06	2.20	1.57	1.18	1.56	10.11	3.79				
Calendar year 1951: Max	1,520			Min	17			Cfsm	2.06	In.	27.95	
Water year 1951-52: Max	-			Min	-			Cfsm	-	In.	-	

Peak discharge (base, 1,600 cfs)--Nov. 3 (2 p.m.) 2,100 cfs (6.57 ft); Apr. 6 (2 a.m.) 1,970 cfs (6.48 ft); Apr. 14 (8 p.m.) 1,800 cfs (6.35 ft).

\* Discharge measurement made on this day.

Note--Stage discharge relation affected by ice Dec. 13-22, 24-30, Jan. 4-12, 17, 19-23, 25, 30, 31, Feb. 5-15, 17, 18, 24, 25, Mar. 2, 5, 14, 15.



## Baker River near Rumney, N. H.

Location.--Lat 43°47'45", long. 71°50'45", on right bank 0.3 mile upstream from Halls Brook and 1½ miles southwest of Rumney, Grafton County.

Drainage area.--143 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Concrete control since Sept. 10, 1938. Altitude of gage is 495 ft (from topographic map).

Average discharge.--24 years, 254 cfs.

Extremes.--Maximum discharge during year, 10,800 cfs June 2 (gage height, 10.74 ft), from rating curve extended above 1,500 cfs on basis of slope-area determinations at gage heights 13.03, 14.49, and 15.50 ft; minimum, 14 cfs Aug. 30 to Sept. 1.

1928-52: Maximum discharge, 21,400 cfs June 15, 1942 (gage height, 15.50 ft), from rating curve extended above 3,800 cfs on basis of slope-area determinations at gage heights 13.03, 14.49, and 15.50 ft; minimum, 6.5 cfs Dec. 4, 1947, caused by ice conditions upstream.

Maximum discharge known, 25,900 cfs Nov. 3, 1927 (gage height, 17.4 ft, from flood-marks), from rating curve extended above 3,800 cfs as described above.

Revisions.--The figures of maximum discharge for the water years 1929-33 have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
681.....	1929	May 3, 1929	4,650	7.52
711.....	1930	Apr. 7, 1930	8,000	9.32
711.....	1931	July 22, 1931	4,320	7.31
726.....	1932	Apr. 12, 1932	9,000	9.84
741.....	1933	Nov. 20, 1932	5,170	7.77

Remarks.--Records excellent except those above 2,000 cfs, which are good, and those for periods of ice effect, which are fair.

Revisions (water years).--W 726: Drainage area. W 781: 1934(M). Revised figures of discharge, in cubic feet per second, for the high-water period in the water year 1934, superseding figures published in Water-Supply Paper 756, are given herewith:

Apr. 12, 1934..... 4,800

Apr. 13, 1934..... 4,960

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April.....	4,960	432	1,464	10.24	11.43
Water year 1933-34.....	4,960	16	237	1.66	22.49
Calendar year 1934.....	4,960	16	254	1.78	24.11

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	153	170	270	185	*110	320	422	1,920	70	28	16
2	64	143	175	250	185	110	812	351	4,530	60	25	128
3	62	1,760	170	220	185	105	1,010	305	1,090	54	24	85
4	60	1,560	160	200	190	100	836	281	678	51	23	72
5	59	*717	307	185	*590	105	1,240	258	594	51	25	47
6	57	474	1,270	175	330	110	3,320	245	428	47	32	36
7	57	482	818	155	240	110	1,760	281	412	42	29	29
8	1,080	1,000	626	145	200	105	1,420	268	335	40	25	26
9	480	624	498	155	200	105	*1,370	254	281	39	23	24
10	266	434	468	160	180	105	*1,640	241	233	39	24	22
11	205	356	346	145	170	125	1,930	258	215	64	30	22
12	187	300	300	140	170	370	1,450	1,160	225	64	34	20
13	159	268	190	140	130	330	1,110	959	209	49	39	19
14	140	250	130	*135	140	240	2,040	580	169	39	33	19
15	129	340	140	155	145	190	2,580	462	143	34	26	18
16	120	300	135	260	145	170	1,830	545	123	33	24	22
17	112	335	130	200	135	160	1,690	428	120	34	38	25
18	107	290	135	240	130	150	1,980	351	140	30	47	23
19	99	245	130	250	135	150	1,960	300	117	32	33	23
20	95	200	135	210	130	150	2,570	272	109	40	28	30
21	90	170	180	170	130	160	1,850	551	92	36	24	28
22	85	157	330	135	125	190	1,220	510	81	33	23	24
23	85	191	280	240	125	210	1,560	395	74	30	22	24
24	83	290	220	240	120	200	1,070	315	68	29	20	28
25	316	295	180	165	120	200	748	416	107	28	19	28
26	251	240	175	190	120	210	664	1,140	*97	25	*18	26
27	180	200	160	310	120	360	678	*636	168	28	17	26
28	156	150	145	380	120	444	692	422	97	65	16	26
29	201	160	155	250	115	*356	*806	384	79	53	15	24
30	169	*170	155	175	-	325	587	395	81	*38	14	22
31	153	-	260	185	-	346	-	300	-	32	14	-
Total	5,377	12,254	8,673	6,230	4,770	6,101	42,743	13,665	13,013	1,309	792	962
Mean	173	408	280	201	164	197	1,425	441	434	42.2	25.5	32.1
Cfs/m	1.21	2.85	1.98	1.41	1.15	1.38	9.97	3.08	3.03	0.295	0.178	0.224
In.	1.40	3.19	2.26	1.62	1.24	1.59	11.12	3.55	3.58	0.34	0.21	0.25

Calendar year 1951: Max 3,740 Min 43 Mean 297 Cfs/m 2.08 In. 28.21

Water year 1951-52: Max 4,530 Min 14 Mean 317 Cfs/m 2.22 In. 30.15

Peak discharge (base, 3,800 cfs).--Nov. 3 (6 p.m.) 3,970 cfs (7.05 ft); Apr. 6 (4:30 to 5 a.m.) 4,410 cfs (7.36 ft); Apr. 14 (11 p.m.) 4,150 cfs (7.18 ft); June 2 (1:30 a.m.) 10,800 cfs (10.74 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 20, 21, Nov. 26 to Dec. 4, Dec. 13 to Mar. 27.

## Pemigewasset River at Plymouth, N. H.

Location.--Lat 43°45'35", long. 71°41'10", on right bank 150 ft downstream from bridge at Plymouth, Grafton County, and a third of a mile downstream from Baker River.

Drainage area.--622 sq mi.

Records available.--October 1903 to September 1952. Records for April 1886 to September 1903, published in Water-Supply Paper 124, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 457.07 ft above mean sea level, datum of 1929. Prior to Jan. 1, 1910, staff or chain gages at sites 150 and 200 ft upstream at present datum or datum 1.11 ft lower. Jan. 1, 1910, to Sept. 30, 1926, staff gage at site 200 ft upstream at present datum.

Average discharge.--49 years (1903-52), 1,356 cfs.

Extremes.--Maximum and minimum discharges for the water years 1904-11, 1913, 1915, 1919-27, 1929-31, and 1952, some of which have been revised, superseding figures published in the water-supply papers indicated, are contained in the following table:

Water-Supply Paper	Year	Maximum			Minimum	
		Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
-	1904	May 17, 1904	15,000	+10.7	Oct. 4, 1903 <sup>a</sup>	+155
-	1905	Mar. 29, 1905	18,500	+12.3	Dec. 4, 1904	+240
-	1906	Apr. 16, 1906	19,800	12.9	Sept. 22, 1906	+160
-	1907	May 1, 1907	15,900	+11.1	Oct. 7, 1906	+124
-	1908	Dec. 10, 1907	22,400	+14.0	July 18, 1908 <sup>b</sup>	+124
-	1909	Apr. 14, 1909	25,400	+15.2	Oct. 10, 19, 28, 1908	+124
-	1910	Mar. 26, 1910	12,900	+9.7	(c)	+270
-	1911	Apr. 15, 1911	17,400	+11.8	July 13, 1911	+80
-	1912	Apr. 23, 1912	15,200	+10.8	July 13, 1912	+208
471	1913	Mar. 28, 1913	27,400	+16.0	-	-
-	1914	Apr. 20, 1914	31,500	+17.5	-	-
-	1915	Feb. 25, 1915	d20,000	-	-	-
-	1916	May 18, 1916	17,000	+11.6	-	-
-	1917	June 18, 1917	19,200	+12.6	-	-
-	1918	Oct. 31, 1917	20,300	+13.1	-	-
501	1919	Mar. 29, 1919	d22,000	-	-	-
501	1920	Apr. 14, 1920	22,600	+14.1	-	-
521	1921	Oct. 1, 1920	19,700	+12.85	-	-
541	1922	Apr. 12, 1922	24,600	+14.9	-	-
561	1923	Apr. 29, 1929	34,600	+18.6	-	-
581	1924	Sept. 10, 1924	22,300	+13.95	-	-
601	1925	Mar. 29, 1925	27,300	+15.95	-	-
621	1926	May 4, 1926	17,800	+12.0	-	-
641	1927	Nov. 17, 1927	11,500	9.00	-	-
661	1929	May 3, 1929	22,900	14.21	-	-
696	1930	Apr. 8, 1930	20,400	13.14	-	-
711	1931	June 9, 1931	14,500	10.45	-	-
-	1952	June 2, 1952	27,400	14.86	Aug. 30 or 31, 1952	-

† From graph based on gage readings.

‡ Minimum daily.

<sup>a</sup> Also occurred on July 24, Sept. 11, 1904.

<sup>b</sup> Also occurred on several days in September.

<sup>c</sup> Occurred on several days in July, August, and September.

<sup>d</sup> Estimated.

1903-52: Maximum discharge, 65,400 cfs Mar. 19, 1936 (gage height, 29.0 ft, from floodmarks), from rating curve extended above 33,000 cfs on basis of computation of flow over dam at gage heights 23.0, 27.4, and 29.0 ft; minimum, 39 cfs Oct. 1, 3, 4, 1948; minimum daily, 45 cfs Sept. 20, 1923.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some diurnal fluctuation caused by powerplants above station.

Revisions (water years).--W 471: 1912, 1913 calendar years. W 726: Drainage area. See also Records available. Revised figures of discharge, in cubic feet per second, for the water years 1904-11 (complete daily tables given on following pages), 1913-14, 1917-18, 1920-25, superseding figures published in previous water-supply papers, are given herein:

Date	Discharge	Date	Discharge	Date	Discharge
1913		1920		1923	
Mar. 22....	21,900	Apr. 14....	18,900	Apr. 6....	8,570
26....	18,500	15....	6,720	7....	11,300
27....	7,140	17....	6,720	8....	13,800
28....	25,900	18....	6,440	9....	16,700
29....	7,890	21....	7,290	21....	7,740
Nov. 10....	13,100	22....	12,500	22....	14,600
		23....	9,280	23....	16,700
		24....	10,200	24....	7,590
Apr. 20....	17,800	29....	9,280	29....	27,700
21....	25,400	Dec. 6....	11,900	30....	27,400
22....	10,200	15....	14,600		
23....	8,590			1924	
30....	8,060	1922		Sept. 10....	11,900
		Apr. 9....	8,230	11....	10,500
		10....	11,500	Oct. 1....	13,300
1917		11....	17,400		
Mar. 28....	10,400	12....	21,200	1925	
29....	11,100	13....	11,500	Mar. 29....	20,300
30....	7,000	14....	6,720	30....	14,800
Oct. 31....	13,100	18....	8,230		
		19....	9,280		
1920					
Apr. 6....	8,740				

## Pemigewasset River at Plymouth, N. H.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1913, 1914, 1917, 1918, 1920-25

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1913.....	25,900	350	5,400	8.68	10.02
Water year 1913.....	25,900	60	1,500	2.41	32.81
November 1913.....	13,100	482	1,400	2.25	2.51
April 1914.....	25,400	1,560	5,170	8.51	9.27
Water year 1914.....	25,400	186	1,400	2.25	30.55
March 1917.....	11,100	430	1,790	2.88	5.32
Water year 1917.....	13,500	212	1,480	2.38	32.20
October 1917.....	13,100	245	983	1.58	1.82
Water year 1918.....	13,100	150	1,130	1.82	24.58
April 1920.....	18,900	1,770	5,730	9.21	10.28
Water year 1920.....	18,900	130	1,670	2.68	36.51
December 1920.....	12,100	665	2,500	4.02	4.63
Water year 1921.....	12,700	122	1,280	2.06	27.83
April 1922.....	21,200	1,950	5,390	8.67	9.67
Water year 1922.....	21,200	188	1,680	2.70	36.65
April 1923.....	27,700	660	6,980	11.22	12.52
Water year 1923.....	27,700	45	1,140	1.83	24.84
September 1924.....	11,900	181	1,690	2.72	3.04
Water year 1924.....	11,900	60	1,470	2.36	32.07
October 1924.....	13,300	353	1,180	1.90	2.18
March 1925.....	20,300	965	5,010	4.84	5.58
Water year 1925.....	20,300	138	1,450	2.33	31.62

Discharge, in cubic feet per second, water year October 1903 to September 1904

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	440	260	440	380	a490	a3,700	9,280	895	365	255	270
2	200	390	240	410	a360	a500	2,650	7,590	850	1,030	290	300
3	175	390	225	a390	a335	a495	a2,400	5,820	715	1,030	330	230
4	155	365	230	370	a330	470	a2,200	6,440	615	665	615	440
5	200	340	225	a350	320	a470	1,900	6,720	560	390	330	530
6	255	530	240	a330	a330	a470	1,480	5,650	785	370	330	300
7	530	645	255	a310	a360	460	4,440	4,440	1,010	345	260	300
8	270	530	280	300	450	a1,300	4,060	4,690	1,240	280	270	290
9	440	415	240	a320	a380	3,200	6,580	4,280	1,180	290	230	260
10	835	365	260	a340	a320	a2,800	10,200	5,260	835	260	225	260
11	560	390	270	360	a290	a2,400	7,590	8,230	665	255	225	155
12	440	340	280	a410	260	2,200	5,260	5,260	530	230	390	260
13	390	330	240	a440	a300	a2,000	4,120	3,780	510	270	365	200
14	390	300	240	a450	a360	1,900	3,150	5,200	470	310	280	200
15	340	320	225	445	460	a1,700	2,770	5,050	415	270	260	2,980
16	290	300	210	a430	a430	a1,500	2,400	7,740	340	230	340	3,200
17	290	350	210	a420	a400	a1,300	2,120	11,100	290	225	330	1,460
18	1,760	575	210	400	a385	a1,250	1,940	5,050	320	200	310	985
19	1,760	700	225	a380	375	1,150	2,240	5,750	300	220	300	700
20	835	595	390	a350	a360	a1,250	2,520	10,400	300	195	500	630
21	685	390	1,500	a355	a350	a1,450	2,080	5,490	320	200	5,480	850
22	615	390	2,300	370	380	1,700	2,080	3,930	340	190	1,940	895
23	500	365	1,700	a400	a425	a2,700	2,570	3,110	400	175	1,260	615
24	550	415	1,400	a440	a450	a3,500	3,740	2,610	340	155	895	560
25	500	550	1,100	500	a440	a4,400	5,590	2,160	330	190	630	3,800
26	400	500	920	a500	a410	5,500	7,000	1,940	320	190	510	1,880
27	415	500	820	a445	410	8,600	6,720	1,560	300	330	440	1,840
28	365	255	720	a440	a455	a7,400	7,440	1,480	290	630	340	1,240
29	320	225	600	430	460	6,500	9,280	1,350	310	365	300	1,030
30	390	260	520	a420	-	a5,600	10,700	1,110	330	510	280	6,580
31	390	-	460	a400	-	4,600	-	885	-	280	280	-
Total	15,285	12,260	16,975	12,345	10,965	79,455	130,920	149,455	16,105	10,645	18,790	33,240
Mean	493	409	548	398	378	2,560	4,360	4,820	537	343	606	1,110
Cfs/m	0.793	0.658	0.881	0.640	0.608	4.12	7.01	7.75	0.863	0.551	0.974	1.78
In.	0.91	0.73	1.01	0.74	0.66	4.75	7.83	8.94	0.96	0.64	1.12	1.99

Calendar year 1903: Max - Min - Mean - Cfs/m - In. -  
Water year 1903-4: Max 11,100 Min 155 Mean 1,360 Cfs/m 2.22 In. 30.28

a No gage-height record; discharge estimated on basis of observer's notes, weather records, and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 13 to Apr. 5. Winter discharge and calendar- and water-year figures not previously published.

## Pemigewasset River at Plymouth, N. H.--Continued

Discharge, in cubic feet per second, water year October 1904 to September 1905

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,120	870	440	340	a350	a440	7,000	2,670	740	875	2,610	1,700
2	2,860	785		340	350	440	4,180	2,060	658	875	1,350	1,350
3	2,060	770	440	320	a350	a415	2,320	1,700	614	4,680	875	3,170
4	1,580	715	240	320	a330	a415	2,670	2,420	638	2,240	686	9,100
5	1,240	670	440	300	a330	a390	2,420	2,550	614	1,350	590	6,440
6	1,080	630	300	a300	a350	a390	4,310	2,180	1,350	992	522	3,680
7	940	630	340	a390	a355	a365	5,070	3,610	1,700	875	500	2,480
8	920	560	340	770	a380	a365	3,480	3,110	1,080	740	500	1,700
9	770	530	320	1,450	400	365	2,920	2,300	950	638	455	1,300
10	810	440	365	1,650	a400	a390	2,920	2,180	740	638	500	950
11	870	415	320	1,400	a400	a440	4,240	1,700	638	545	410	740
12	985	440	340	a1,250	a380	a470	4,440	1,460	805	522	410	1,040
13	870	390	260	a1,150	a370	a440	4,180	1,350	2,860	686	370	2,550
14	920	580	340	a1,050	a360	a440	3,550	1,240	1,700	568	410	1,460
15	785	390	300	940	a350	a415	5,420	1,240	1,130	568	370	950
16	700	440	300	a810	340	415	2,610	1,820	875	500	568	805
17	630	340	340	a700	a340	a390	2,180	1,640	740	455	1,350	740
18	530	415	300	a620	a335	a415	1,760	1,940	686	590	686	4,950
19	630	415	390	560	a330	a440	1,460	2,000	638	500	545	7,890
20	530	440	365	a520	a330	a2,900	1,400	1,700	590	686	410	3,550
21	1,240	530	365	a495	a330	1,760	2,240	1,350	614	545	410	4,240
22	7,590	700	300	500	a340	a1,550	5,850	1,130	1,400	478	347	2,610
23	4,180	560	300	a460	365	1,080	3,680	950	1,130	390	370	1,700
24	2,040	440	365	a460	a390	a340	2,670	875	1,305	390	324	1,350
25	1,480	440	340	a450	a415	850	2,550	772	662	410	324	1,080
26	1,400	500	300	420	a415	6,100	2,560	740	992	347	324	1,040
27	2,520	595	320	a400	a415	6,800	2,800	912	5,070	370	545	912
28	1,720	595	390	a400	a440	10,800	3,050	950	2,480	370	875	805
29	1,290	560	390	a375	-	15,200	3,050	840	1,700	370	614	740
30	1,180	500	390	a375	-	8,920	2,800	805	1,130	324	455	686
31	1,010	-	365	a375	-	10,000	-	805	-	3,600	2,180	-
Total	49,480	16,265	10,745	19,890	10,240	74,540	98,180	50,999	35,709	27,327	20,885	71,708
Mean	1,600	542	347	642	366	2,400	3,270	1,650	1,190	882	674	2,309
Cfsm	2.57	0.871	0.558	1.03	0.588	3.86	5.26	2.65	1.91	1.42	1.08	3.84
In.	2.96	0.97	0.64	1.19	0.61	4.46	5.87	3.05	2.14	1.63	1.25	4.29

Calendar year 1904: Max 11,100 Min 155 Mean 1,470 Cfsm 2.36 In. 32.20

Water year 1904-5: Max 16,200 Min 240 Mean 1,350 Cfsm 2.14 In. 29.06

a No gage-height record; discharge estimated on basis of observer's notes, weather records, and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 25 to Mar. 28. Winter discharge and calendar- and water-year figures not previously published.

Discharge, in cubic feet per second, water year October 1905 to September 1906

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	614	455	772	900	1,040	700	940	3,170	2,670	1,400	875	275
2	545	545	875	800	950	660	780	3,170	2,240	950	638	255
3	590	455	1,700	750	875	600	860	3,300	2,300	740	545	235
4	568	522	5,070	800	760	560	1,150	3,680	1,620	772	500	275
5	545	638	2,360	1,000	700	600	1,400	3,300	1,460	1,350	432	324
6	522	662	1,880	1,130	700	640	2,800	3,050	2,000	875	390	255
7	455	686	1,350	900	630	540	1,820	2,730	4,440	662	370	235
8	455	740	1,130	750	600	430	1,400	2,500	3,050	590	324	235
9	478	713	950	720	560	430	1,350	2,670	3,110	545	347	218
10	455	638	772	760	560	430	1,130	5,460	2,180	590	324	235
11	410	590	700	780	580	420	1,130	3,420	2,000	545	324	202
12	1,130	568	800	760	550	380	1,300	2,920	1,460	500	324	202
13	1,760	568	790	740	580	420	1,400	4,950	1,180	455	300	235
14	2,060	590	700	780	590	400	2,360	4,060	1,040	410	324	235
15	1,460	545	700	760	500	420	9,460	2,600	640	590	275	218
16	805	545	780	790	630	360	16,100	2,550	740	370	255	235
17	590	500	780	840	600	350	8,230	2,800	772	410	235	202
18	522	432	740	840	660	320	7,440	4,500	1,820	500	235	202
19	590	390	740	760	640	420	5,850	3,480	1,240	410	218	202
20	772	370	760	760	620	420	5,460	2,420	875	370	202	173
21	950	478	790	760	600	350	6,440	1,820	713	370	218	173
22	772	545	820	1,000	600	320	6,580	1,580	638	875	235	160
23	638	432	850	3,500	1,000	300	4,950	1,240	805	545	202	173
24	614	432	820	8,300	840	260	3,360	1,350	3,550	410	235	202
25	522	455	760	5,000	800	300	2,480	2,060	1,940	410	275	173
26	522	638	720	3,110	760	320	2,180	2,420	1,580	370	235	173
27	545	662	700	2,460	1,100	340	2,180	4,180	912	324	255	173
28	590	545	700	1,840	760	580	2,240	14,490	740	324	1,760	173
29	432	638	700	1,400	-	1,700	2,060	10,700	713	324	590	202
30	410	2,180	1,300	950	-	1,800	2,610	5,460	875	805	370	173
31	478	-	1,020	1,130	-	1,600	-	3,680	-	2,420	324	-
Total	21,599	16,157	33,589	45,790	19,965	17,430	107,440	115,620	49,703	20,011	12,136	6,423
Mean	697	605	1,080	1,480	713	562	3,580	3,730	1,660	646	391	214
Cfsm	1.12	0.973	1.74	2.58	1.15	0.904	5.76	6.00	2.67	1.04	0.629	0.344
In.	1.29	1.09	2.01	2.74	1.19	1.04	6.42	6.91	2.97	1.20	0.73	0.38

Calendar year 1905: Max 15,200 Min 300 Mean 1,320 Cfsm 2.12 In. 28.88

Water year 1905-6: Max 16,100 Min 160 Mean 1,280 Cfsm 2.06 In. 27.97

Note.--Stage-discharge relation affected by ice Dec. 11 to Jan. 24, Feb. 4 to Apr. 6. Winter discharge and calendar- and water-year figures not previously published.

## MERRIMACK RIVER BASIN

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## Pemigewasset River at Plymouth, N. H.--Continued

Discharge, in cubic feet per second, water year October 1906 to September 1907

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	173	545	614	450	370	380	5,520	13,500	1,040	2,510	464	a165
2	188	500	568	1,130	a380	a395	3,170	7,590	950	1,900	390	a173
3	202	410	324	940	a400	a395	2,300	5,350	1,130	1,320	652	a173
4	188	410	380	880	a410	a380	2,240	4,500	1,350	854	a950	188
5	147	410	365	780	a400	a380	3,230	4,060	1,460	792	614	275
6	147	390	365	2,000	a365	a365	3,050	3,480	3,360	614	536	1,700
7	124	370	415	1,500	a365	a350	2,300	3,420	2,420	a545	390	614
8	147	370	380	1,200	380	350	2,300	3,680	1,820	536	424	a455
9	173	370	415	900	a395	a365	1,820	4,310	1,520	536	243	356
10	740	370	450	700	a395	a365	1,640	3,930	1,240	500	314	314
11	740	410	450	600	a380	a380	1,640	3,610	1,130	424	a290	275
12	522	410	415	a520	a350	a395	1,460	2,920	950	464	275	2,610
13	432	455	450	a480	a320	a415	1,640	2,670	875	740	275	912
14	347	410	450	a450	a350	a490	1,700	3,800	740	a590	314	614
15	300	390	490	a425	380	540	1,760	4,310	686	500	243	a545
16	300	370	450	a400	a380	a590	1,520	4,310	662	424	212	500
17	235	370	450	375	a365	a565	1,520	7,140	590	424	212	464
18	275	347	430	a375	a365	a540	1,580	4,620	590	390	a196	424
19	275	500	380	a400	a350	a590	1,580	3,740	545	314	188	390
20	370	1,290	365	a450	a335	a700	1,350	3,420	545	314	212	390
21	1,240	875	365	a440	a320	a735	1,460	2,420	875	a324	188	356
22	686	805	450	a410	290	a770	1,580	1,940	686	356	188	a333
23	545	713	415	a370	a290	850	2,860	1,580	590	314	188	314
24	452	658	a380	350	305	a1,050	8,230	1,350	478	424	165	854
25	590	590	a365	a350	a320	1,350	7,140	1,180	500	390	a173	1,130
26	2,480	545	a350	a390	a335	1,250	4,950	1,040	522	390	165	614
27	1,040	662	a335	a410	a350	1,100	9,100	1,240	950	976	165	576
28	805	950	350	a430	a365	1,800	5,200	1,580	912	a686	188	500
29	686	740	a365	a430	-	4,200	8,230	1,460	686	500	165	a1,700
30	590	455	a380	a430	-	8,500	9,460	1,240	740	424	165	7,140
31	568	-	a395	a370	-	7,440	-	1,040	-	500	a165	-
Total	15,687	16,070	12,758	19,335	10,010	37,975	101,530	110,410	30,542	19,975	9,309	25,054
Mean	506	536	611	624	358	1,220	3,380	3,560	1,020	644	300	835
Cfsm	0.814	0.862	0.661	1.00	0.576	1.96	5.43	5.72	1.64	1.04	0.482	1.34
In.	0.94	0.96	0.76	1.16	0.60	2.27	6.07	6.60	1.63	1.19	0.56	1.50

Calendar year 1906: Max 16,100 Min 124 Mean 1,200 Cfsm 1.93 In. 26.24

Water year 1906-7: Max 13,500 Min 124 Mean 1,120 Cfsm 1.80 In. 24.44

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 4 to Mar. 30. Winter daily discharge and water-year figures not previously published.

Discharge, in cubic feet per second, water year October 1907 to September 1908

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,710	2,920	a595	1,320	515	a697	2,610	8,060	2,920	243	275	212
2	1,700	2,400	614	1,220	a460	652	2,300	7,590	2,000	243	a259	212
3	1,320	17,400	614	1,050	450	740	1,700	4,140	1,800	243	243	188
4	1,220	11,500	576	976	450	740	1,320	6,860	1,220	212	243	188
5	2,820	4,600	536	a850	600	697	a1,050	5,460	912	a455	464	212
6	a1,700	3,450	536	770	600	652	1,220	4,080	740	390	6,860	a212
7	1,130	11,900	500	960	565	614	2,000	3,450	a672	356	2,300	212
8	1,400	7,290	a482	1,200	565	a576	3,130	3,760	614	356	1,220	188
9	6,720	4,180	464	2,300	a490	536	2,300	4,500	536	275	a840	142
10	2,920	a3,500	536	1,580	450	536	1,700	a4,000	500	243	652	142
11	2,000	2,820	18,900	1,100	420	500	2,400	3,550	500	212	536	a124
12	2,100	2,100	6,440	a940	420	576	a4,800	3,550	536	a215	1,800	165
13	a2,300	1,600	2,510	1,550	390	576	2,510	4,720	464	243	976	a142
14	1,800	1,400	2,300	1,400	355	614	1,800	3,650	a442	212	697	a124
15	1,320	1,220	a1,950	1,200	360	a740	1,900	3,340	424	188	576	212
16	976	976	1,700	1,000	11,000	1,800	4,600	12,300	536	188	a536	a124
17	912	a942	1,500	900	4,180	2,710	10,200	a4,200	1,320	165	500	165
18	854	912	1,320	820	2,510	1,600	2,100	2,300	976	a124	1,900	188
19	740	912	1,130	a760	1,900	1,220	a2,550	2,400	697	a500	1,500	188
20	a697	854	976	740	1,220	792	3,020	2,100	500	3,340	1,050	a165
21	652	792	912	620	1,320	652	2,000	1,500	a482	1,700	740	142
22	576	792	a854	680	1,130	a638	1,800	2,000	464	912	652	124
23	536	697	792	540	a976	1,300	1,600	5,230	390	1,050	a536	188
24	500	a740	5,460	520	854	1,900	5,030	a2,400	390	912	424	165
25	536	854	3,130	510	792	3,550	6,440	1,800	356	576	356	a124
26	500	854	1,130	a500	697	2,300	a8,230	1,400	356	a686	275	165
27	a686	792	1,320	490	740	2,400	10,400	1,130	314	500	314	a142
28	3,020	697	1,220	800	792	4,500	10,500	976	a314	424	275	a124
29	16,100	652	a1,170	690	740	a7,890	13,300	1,050	314	390	314	165
30	10,000	576	1,130	735	-	4,600	6,860	912	275	356	a275	424
31	4,280	-	1,500	590	-	3,020	-	10,500	-	275	243	-
Total	74,725	90,322	62,797	29,311	35,961	50,475	121,370	123,908	21,764	16,184	27,831	5,268
Mean	2,410	3,010	2,030	946	1,240	1,630	4,050	4,000	725	522	898	176
Cfsm	3.87	4.84	3.26	1.52	1.99	2.62	6.51	6.43	1.17	0.839	1.44	0.283
In.	4.47	5.40	3.75	1.75	2.15	3.02	7.26	7.41	1.30	0.97	1.66	0.31

Calendar year 1907: Max 18,900 Min 205 Mean 1,620 Cfsm 2.80 In. 35.40

Water year 1907-8: Max 16,900 Min 124 Mean 1,800 Cfsm 2.89 In. 39.45

a No gage-height record; discharge interpolated or estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Jan. 5 to Feb. 16. Water-year figures not previously published.

## MERRIMACK RIVER BASIN

Pemigewasset River at Plymouth, N. H.--Continued

Discharge, in cubic feet per second, water year October 1908 to September 1909

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	314	424	240	385	1,000	2,300	2,510	1,460	510	a186	300
2	188	275	356	230	390	900	1,800	a2,420	1,260	415	240	340
3	464	243	314	a250	390	800	1,900	2,710	1,130	465	210	375
4	a376	314	275	270	350	750	a2,060	2,710	1,080	a570	240	340
5	314	356	275	260	335	700	2,400	4,180	965	510	240	a310
6	212	314	a295	4,800	315	660	2,300	3,340	a1,850	560	340	340
7	275	275	314	2,700	a320	a820	7,280	4,820	1,320	465	300	415
8	243	a259	500	1,500	960	810	12,100	4,500	1,320	510	a285	375
9	188	243	464	1,000	760	800	6,440	a4,820	1,020	415	270	340
10	a124	243	424	a840	600	800	3,760	5,680	915	465	270	300
11	a147	188	390	680	480	720	a3,550	7,140	860	a425	340	300
12	188	212	390	600	450	650	3,340	5,030	810	415	240	a370
13	212	424	a347	520	450	560	3,020	3,650	a780	375	270	340
14	165	314	275	500	a490	a550	15,400	3,340	860	340	240	300
15	165	a324	295	500	600	660	21,900	4,280	810	340	a225	270
16	142	356	320	450	565	740	15,200	a5,460	760	270	210	270
17	142	390	300	a410	525	700	9,280	7,140	710	300	210	240
18	a136	356	300	350	480	960	a7,890	4,920	2,710	a330	300	270
19	a124	243	275	370	450	910	6,860	4,600	2,710	340	375	a255
20	165	275	a290	380	525	850	16,700	4,400	a1,660	340	300	240
21	165	275	300	410	1,100	a820	8,400	2,300	1,080	300	375	a166
22	165	a255	270	400	3,500	790	6,720	2,710	810	300	a330	270
23	243	243	270	590	1,600	770	7,000	a2,420	760	270	300	210
24	188	243	280	a400	1,400	770	4,820	2,000	710	270	270	270
25	a176	212	290	420	2,200	854	a4,180	1,680	660	a285	240	270
26	165	424	290	440	1,800	2,100	3,650	1,460	660	300	240	a255
27	165	440	a280	415	1,400	3,340	3,230	1,460	a570	375	270	340
28	a124	597	270	415	a1,200	a3,100	3,760	1,320	610	300	210	710
29	243	a590	270	400	-	2,920	3,650	2,820	560	240	a240	4,600
30	390	464	260	380	-	2,820	2,820	a2,300	510	240	270	1,320
31	356	-	260	a400	-	2,610	-	1,830	-	a210	210	-
Total	6,593	10,061	9,863	21,320	24,020	35,814	193,720	109,950	32,020	11,550	8,246	14,641
Mean	213	335	318	688	858	1,166	6,460	3,550	1,070	373	266	482
Cfsm	0.342	0.539	0.511	1.11	1.38	1.86	10.39	5.71	1.72	0.600	0.228	0.785
In.	0.039	0.60	0.59	1.27	1.44	2.14	11.58	6.57	1.91	0.69	0.49	0.62

Calendar year 1908: Max 13,300 Min 124 Mean 1,250 Cfsm 2.01 In. 27.41  
 Water year 1908-9: Max 21,900 Min 124 Mean 1,310 Cfsm 2.11 In. 28.55

A no gage-height record; discharge interpolated or estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 15 to Mar. 24. Water-year figures not previously published.

Discharge, in cubic feet per second, water year October 1909 to September 1910

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	760	340	560	400	900	5,500	6,720	a2,550	2,420	660	425	270
2	660	340	610	a370	810	6,600	6,440	2,380	2,180	600	375	300
3	a685	300	510	350	720	5,500	a4,820	2,060	1,660	a550	340	300
4	710	375	610	340	660	4,300	4,060	3,550	1,400	510	340	a297
5	610	510	a590	340	650	3,550	4,820	2,600	a1,200	570	5,590	577
6	560	465	560	360	a570	a2,920	6,720	2,420	1,030	450	1,480	1,857
7	560	a425	560	355	540	2,420	8,920	1,660	2,060	450	a1,030	2,307
8	510	415	510	350	510	4,060	5,590	a1,530	1,950	425	810	1,247
9	465	415	510	a370	510	2,300	3,800	1,400	1,660	425	660	810
10	a425	375	465	480	480	1,750	a3,050	1,240	1,480	a400	600	727
11	415	375	465	425	450	1,400	2,420	1,570	1,170	375	570	a667
12	415	375	a435	350	425	1,320	1,850	1,320	a1,320	375	720	807
13	465	340	415	400	a425	a1,280	1,750	1,170	2,550	340	660	510
14	510	a340	465	400	400	1,240	1,480	1,170	1,850	340	a570	667
15	415	340	510	360	400	1,030	1,660	a1,140	1,480	300	510	877
16	375	300	510	a340	375	955	1,480	1,100	1,240	340	1,480	727
17	a395	415	465	330	375	870	a1,440	1,030	1,100	a360	750	577
18	415	510	430	320	400	750	1,400	920	1,480	375	a540	577
19	375	465	a450	420	400	600	2,550	1,480	a1,400	300	600	510
20	340	415	450	380	a375	a840	4,180	1,320	1,320	300	810	450
21	340	a375	430	380	350	1,400	4,310	1,170	1,170	300	a690	450
22	375	340	450	6,100	375	1,240	3,300	a1,140	1,100	270	570	425
23	510	375	450	a4,100	660	1,660	5,950	1,100	870	300	450	a225
24	a485	560	470	2,550	480	1,750	a4,180	1,030	900	a285	425	375
25	465	510	385	2,550	425	3,170	3,300	1,030	810	270	425	a400
26	415	1,380	a425	1,750	400	8,740	2,800	1,480	a730	270	375	425
27	415	1,080	385	1,400	a375	a4,180	9,280	1,750	660	270	375	375
28	375	a870	340	1,240	480	3,680	5,070	1,480	1,100	270	a330	750
29	375	710	310	1,100	-	3,800	3,050	a1,440	965	375	300	965
30	415	760	310	a1,030	-	7,290	2,800	1,400	810	340	270	660
31	a375	-	540	965	-	7,000	-	1,170	-	a390	270	-
Total	14,610	14,795	14,575	30,605	13,900	93,105	119,090	47,900	41,065	11,775	24,510	19,990
Mean	471	493	470	987	496	3,000	3,970	1,550	1,370	380	791	666
Cfsm	0.757	0.793	0.756	1.59	0.797	4.82	6.38	2.49	2.20	0.611	1.27	1.07
In.	0.87	0.88	0.87	1.83	0.83	5.57	7.12	2.86	2.46	0.70	1.47	1.20

Calendar year 1909: Max 21,900 Min 186 Mean 1,360 Cfsm 2.19 In. 29.59  
 Water year 1909-10: Max 9,280 Min 270 Mean 1,220 Cfsm 1.96 In. 26.66

A no gage-height record; discharge interpolated or estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 18 to Jan. 22, Feb. 5 to Mar. 4. Water-year figures not previously published.

## Pemigewasset River at Plymouth, N. H.--Continued

Discharge, in cubic feet per second, water year October 1910 to September 1911

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	570	450	425	a840	480	375	2,550	9,640	2,060	340	375	280
2	a570	450	375	1,030	425	375	a1,850	11,100	1,400	a310	570	300
3	600	425	375	1,170	425	425	1,400	6,580	900	265	330	a305
4	600	<u>2,300</u>	a400	<u>4,440</u>	480	480	1,100	4,060	a780	175	320	310
5	510	1,750	450	1,480	a480	a375	1,030	2,920	660	144	198	288
6	450	a1,400	450	1,850	480	330	660	2,060	600	133	a173	320
7	425	1,170	425	1,750	375	375	1,570	a2,300	600	144	157	1,000
8	375	900	400	a1,480	375	480	4,440	3,300	570	137	300	660
9	a375	810	400	1,320	330	600	a3,800	3,170	570	a160	220	540
10	425	750	425	1,170	330	425	3,050	3,050	510	195	163	a570
11	375	720	a350	1,030	330	290	2,180	2,550	a480	151	216	630
12	375	660	310	900	a350	a250	3,170	2,550	450	236	375	480
13	340	a630	290	840	330	215	3,420	2,180	900	80	a330	510
14	340	600	480	720	290	250	4,820	a1,850	1,030	92	275	425
15	<u>300</u>	570	425	a600	480	250	<u>11,700</u>	1,570	1,170	95	<u>135</u>	375
16	a300	570	400	540	480	290	a7,000	1,480	900	a140	240	<u>1,320</u>
17	375	600	400	660	425	290	4,310	1,320	750	183	330	a900
18	340	570	a350	540	375	290	2,920	1,170	a690	660	275	690
19	340	450	310	1,030	a350	a375	3,300	1,170	660	600	265	480
20	300	a450	425	600	290	480	4,440	1,030	570	330	a330	425
21	340	425	425	540	425	480	3,050	a965	570	320	400	425
22	300	425	400	a540	480	540	3,680	900	510	290	320	400
23	a340	375	350	540	330	540	a3,170	810	510	a270	270	660
24	375	450	<u>1,320</u>	480	330	480	2,800	750	510	250	260	1,030
25	375	450	a660	<u>375</u>	290	425	5,480	870	a480	170	207	450
26	340	375	480	375	a290	a480	7,000	1,030	450	250	163	630
27	425	a375	425	600	290	660	7,890	900	425	105	a165	630
28	425	375	720	600	<u>250</u>	965	9,280	a810	425	124	168	540
29	750	340	780	a540	-	4,060	10,500	720	375	510	<u>1,480</u>	540
30	a600	425	840	540	-	3,600	a10,000	660	<u>340</u>	a570	870	720
31	510	-	660	600	-	3,550	-	<u>600</u>	-	660	600	-
Total	13,065	20,240	14,925	29,720	10,525	23,200	131,540	74,065	20,845	8,089	10,500	16,833
Mean	421	675	481	959	376	748	4,380	2,390	695	261	339	561
Cfsm	0.677	1.09	0.773	1.54	0.605	1.20	7.04	3.84	1.12	0.420	0.545	0.902
In.	0.78	1.21	0.89	1.78	0.63	1.39	7.85	4.43	1.25	0.48	0.63	1.01

Calendar year 1910: Max 9,280 Min 270 Mean 1,230 Cfsm 1.98 In. 26.92  
 Water year 1910-11: Max 11,700 Min 80 Mean 1,020 Cfsm 1.64 In. 22.34

a No gage-height record; discharge interpolated or estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 8 to Apr. 14. Water-year figures not previously published.

## Pemigewasset River at Plymouth, N. H.--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Rate of change in stage used as a factor Nov. 3, 4, Dec. 6, Apr. 6, 7, 11, 14-24, May 12, 13, June 1, 2, 3)

Oct. 1 to June 2				June 3 to Sept. 2				Sept. 3-30	
0.8	392	6.0	7,150	0.2	116	1.0	462	0.3	162
1.0	528	10.0	14,400	.4	168	1.5	1,000	.5	235
1.5	1,030	15.0	25,400	.7	276	2.0	1,640	.8	392
2.0	1,640			Note.--Same as preceding table above 2.0 ft.				Note.--Same as first table above 0.8 ft.	

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	504	946	900	1,450	880	560	1,270	3,570	4,290	480	216	145
2	464	910	920	1,300	910	550	3,130	2,840	20,100	439	206	450
3	450	7,860	850	1,250	950	540	4,150	2,430	6,790	410	202	600
4	438	11,000	*830	1,130	960	530	3,240	2,130	3,860	400	193	460
5	424	*4,240	1,030	900	1,450	560	3,700	1,870	3,240	390	202	356
6	418	2,770	6,440	950	1,600	600	12,300	1,780	2,510	355	278	274
7	398	2,540	4,620	880	1,300	610	7,590	2,030	2,440	325	242	233
8	4,220	6,490	3,060	770	1,000	600	5,670	2,120	2,130	321	213	210
9	2,920	3,930	2,490	760	1,000	590	4,870	2,110	1,780	311	199	202
10	1,600	2,630	2,260	*800	920	580	5,290	2,300	1,540	311	199	168
11	1,230	2,130	1,740	750	890	660	6,980	2,400	1,420	432	227	191
12	1,130	1,820	1,500	720	800	1,500	5,520	6,790	1,470	462	242	191
13	946	1,610	1,100	720	680	1,480	4,360	7,220	1,480	350	242	164
14	814	1,490	800	700	700	1,000	5,590	4,140	1,200	311	227	178
15	750	2,030	880	740	710	880	10,400	3,270	1,020	291	199	175
16	710	1,770	800	1,500	710	780	7,910	3,660	880	276	190	168
17	656	1,760	760	1,320	700	760	7,060	3,020	820	263	450	202
18	610	1,550	800	1,400	670	720	7,760	2,430	880	242	540	191
19	567	1,540	850	1,800	670	720	8,870	2,130	772	251	340	168
20	551	1,170	880	1,280	660	730	11,900	1,990	738	268	230	217
21	528	1,030	1,100	1,130	660	760	10,900	3,300	630	255	210	221
22	510	960	1,900	750	640	940	6,900	3,660	580	247	199	198
23	507	1,050	1,650	1,200	640	1,000	9,070	2,930	541	235	193	151
24	492	1,330	1,350	1,500	620	920	7,780	2,300	506	230	187	194
25	1,900	1,410	1,150	1,030	610	920	5,060	2,240	560	220	180	202
26	1,740	1,100	1,100	900	610	980	4,200	6,630	570	210	177	198
27	1,150	1,050	930	1,210	800	1,750	4,710	4,090	*1,280	250	165	214
28	922	800	880	1,700	*590	*1,910	5,010	*2,780	749	330	*148	233
29	1,140	900	860	1,200	580	1,490	*5,910	2,290	560	*375	140	198
30	994	*860	1,000	*830	-	1,320	5,100	2,360	550	*259	125	*233
31	*874	-	1,250	820	-	1,390	-	1,900	-	230	125	-
Total	30,557	70,476	46,680	33,190	23,710	28,330	192,200	94,700	65,886	9,729	6,886	7,125
Mean	986	2,349	1,506	1,071	818	914	6,407	3,055	2,196	314	222	238
Cfsm	1.59	3.78	2.42	1.72	1.32	1.47	10.30	4.91	3.53	0.505	0.557	0.583
In.	1.83	4.21	2.79	1.98	1.42	1.69	11.49	5.66	3.94	0.58	0.41	0.43
Calendar year 1951: Max 14,000 Min 334 Mean 1,624 Cfsm 2.61 In. 35.45												
Water year 1951-52: Max 20,100 Min 125 Mean 1,665 Cfsm 2.68 In. 36.43												

Peak discharge (base, 12,500 cfs).--Nov. 3 (11 p.m.) 20,200 cfs (12.13 ft); Apr. 6 (9 a.m.) 14,400 cfs (9.86 ft); Apr. 20 (11 p.m.) 15,800 cfs (10.43 ft); June 2 (7 a.m.) 27,400 cfs (14.86 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record July 3-7, 23-29, Aug. 16-21, Aug. 30 to Sept. 4; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, powerplant records, and records for Pemigewasset River at Woodstock and Baker River near Rumney. Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 5, Dec. 12 to Mar. 27.



## Squam River at Ashland, N. H.

Location.--Lat 43°42'15", long. 71°37'50", on right bank 200 ft upstream from bridge on U. S. Highway 3 and a third of a mile north of Ashland, Grafton County.

Drainage area.--57.6 sq mi.

Records available.--August 1939 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 545 ft (from topographic map).

Average discharge.--13 years, 89.6 cfs.

Extremes.--Maximum discharge during year, 414 cfs June 3 (gage height, 11.64 ft); minimum daily, 70 cfs Sept. 13, 14.

1939-52: Maximum discharge, 498 cfs Apr. 11, 1951 (gage height, 11.93 ft); minimum daily, 14 cfs Feb. 4, 1940.

Remarks.--Records excellent. Flow completely regulated by Squam and Little Squam Lakes.

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)

10.3	57
10.5	89
11.0	200
11.7	437

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	111	126	155	228	264	167	124	166	91	79	74
2	*86	109	126	155	228	261	130	111	316	91	79	74
3	122	118	128	157	228	258	132	107	390	91	79	72
4	120	116	*128	155	228	258	132	107	406	91	79	72
5	118	116	126	155	*228	255	139	105	402	91	79	72
6	118	116	128	155	228	252	148	105	394	91	79	93
7	116	116	133	201	228	264	130	105	324	91	79	111
8	116	118	146	234	228	274	126	105	255	91	79	111
9	113	116	146	234	228	274	126	105	252	93	79	111
10	111	116	143	234	228	268	124	105	249	93	77	111
11	109	116	141	231	225	271	122	107	243	94	77	109
12	109	116	141	231	225	293	124	109	243	94	77	97
13	107	116	141	231	222	331	124	109	198	94	77	70
14	107	116	139	231	222	335	126	107	184	94	77	70
15	107	130	139	231	220	324	126	107	182	94	77	72
16	107	135	139	231	228	324	205	107	182	94	77	98
17	107	133	137	231	246	321	249	107	133	80	77	111
18	107	135	137	231	246	317	255	107	118	75	77	111
19	107	132	139	231	243	328	255	107	118	77	77	111
20	107	132	139	231	243	324	252	107	118	77	77	109
21	113	132	139	228	243	321	249	111	118	79	77	109
22	118	130	155	228	243	310	249	111	98	79	75	109
23	118	132	157	231	240	307	252	111	93	79	75	109
24	118	135	157	234	240	300	249	111	93	79	74	109
25	116	132	155	234	240	297	249	113	*91	79	74	109
26	116	130	155	234	240	300	*163	120	91	79	74	109
27	116	128	155	234	237	300	126	128	91	79	*74	109
28	113	128	157	234	237	264	126	130	91	79	74	107
29	113	128	152	231	255	214	126	135	91	79	74	109
30	111	126	152	231	-	214	124	135	91	79	74	109
31	111	-	155	231	-	214	-	135	-	79	74	-
Total	3,436	3,714	4,407	6,695	6,775	8,837	5,105	3,493	5,821	2,656	2,377	2,947
Mean	111	124	142	216	234	285	170	113	194	85.7	76.7	98.2
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 457 Min 70 Mean 118 Cfsm - In. -  
 Water year 1951-52: Max 406 Min 70 Mean 154 Cfsm - In. -

\* Discharge measurement made on this day.

Smith River near Bristol, N. H.

Location.--Lat 43°34'00", long. 71°44'50", on right bank in Hill, Merrimack County, 1.5 miles upstream from mouth and  $1\frac{1}{2}$  miles southwest of Bristol, Grafton County.

Drainage area.--85.8 sq mi.

Records available.--May 1918 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 449.80 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 25, 1933, staff gage at site  $1\frac{1}{2}$  miles upstream at different datum.

Average discharge.--34 years, 141 cfs.

Extremes.--Maximum discharge during year, 2,130 cfs June 1 (gage height, 7.64 ft); minimum daily, 6.2 cfs Aug. 29.

1918-52: Maximum discharge, 8,100 cfs Mar. 19, 1936 (gage height, 16.09 ft, from floodmarks), by contracted-opening determination; minimum daily, 2.7 cfs (revised) Aug. 2, 1933.

Revisions.--The figures of maximum and minimum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Maximum			Observed minimum		
		Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
501....	1919	Mar. 28, 1919	2,320	+4.9	-	-	-
501....	1920	Apr. 14, 1920	1,820	+4.4	-	-	-
521....	1921	Dec. 14, 1920	1,090	+3.6	-	-	-
541....	1922	Apr. 12, 1922	2,120	+4.7	-	-	-
561....	1923	Apr. 6, 1923	2,220	+4.8	-	-	-
581....	1924	Apr. 19, 1924	1,440	+4.0	-	-	-
601,641	1925	Mar. 29, 1925	2,560	+5.1	-	-	-
621....	1926	Apr. 25, 1926	2,020	+4.6	-	-	-
641....	1927	Mar. 15, 1927	1,920	+4.5	Aug. 26	9.4	0.50
661....	1928	-	-	-	Oct. 2	8.4	.48
681....	1929	Mar. 17, 1929	†1,750	-	-	-	-
696....	1930	Mar. 9, 1930	1,440	+4.0	††	6.0	.43
711....	1931	May 23, 1931	1,260	+3.8	Oct. 5	5.0	.41
726....	1932	Apr. 12, 1932	2,020	+4.6	-	-	-
741....	1933	Apr. 18, 1933	2,220	+4.8	-	-	-
921....	1941	Feb. 8, 1941	790	5.19	-	-	-

† From graph based on gage readings.

‡ Estimated.

†† Occurred several times in September.

Remarks.--Records excellent except those for periods of ice effect, which are good, and those for periods of no gage-height record, which are fair. Some diurnal fluctuation caused by small mill above station; greater fluctuation prior to 1941.

Revisions (water years).--W 711: Drainage area. W 781: 1934. Revised figures of discharge, in cubic feet per second, for some periods in the water years 1919, 1922-31, and 1941-43 are given herewith. They supersede those published in previous water-supply papers.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1919		1923		1926		1927	
Mar. 26.....	1,820	Apr. 9.....	1,440	Apr. 25.....	1,920	Aug. 4.....	34
29.....	2,020	10.....	936	26.....	1,620	5.....	25
30.....	1,090	11.....	732	27.....	1,010	6.....	22
		12.....	670			7.....	22
1922		21.....	670	1927		8.....	19
Mar. 27.....	670	22.....	796	Mar. 15.....	1,620	9.....	26
28.....	936	23.....	1,010	16.....	1,260	10.....	24
29.....	1,010	24.....	864	17.....	1,010	11.....	23
30.....	1,010	29.....	1,620	19.....	864	12.....	22
31.....	796	30.....	1,820	21.....	936	13.....	24
Apr. 8.....	670	May 1.....	1,260	July 1.....	25	14.....	22
9.....	1,010	2.....	732	2.....	24	15.....	44
10.....	1,260			3.....	26	16.....	36
11.....	1,440	1924		4.....	25	17.....	29
12.....	2,020	Apr. 14.....	936	5.....	26	18.....	23
13.....	1,620	15.....	936	6.....	22	19.....	23
14.....	1,010	19.....	1,260	7.....	20	20.....	21
15.....	864	20.....	1,260	10.....	32	21.....	19
16.....	732	21.....	864	11.....	26	22.....	16
18.....	732	22.....	936	12.....	22	23.....	19
19.....	670	23.....	936	13.....	25	24.....	18
June 19.....	796			14.....	27	25.....	17
22.....	1,090	1925		20.....	42	26.....	16
23.....	1,090	Mar. 21.....	1,090	21.....	40	27.....	24
24.....	796	28.....	1,010	22.....	34	Sept. 9.....	42
25.....	1,010	29.....	2,320	23.....	31	10.....	36
		30.....	2,320	26.....	28	11.....	36
1923		31.....	1,620	27.....	24	12.....	39
Apr. 5.....	796			28.....	32	13.....	26
6.....	1,820	1926		29.....	26	14.....	27
7.....	1,620	Apr. 23.....	1,350	30.....	22	15.....	32
8.....	1,620	24.....	1,530	31.....	34	16.....	35

## MERRIMACK RIVER BASIN

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Smith River near Bristol, N. H.--Continued

Revised figures of discharge, in cubic feet per second, 1919, 1922-31, 1941-43--Continued

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1927		1930		1931		1942	
Sept. 17.....	29	Sept. 13.....	13	Sept. 11.....	15	Apr. 20.....	580
18.....	25	14.....	18	12.....	15	21.....	449
19.....	25	15.....	12	13.....	15	22.....	379
20.....	27	16.....	19	14.....	15	23.....	359
21.....	23	17.....	12	15.....	17	24.....	351
22.....	22	18.....	13	16.....	18	25.....	322
23.....	19	19.....	19	17.....	22	26.....	277
24.....	15	20.....	22	18.....	30	27.....	231
25.....	17	21.....	6.0	19.....	7.9	28.....	196
26.....	21	22.....	16	20.....	20		
27.....	16	23.....	8.9	21.....	33	1943	
28.....	19	24.....	13	23.....	38	Mar. 13.....	228
29.....	18	25.....	16	24.....	29	14.....	280
30.....	15	26.....	6.5	25.....	25	15.....	254
Oct. 1.....	16	27.....	21	26.....	28	16.....	206
2.....	9.4	28.....	11	29.....	40	19.....	225
3.....	10	29.....	17	30.....	29	20.....	223
8.....	42	30.....	11			21.....	206
9.....	32	Oct. 1.....	11	1940		22.....	201
10.....	29	2.....	13	Dec. 29.....	267	23.....	196
11.....	28	3.....	16	30.....	449	25.....	196
12.....	25	4.....	9.4	31.....	472	26.....	321
		5.....	10			27.....	675
1928		6.....	7.4			28.....	805
Mar. 28.....	2,120	7.....	14	Feb. 1941		29.....	680
29.....	1,260	8.....	11	9.....	620	30.....	475
Apr. 6.....	1,170	9.....	8.4	11.....	375	31.....	322
7.....	1,440	10.....	8.9	13.....	225	Apr. 1.....	251
8.....	1,440	11.....	15	Apr. 5.....	371	2.....	225
9.....	1,010	12.....	15	6.....	387	3.....	214
Dec. 6.....	50	13.....	14	7.....	449	4.....	199
7.....	55	14.....	7.4	8.....	431	5.....	225
8.....	55	15.....	15	9.....	490	6.....	231
9.....	50	16.....	18	10.....	494	12.....	214
10.....	40	17.....	17	11.....	521	13.....	245
11.....	45	18.....	26	12.....	498	14.....	516
12.....	40	19.....	21	13.....	454	15.....	454
13.....	38	20.....	18	14.....	467	16.....	318
14.....	35	21.....	18	15.....	476	17.....	285
15.....	45	22.....	18	16.....	418	18.....	257
16.....	46	23.....	18	17.....	322	19.....	348
17.....	46	24.....	19	18.....	264	20.....	371
		29.....	45	19.....	228	21.....	395
1930		30.....	45	20.....	199	22.....	460
Mar. 9.....	1,350					23.....	593
10.....	1,090	1931		1942		24.....	685
26.....	936	Aug. 1.....	39	Mar. 9.....	232	25.....	745
July 1.....	30	2.....	30	10.....	710	26.....	780
2.....	34	3.....	39	11.....	645	27.....	725
3.....	41	4.....	42	12.....	534	30.....	745
4.....	32	5.....	36	13.....	418	May 1.....	680
5.....	33	6.....	27	14.....	355	2.....	562
6.....	42	7.....	27	15.....	277	3.....	534
8.....	42	8.....	23	16.....	225	4.....	606
9.....	31	9.....	19	17.....	204	5.....	521
10.....	29	10.....	21	18.....	228	6.....	404
11.....	23	11.....	22	19.....	257	7.....	359
12.....	23	15.....	40	20.....	245	8.....	325
13.....	34	16.....	36	21.....	222	9.....	336
14.....	35	17.....	28	22.....	352	10.....	294
17.....	29	18.....	23	23.....	418	11.....	248
18.....	29	19.....	18	24.....	322	12.....	583
19.....	26	20.....	17	25.....	251	14.....	760
20.....	21	21.....	15	26.....	225	15.....	524
21.....	21	22.....	16	27.....	267	16.....	333
22.....	22	23.....	17	28.....	322	17.....	289
23.....	22	24.....	18	29.....	325	18.....	462
24.....	21	25.....	15	30.....	344	19.....	426
25.....	18	26.....	15	31.....	294	20.....	314
26.....	16	27.....	15	Apr. 1.....	314	21.....	257
51.....	40	28.....	20	2.....	348	22.....	251
Sept. 1.....	35	29.....	21	3.....	521	23.....	225
2.....	39	30.....	24	4.....	606	27.....	259
3.....	39	31.....	18	5.....	539	28.....	257
4.....	28	Sept. 1.....	20	6.....	588	29.....	201
5.....	25	2.....	16	10.....	820	Aug. 5.....	329
6.....	19	3.....	38	11.....	562	6.....	261
7.....	22	4.....	35	12.....	395	11.....	264
8.....	23	5.....	42	13.....	336	12.....	261
9.....	18	7.....	28	14.....	340	15.....	333
10.....	19	8.....	22	15.....	468	14.....	330
11.....	13	9.....	16	16.....	735	15.....	210
12.....	18	10.....	15	19.....	735		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1919.....	-	2,020	138	511	6.11	7.05
Water year 1918-19.....	-	2,020	5	152	1.82	24.64
March 1922.....	-	1,010	20	399	4.77	5.50
April.....	-	2,020	152	604	7.22	8.06
June.....	-	1,090	56	353	4.22	4.71
Water year 1921-22.....	-	2,020	16	175	2.09	28.40
April 1923.....	-	1,820	62	709	8.48	9.46
May.....	-	1,260	67	232	2.78	3.20
Water year 1922-23.....	-	1,820	4.6	111	1.33	17.95

## MERRIMACK RIVER BASIN

Smith River near Bristol, N. H.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1919, 1922-31, 1941-43--Continued

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April 1924.....	-	1,280	148	604	7.22	8.06
Water year 1923-24.....	-	1,260	4.0	148	1.77	24.11
March 1925.....	-	2,320	113	488	5.84	6.73
Water year 1924-25.....	-	2,320	6.8	141	1.69	22.94
April 1926.....	-	1,920	166	536	6.41	7.15
Water year 1925-26.....	-	1,920	8.2	139	1.66	22.62
March 1927.....	-	1,620	46	358	4.28	4.94
July.....	-	112	20	39.2	.469	.54
August.....	-	153	16	40.8	.488	.56
September.....	-	259	15	51.5	.616	.69
Water year 1926-27.....	-	1,620	13	104	1.24	16.86
October 1927.....	-	398	9.4	117	1.40	1.62
March 1928.....	-	2,120	36	223	2.67	3.08
April.....	-	1,440	198	470	5.62	6.28
Water year 1927-28.....	-	3,210	9.4	182	2.18	29.69
December 1928.....	-	272	35	84.5	1.01	1.17
Water year 1928-29.....	-	1,120	5.5	136	1.63	22.05
March 1930.....	-	1,350	116	362	4.33	4.99
July.....	-	89	16	34.7	.415	.48
September.....	-	37	6.0	18.4	.220	.25
Water year 1929-30.....	-	1,350	6.0	112	1.34	18.24
October 1930.....	-	98	7.4	25.6	.306	.35
August 1931.....	-	67	15	27.6	.330	.38
September.....	-	58	7.9	27.9	.334	.37
Water year 1930-31.....	-	779	7.4	97.7	1.17	15.85
December 1940.....	3,053	472	53	98.5	1.15	1.32
Calendar year 1940.....	56,435	1,900	11	154	1.79	24.47
February 1941.....	4,329	620	48	155	1.81	1.88
April.....	8,277	521	83	276	3.22	3.59
Water year 1940-41.....	31,962.4	620	4.1	87.6	1.02	13.86
Calendar year 1941.....	29,181.4	620	4.1	79.9	.931	12.65
March 1942.....	8,095	710	31	261	3.04	3.51
April.....	15,851	1,430	151	528	6.15	6.87
Water year 1941-42.....	45,046.0	1,900	9.3	123	1.43	19.53
Calendar year 1942.....	45,975.0	1,900	9.3	126	1.47	19.94
March 1943.....	7,013	805	57	226	2.63	3.04
April.....	12,112	935	162	404	4.71	5.25
May.....	11,613	845	129	375	4.37	5.03
August.....	3,627	350	31	117	1.36	1.57
Water year 1942-43.....	47,221.7	935	8.7	129	1.50	20.47
Calendar year 1943.....	52,874.7	1,030	8.7	145	1.69	22.92

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	129	118	243	148	92	286	299	521	57	*15	9.5
2	45	126	126	246	150	90	446	246	*1,630	*46	*14	103
3	43	720	126	246	164	89	578	212	1,070	40	10	67
4	42	*963	120	209	181	87	614	187	653	37	11	46
5	43	765	169	170	282	86	846	171	442	36	12	33
6	38	510	544	170	309	91	1,640	162	316	33	13	24
7	44	424	526	150	263	98	1,480	154	279	31	13	19
8	483	626	404	130	203	96	1,260	142	236	28	13	17
9	470	574	335	125	185	94	968	129	195	26	13	15
10	329	414	329	120	166	92	936	120	166	30	14	14
11	236	306	256	117	150	115	1,040	124	146	68	17	13
12	259	250	209	113	135	279	950	603	135	73	18	12
13	215	215	160	110	176	778	688	320	120	20	23	12
14	162	198	120	107	115	259	814	458	103	34	28	12
15	131	233	105	*118	117	203	986	339	90	28	15	11
16	115	233	105	200	112	181	1,040	332	78	26	14	13
17	105	250	105	185	110	169	950	273	72	23	21	14
18	96	221	100	220	105	150	918	224	83	21	16	13
19	91	184	100	240	110	144	896	192	78	21	16	13
20	86	154	105	215	115	139	882	169	67	20	15	16
21	81	129	150	180	113	146	788	316	57	20	14	15
22	77	118	269	145	110	162	622	332	52	20	15	13
23	76	127	259	175	106	187	494	250	47	18	13	13
24	74	164	209	218	102	187	424	195	45	18	13	14
25	235	179	174	174	100	181	*345	217	52	16	19	14
26	274	152	155	157	99	203	329	466	58	15	11	16
27	179	144	140	225	98	299	296	396	83	18	10	15
28	152	115	120	289	96	355	311	273	65	21	*7.0	14
29	218	124	120	253	95	*335	463	212	54	25	6.2	13
30	179	113	120	187	-	302	396	198	63	18	6.4	12
31	144	-	196	157	-	306	-	164	-	16	7.2	-
Total	4,769	8,860	6,074	5,594	4,149	5,493	22,776	8,243	7,056	935	432.8	615.5
Mean	154	295	196	180	143	177	759	266	235	30.1	14.0	20.5
Cfsm	1.79	3.44	2.28	2.10	1.67	2.06	8.85	3.10	2.74	0.351	0.163	0.239
In.	2.07	3.84	2.63	2.42	1.80	2.38	9.87	3.57	3.06	0.40	0.19	0.27
Calendar year 1951: Max	2,240				Min	25	Mean	199	Cfsm	2.32	In.	31.51
Water year 1951-52: Max	1,640				Min	6.2	Mean	205	Cfsm	2.39	In.	32.50

Peak discharge (base, 1.150 cfs).--Apr. 6 (3 a.m.), 1,860 cfs (7.15 ft); June 1 (12 p.m.), 2,130 cfs (7.64 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Sept. 7-30; discharge estimated on basis of weather records, recorded range in stage, and records for Baker River near Rumney and Warner River at Davisville. Stage-discharge relation affected by ice Dec. 13-21, 26-30, Jan. 5-10, 16-23, Feb. 9, 11-14, 17-20.

## Lake Winnepesaukee at The Weirs, N. H.

Location.--Lat 43°36'20", long. 71°27'25", 800 ft north of highway bridge at The Weirs, Belknap County.

Drainage area.--363 sq mi at outlet at Lakeport.

Records available.--November 1937 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 500.02 ft above mean sea level, datum of 1929.

Extremes.--Maximum daily gage height during year, 4.73 ft June 3; minimum daily, 2.00 ft Mar. 18, 19.

1937-52: Maximum daily gage height, 5.27 ft May 20, 21, 1945; minimum daily, 0.63 ft Dec. 11, 1941.

Remarks.--Lake used for recreation and conservation for development of water power. Total usable capacity, 18,240,000,000 cu ft between elevations 494.55 ft (bottom of flume at Lakeport) and 504.22 ft (top of flashboards at outlet in Lakeport). Draft limited by law to an average of 250 cfs during the seven days in any week between June 1 and Oct. 15 of any year when gage reading is at or below 502.4 ft above mean sea level. Stage regulated at outlet and by Wentworth, Merrymeeting (see p. 173), and other lakes. Contents given herein are computed from gage height at 12 p.m. on last day of month, eliminating the effect of seiche and wind action.

Gage height, in feet, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.90	2.64	3.62	3.75	3.07	2.26	2.27	4.31	4.58	4.22	3.78	3.18
2	2.87	2.66	3.62	3.74	3.03	2.22	2.38	4.31	4.70	4.18	3.75	3.27
3	2.84	2.83	3.63	3.74	3.01	2.18	2.48	4.30	4.73	4.17	3.72	3.26
4	2.80	3.05	3.63	3.72	2.99	2.14	2.56	4.31	4.72	4.15	3.71	3.25
5	2.76	3.10	3.65	3.72	2.99	2.20	2.69	4.32	4.71	4.15	3.68	3.24
6	2.74	3.16	3.72	3.72	2.96	2.21	2.97	4.33	4.68	4.13	3.68	3.21
7	2.75	3.24	3.74	3.69	2.94	2.18	3.14	4.30	4.61	4.12	3.66	3.19
8	2.83	3.33	3.75	3.63	2.91	2.14	3.27	4.29	4.59	4.10	3.63	3.16
9	2.81	3.36	3.79	3.60	2.91	2.10	3.40	4.29	4.57	4.10	3.61	3.12
10	2.81	3.42	3.79	3.54	2.89	2.07	3.52	4.31	4.54	4.10	3.60	3.10
11	2.82	3.44	3.82	3.49	2.87	2.09	3.63	4.34	4.50	4.17	3.59	3.09
12	2.81	3.46	3.81	3.44	2.82	2.13	3.71	4.49	4.44	4.15	3.58	3.09
13	2.82	3.47	3.79	3.38	2.77	2.12	3.77	4.53	4.40	4.13	3.57	3.07
14	2.81	3.50	3.78	3.35	2.72	2.09	3.87	4.53	4.39	4.11	3.54	3.05
15	2.80	3.53	3.84	3.32	2.69	2.06	3.95	4.56	4.35	4.10	3.51	3.02
16	2.78	3.56	3.79	3.30	2.66	2.04	4.01	4.57	4.34	4.07	3.50	3.02
17	2.77	3.57	3.82	3.26	2.64	2.01	4.07	4.57	4.34	4.06	3.53	2.99
18	2.76	3.57	3.82	3.25	2.70	2.00	4.10	4.55	4.31	4.03	3.50	2.98
19	2.73	3.57	3.80	3.24	2.87	2.00	4.14	4.55	4.30	4.01	3.48	3.02
20	2.69	3.55	3.82	3.24	2.63	2.03	4.15	4.53	4.26	3.96	3.46	3.03
21	2.68	3.55	3.86	3.20	2.61	2.03	4.19	4.60	4.27	3.95	3.44	3.00
22	2.66	3.56	3.86	3.18	2.58	2.04	4.21	4.57	4.26	3.94	3.40	2.99
23	2.64	3.57	3.84	3.22	2.55	2.06	4.19	4.56	4.25	3.89	3.34	2.98
24	2.63	3.58	3.84	3.20	2.51	2.08	4.21	4.54	4.23	3.85	3.29	2.97
25	2.68	3.60	3.82	3.16	2.47	2.09	4.22	4.54	4.25	3.82	3.28	2.95
26	2.67	3.63	3.83	3.16	2.43	2.10	4.25	4.59	4.25	3.80	3.27	2.92
27	2.66	3.59	3.81	3.19	2.39	2.11	4.26	4.57	4.26	3.81	3.26	2.88
28	2.68	3.63	3.78	3.19	2.34	2.14	4.30	4.55	4.25	3.83	3.24	2.86
29	2.66	3.63	3.76	3.17	2.30	2.18	4.33	4.54	4.25	3.79	3.22	2.84
30	2.65	3.63	3.75	3.14	-	2.20	4.32	4.52	4.25	3.79	3.21	2.80
31	2.63	-	3.77	3.10	-	2.23	-	4.51	-	3.77	3.19	-

Monthly gage height and contents, water year October 1951 to September 1952

Date	Gage height (feet)†	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)
Sept. 30.....	2.93	15,710	
Oct. 31.....	2.63	15,120	-590
Nov. 30.....	3.63	17,100	+1,980
Dec. 31.....	3.77	17,580	+280
Calendar year 1951.....	-	-	+720
Jan. 31.....	3.08	16,000	-1,380
Feb. 29.....	2.28	14,430	-1,570
Mar. 31.....	2.24	14,350	-80
Apr. 30.....	4.32	18,480	+4,130
May 31.....	4.51	18,860	+380
June 30.....	4.23	18,300	-560
July 31.....	3.78	17,400	-900
Aug. 31.....	3.18	16,200	-1,200
Sept. 30.....	2.79	15,430	-770
Water year 1951-52.....	-	-	-280

† Gage height at 12 p.m.

## MERRIMACK RIVER BASIN

Lake Winnepesaukee Outlet at Lakeport, N. H.

Location.--Lat 43°32'55", long. 71°27'55", 100 ft upstream from highway bridge across Faugus Bay at Lakeport, Belknap County.

Drainage area.--363 sq mi.

Records available.--January 1860 to December 1911 (monthly gage heights only), June 1933 to September 1952.

Gage.--Water-stage recorder, Keeler deflection meter, and measuring flume. Datum of gage is 500.55 ft above mean sea level, datum of 1929. Prior to January 1912, staff gage at site 150 ft downstream at same datum. June 1, 1933, to Sept. 30, 1936, staff gage and continuous recording current meter at same site and datum. Oct. 1, 1936, to May 23, 1944, discharge computed from flow over spillway and through gates and wheels at site 150 ft downstream.

Average discharge.--19 years, 514 cfs (adjusted for storage).

Extremes.--Maximum daily discharge during year, 1,770 cfs June 12; minimum daily, 130 cfs May 11.

1933-52: Maximum daily discharge, 2,890 cfs Mar. 31, 1936; minimum daily, 20 cfs Dec. 6-19, 1941, Dec. 22, 1941, to Jan. 19, 1942.

Remarks.--Records good. Flow completely regulated by Winnepesaukee (see preceding page), Wentworth, Merrymeeting (see p. 173), and other lakes. Daily discharge computed from relation between discharge, stage, and deflection of vane in measuring flume.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	935	655	*310	1,290	1,660	1,460	400	830	1,030	330	455	330
2	945	*650	310	1,390	1,640	*1,390	305	710	1,520	325	*430	300
3	925	*405	450	1,360	*1,630	1,440	325	405	1,700	340	430	315
4	910	290	*450	1,370	1,670	1,420	345	255	1,620	330	455	320
5	855	420	465	1,420	1,610	1,400	300	440	*1,600	335	440	300
6	635	435	440	1,310	1,680	1,350	240	545	1,580	340	440	*280
7	490	435	445	1,610	1,670	1,330	385	545	*1,580	350	445	330
8	550	425	315	1,750	1,660	1,300	460	545	1,360	380	445	275
9	400	430	320	1,750	1,550	1,220	445	515	1,780	380	450	320
10	395	310	465	1,740	1,550	1,290	450	315	1,780	385	430	315
11	320	310	465	1,750	1,630	1,290	720	130	1,720	*380	430	315
12	315	445	470	1,640	1,670	1,270	1,120	315	1,770	340	445	305
13	320	445	480	*1,640	*1,600	1,290	1,000	430	1,440	*325	410	310
14	340	435	455	1,670	1,630	1,280	1,160	695	725	345	345	325
15	665	440	330	1,640	1,660	1,250	1,220	700	590	325	340	295
16	670	455	320	*1,640	1,620	1,200	1,230	830	645	270	335	310
17	670	350	805	1,640	1,480	1,230	1,230	1,150	455	355	325	315
18	670	315	1,140	1,620	1,460	1,070	1,240	1,080	490	470	340	310
19	660	455	1,150	1,590	1,460	595	1,160	745	360	505	345	295
20	530	460	1,150	1,600	1,530	585	1,030	555	370	740	345	310
21	530	455	1,120	1,650	1,530	585	1,190	985	290	605	340	315
22	660	315	1,020	1,650	al,520	585	1,250	1,230	345	465	340	325
23	645	440	1,020	1,660	al,470	470	1,230	1,240	340	430	335	350
24	645	315	1,020	1,650	al,440	580	1,100	1,140	315	395	340	435
25	645	315	1,020	1,660	al,460	635	845	1,030	310	470	340	610
26	645	460	1,250	1,630	al,500	635	*755	1,190	320	460	335	590
27	525	455	1,480	1,640	al,480	*640	600	1,170	345	445	335	560
28	530	450	1,450	1,680	al,470	640	600	1,250	345	430	335	525
29	655	460	1,480	1,670	*al,470	570	760	1,220	340	455	310	580
30	655	450	1,290	1,650	-	*475	835	1,020	330	455	285	610
31	655	-	1,350	*1,660	-	595	-	1,040	-	445	330	-
Total	18,990	12,680	24,235	49,640	45,420	31,070	23,940	24,250	27,355	12,605	11,685	11,075
Mean	613	423	782	1,601	1,566	1,002	798	782	912	407	377	369
(†)	-590	+1,980	+280	-1,360	-1,570	-80	+4,130	+380	-560	-900	-1,200	-770

Adjusted for change in reservoir contents

Mean	392	1,187	886	1,086	940	972	2,391	924	696	70.6	-71.1	72.1
Cfs/m	1.08	3.27	2.44	2.99	2.59	2.68	6.59	2.55	1.92	0.194	-0.196	0.199
In.	1.25	3.65	2.81	3.45	2.79	3.09	7.35	2.94	2.14	0.22	-0.23	0.22

Observed

Adjusted

Calendar year 1951:	Max	1,780	Min	245	Mean	765	Mean	788	Cfs/m	2.17	In.	29.46
Water year 1951-52:	Max	1,770	Min	130	Mean	800	Mean	792	Cfs/m	2.18	In.	29.68

\* Discharge measurement made on this day.

† Change in contents in Lake Winnepesaukee, in millions of cubic feet. Negative figures indicate that evaporation and seepage from reservoir exceeded inflow.

No deflection record; discharge estimated on basis of 1 discharge measurement, gage-height record, typical regulation pattern, and record of gate operations.

## Winnepesaukee River at Tilton, N. H.

Location.--Lat 43°26'30", long. 71°35'15", on right bank at Tilton, Belknap County, 0.3 mile upstream from Packer Brook.

Drainage area.--471 sq mi.

Records available.--January 1937 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 441.87 ft above mean sea level, unadjusted.

Average discharge.--15 years, 677 cfs.

Extremes.--Maximum discharge during year, 2,600 cfs Apr. 6 (gage height, 6.92 ft); minimum daily, 276 cfs Aug. 28.

1937-52: Maximum discharge, 3,810 cfs Sept. 21, 1938 (gage height, 7.90 ft), from rating curve extended above 2,100 cfs on basis of computation of peak flow over dam; minimum daily, 48 cfs Aug. 31, 1941.

Remarks.--Records excellent except those for periods of ice effect, which are good, and those for period of no gage-height record, which are fair. Flow regulated by power-plants and by Winnepesaukee (see p. 137), Winnisquam, Wentworth, Merrymeeting (see p. 173), and other lakes above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 6

Apr. 7 to Sept. 30

3.5	330	6.0	1,810	3.3	276	5.0	1,120
4.0	550	7.0	2,670	3.5	350	6.0	1,810
5.0	1,120			4.0	575	6.5	2,220

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,010	824	424	1,670	1,990	1,600	685	1,070	1,470	*324	*497	302
2	1,010	820	425	1,670	1,940	1,590	790	1,050	1,830	313	485	324
3	1,010	1,140	425	1,670	1,830	1,540	907	1,040	1,760	306	499	344
4	1,010	1,510	427	1,650	1,850	1,460	1,040	619	1,700	309	578	681
5	1,010	1,300	537	1,650	1,940	1,470	1,260	516	1,910	313	593	786
6	865	1,170	776	1,650	2,050	1,480	2,440	378	1,920	332	597	489
7	762	1,190	806	1,640	2,030	1,480	2,170	366	1,910	328	591	302
8	906	1,300	785	1,640	1,990	1,480	1,950	432	1,790	317	392	294
9	830	1,240	764	1,650	1,990	1,480	1,870	506	1,720	320	302	302
10	782	1,160	773	1,690	1,950	1,480	1,820	529	1,700	332	508	306
11	782	931	748	1,790	1,850	1,550	1,820	532	1,700	580	586	302
12	782	624	731	1,810	1,800	1,800	1,810	712	1,690	595	594	291
13	476	666	714	1,790	b1,780	1,830	1,960	665	1,670	570	582	287
14	346	674	700	1,790	1,790	1,780	2,030	769	1,550	565	600	283
15	491	704	710	1,810	1,770	1,760	2,070	846	1,340	520	361	287
16	606	696	b680	*1,870	1,780	1,740	2,000	862	1,040	525	302	298
17	621	712	b770	1,980	1,780	1,680	1,960	1,070	610	523	515	287
18	635	690	1,040	2,000	1,790	1,620	1,930	1,080	480	354	422	287
19	606	668	b1,070	2,020	1,780	1,530	1,890	1,130	471	306	324	291
20	603	652	1,080	2,000	1,760	1,290	1,830	1,170	462	570	313	291
21	648	622	1,100	1,990	1,770	1,110	1,660	928	350	779	309	283
22	696	455	1,210	1,920	1,760	1,100	1,620	1,100	309	650	298	283
23	702	429	1,440	1,890	1,750	1,050	1,600	1,160	306	435	291	291
24	786	448	1,450	1,950	1,750	1,040	1,580	1,250	324	408	287	340
25	864	442	1,440	2,010	1,670	970	*1,460	1,280	350	370	*287	544
26	856	442	1,440	2,040	1,620	*982	1,440	1,610	328	306	287	715
27	825	b430	1,450	2,080	*1,650	1,040	1,280	*1,650	*328	362	283	568
28	831	b430	1,420	*2,100	1,620	1,070	1,230	1,710	a330	437	*276	491
29	864	*424	1,450	2,060	1,620	1,140	1,150	1,650	a335	483	291	715
30	*836	424	1,440	2,010	-	1,150	1,090	1,570	339	485	298	*725
31	820	-	1,520	1,990	-	874	-	1,470	-	495	294	-
Total	23,871	23,217	29,685	57,490	52,620	43,186	48,362	30,720	32,022	13,542	12,872	11,989
Mean	770	774	958	1,855	1,814	1,393	1,612	991	1,067	437	415	400
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 2,820 Min 281 Mean 992 Cfsm - In. -  
 Water year 1951-52: Max 2,440 Min 276 Mean 1,037 Cfsm - In. -

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and recorded range in stage.

b Stage-discharge relation affected by ice.

## Merrimack River at Franklin Junction, N. H.

Location.--Lat 43°25'25", long. 71°39'10", on right bank at Franklin Junction, Merrimack County, 1 mile downstream from confluence of Pemigewasset and Winnepesaukee Rivers.

Drainage area.--1,507 sq mi.

Records available.--July 1903 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 250.4 ft above mean sea level, unadjusted.

Prior to Sept. 13, 1923, chain gage at bridge 350 ft downstream at same datum.

Average discharge.--47 years (1905-52), 2,775 cfs.

Extremes.--1912-13: Maximum discharge during water year, 29,600 cfs Mar. 28 (gage height, 18.3 ft, from graph based on gage readings); minimum daily, 850 cfs July 5.

1951-52: Maximum discharge during year, 21,300 cfs June 3 (gage height, 15.40 ft); minimum daily, 368 cfs Aug. 23.

1903-52: Maximum discharge, 83,000 cfs Mar. 19, 1936 (gage height, 36.4 ft, from floodmarks), from rating curve extended above 30,000 cfs on basis of velocity-area studies, slope-area determination, and computation of flow over dam; minimum daily, 225 cfs Oct. 23, 1948.

Revisions.--The figures of maximum discharge for the water years 1904-9, 1911-13, 1915-17, 1919, 1922, some of which have been revised, superseding those published in the water-supply papers indicated, are contained in the following table.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
-	1904	May 1, 1904	+21,200	14.5
-	1905	Mar. 30, 1905	+19,900	13.9
-	1906	Apr. 16, 1906	+27,100	17.2
-	1907	May 1, 1907	+17,500	12.8
-	1908	Nov. 3, 1907	+22,300	15.0
-	1909	Apr. 15, 1909	+30,000	18.5
-	1911	May 2, 1911	+14,200	11.3
-	1912	Apr. 8, 1912	+19,700	13.8
-	1915	Feb. 26, 1915	+30,700	18.8
431.....	1916	May 18, 1916	22,700	15.2
451.....	1917	June 18, 1917	24,500	16.0
501.....	1919	May 23, 1919	26,300	16.8
541.....	1922	Apr. 12, 1922	31,100	19.0

† Not previously published.

Note.--Gage heights from graph based on gage readings.

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

Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Little Squam, Newfound, Winnepesaukee, Winnisquam, Wentworth, Merrymeeting, and other lakes. See pp. 137, 173 for description and monthly change in contents of many of these reservoirs.

Revisions (water years).--W 401: 1913 calendar year. W 641: 1923(M). W 756: Drainage area. W 781: 1928(M). Revised figures of discharge, in cubic feet per second, for the water years 1911-13, superseding those published in Water-Supply Papers 281, 301, 321, and 351, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Dec. 1910		Dec. 1910		Dec. 1910		Dec. 1910	
7.....	1,000	12.....	870	17.....	870	22.....	850
8.....	930	13.....	850	18.....	860	23.....	930
9.....	900	14.....	870	19.....	850	24.....	950
10.....	950	15.....	850	20.....	830	25.....	1,000
11.....	910	16.....	870	21.....	800	26.....	1,200

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1910.....	-	-	1,020	0.677	0.78
Calendar year 1910.....	14,200	-	2,410	1.60	21.72
Water year 1910-11.....	14,100	750	1,990	1.32	17.96
March 1912.....	-	-	3,160	2.10	2.42
Water year 1911-12.....	-	-	2,930	1.94	26.48



## MERRIMACK RIVER BASIN

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## Merrimack River at Franklin Junction, N. H.--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,090	3,000	a2,460	3,360	3,490	1,580	13,900	3,940	a5,200	1,030	a1,200	a1,130
2	1,980	3,320	2,580	3,160	a3,320	a1,600	a10,000	3,620	4,800	895	a1,150	1,080
3	1,810	a3,520	2,680	3,200	3,160	1,620	6,140	3,460	4,110	895	a1,100	1,030
4	1,680	3,320	4,180	3,120	3,040	1,650	4,620	a3,300	3,780	a870	a1,100	985
5	1,550	3,000	4,000	a3,120	3,040	1,750	4,260	3,160	3,620	850	a1,150	985
6	a1,550	3,000	3,660	3,120	2,880	1,710	a4,000	3,010	3,310	a900	a1,250	940
7	1,550	2,840	3,490	3,450	2,490	1,580	3,780	3,010	3,310	1,550	a1,200	a960
8	1,550	10,000	a3,440	3,450	2,200	a1,550	3,620	2,720	a3,230	1,550	a1,200	985
9	1,480	8,400	3,000	3,400	a2,000	a1,600	3,620	2,720	3,160	1,280	a1,250	1,030
10	1,550	a6,290	3,000	2,570	1,810	a1,600	3,460	2,580	2,440	1,130	a1,250	985
11	1,550	4,180	3,000	2,340	1,780	a1,650	3,460	a2,580	2,180	1,230	1,230	940
12	1,550	4,000	3,000	a2,320	2,090	1,710	3,460	2,580	2,180	1,230	1,180	985
13	a1,620	3,660	2,580	2,300	1,980	1,450	a3,460	2,180	2,050	a1,230	1,130	940
14	1,680	4,560	1,850	2,270	1,850	2,540	3,460	1,920	1,790	1,280	1,080	a920
15	1,680	4,540	a2,020	2,300	1,620	4,900	4,450	1,920	a1,790	1,330	1,030	895
16	1,550	3,490	2,090	2,270	a1,600	a10,000	4,280	1,790	1,790	1,230	895	1,030
17	1,550	a3,520	2,090	2,340	1,580	10,900	3,940	1,790	1,670	1,080	a900	1,030
18	1,420	3,160	2,090	3,450	1,620	5,100	3,620	a1,700	1,670	840	1,130	1,030
19	1,300	3,000	2,530	a3,900	1,680	4,540	3,460	1,670	1,550	1,300	985	1,080
20	a1,300	3,160	3,000	4,360	1,580	6,320	a3,460	1,790	1,550	a1,030	1,030	1,180
21	1,300	2,840	2,680	4,400	1,620	11,900	3,460	1,670	1,440	1,030	1,030	a1,250
22	1,480	2,680	a2,580	4,050	1,580	25,000	3,620	1,670	a1,300	940	1,030	1,330
23	1,550	2,680	2,090	4,270	a1,520	a15,000	3,460	3,780	1,180	850	1,030	5,740
24	11,700	a2,680	2,090	5,350	1,450	5,350	3,310	3,940	1,230	850	a1,050	5,310
25	a16,000	2,680	a2,090	3,450	1,420	7,400	3,310	a4,500	1,230	1,030	1,080	1,920
26	a10,000	2,680	2,090	a3,200	1,450	23,300	3,310	4,620	1,280	1,230	1,130	1,440
27	a7,000	2,680	2,090	2,920	1,480	13,300	a3,400	3,940	1,280	a1,100	1,130	1,330
28	a5,000	a2,680	2,090	2,570	1,680	28,100	3,460	3,310	1,180	1,030	1,080	a1,200
29	3,490	2,680	a2,020	2,230	-	9,710	3,940	4,602	a1,100	a1,000	1,180	1,080
30	3,320	2,530	1,850	2,200	-	a7,000	4,450	8,450	1,030	a1,200	1,230	985
31	3,160	-	2,680	2,490	-	5,740	-	5,740	-	a1,250	a1,180	-
Total	95,960	110,170	80,490	95,450	57,010	217,230	130,190	97,680	67,430	34,160	34,400	39,825
Cfsm	3,100	3,670	2,600	3,079	2,056	7,007	4,340	3,151	2,248	1,151	1,110	1,328
In.	2.06	2.44	1.72	2.04	1.35	4.65	2.98	2.09	1.49	0.732	0.737	0.862
Cfsm	2.37	2.72	1.99	2.36	1.41	5.36	3.21	2.41	1.66	0.84	0.85	0.98
Calendar year 1912: Max	-	-	-	-	Min	-	Mean 3,050	Cfsm 2.02	In. 27.57			
Water year 1912-13: Max	28,100	-	-	Min	850	-	Mean 2,904	Cfsm 1.93	In. 26.16			
Calendar year 1913: Max	28,100	-	-	Min	850	-	Mean 2,682	Cfsm 1.78	In. 24.16			

a No gage-height record; discharge estimated on basis of records for station at Garvins Falls.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,900	2,590	1,940	4,170	3,910	2,950	3,560	7,020	5,340	1,100	916	712
2	1,920	2,510	1,970	4,180	4,330	2,820	4,520	5,070	16,900	1,120	870	1,500
3	1,930	5,980	2,010	3,940	3,880	2,700	7,080	4,870	19,300	1,120	810	1,510
4	1,930	15,300	1,980	3,820	3,820	2,700	6,680	4,060	13,000	809	1,070	1,360
5	1,900	11,100	2,110	3,660	4,760	2,950	7,580	3,550	9,070	720	1,180	1,550
6	1,350	6,700	5,550	5,030	5,030	2,860	16,000	3,080	7,660	984	1,080	917
7	1,490	5,440	8,520	3,660	4,970	2,890	17,200	3,070	6,640	880	1,070	788
8	4,170	8,410	6,130	3,580	4,580	2,730	13,900	2,950	5,840	888	912	726
9	6,090	6,650	5,160	3,400	4,520	2,560	11,500	3,220	5,210	954	616	764
10	4,720	8,280	4,760	3,550	4,330	2,820	10,800	3,410	4,600	1,100	1,020	778
11	3,790	4,900	4,180	3,300	3,760	3,250	12,200	3,620	4,060	1,590	1,220	860
12	2,120	4,180	3,670	3,300	3,850	4,420	12,100	6,360	4,000	1,280	1,150	872
13	2,800	3,740	3,170	3,350	3,680	4,550	10,700	10,700	4,110	1,270	1,260	530
14	1,880	3,420	2,480	3,450	3,500	4,470	10,200	8,860	3,860	1,240	1,080	717
15	1,800	3,600	2,250	3,660	3,500	4,230	13,800	6,640	3,310	1,140	898	776
16	2,110	3,880	2,150	4,010	3,380	4,090	14,800	6,260	2,800	1,100	530	694
17	2,020	3,790	2,300	4,630	3,480	3,850	13,000	6,130	2,190	1,040	1,220	714
18	1,730	3,740	2,280	4,500	3,450	3,340	13,000	5,280	1,780	950	1,560	737
19	4,750	960	2,550	4,870	3,450	3,620	13,900	4,650	1,870	559	1,020	764
20	1,510	2,720	2,700	4,880	3,350	2,920	14,400	4,280	1,940	966	892	702
21	1,470	2,610	3,100	4,450	3,300	2,900	16,500	4,700	1,470	1,430	826	764
22	1,650	2,140	4,020	4,150	3,300	3,300	14,300	6,200	1,250	1,270	756	735
23	1,690	1,830	4,250	3,850	3,250	3,240	11,800	6,000	1,420	964	568	866
24	1,600	2,360	4,020	4,450	3,100	2,920	*12,900	5,160	1,340	878	700	854
25	2,570	2,730	3,720	4,400	3,000	3,260	10,200	4,770	1,430	855	*750	934
26	3,800	2,520	3,410	4,390	3,050	3,100	8,270	*7,830	1,320	579	740	1,200
27	3,000	2,190	3,500	4,630	3,070	*3,640	7,550	*3,490	*1,460	912	690	889
28	2,460	2,100	3,150	4,660	2,980	4,150	7,830	7,020	1,900	*1,220	710	902
29	2,890	*1,880	3,050	4,750	3,040	4,280	8,500	5,680	1,120	1,210	*702	*1,190
30	*2,650	1,750	2,980	4,400	-	4,180	8,560	5,370	1,290	1,130	450	1,150
31	2,470	-	3,940	4,150	-	3,860	-	4,790	-	996	635	-
Total	74,560	131,500	106,520	125,680	107,540	105,670	334,030	170,070	137,680	32,254	27,623	27,435
Mean	2,405	4,585	3,456	4,054	3,708	3,409	11,130	5,466	4,589	1,040	891	914
Cfsm	1.80	2.91	2.28	2.63	2.48	2.26	7.39	3.64	3.05	0.690	0.591	0.607
In.	1.84	3.25	2.63	3.10	2.65	2.61	8.24	4.20	3.40	0.80	0.68	0.68
Calendar year 1951: Max	21,500	-	-	Min	782	-	Mean 3,542	Cfsm 2.35	In. 31.90			
Water year 1951-52: Max	19,300	-	-	Min	368	-	Mean 3,772	Cfsm 2.50	In. 34.08			

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28, Dec. 15-21, 27-29, Jan. 8-14, 21-25, 29-31, Feb. 14, 18-26. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Contoocook River at Peterboro, N. H.

Location.--Lat 42°51'45", long. 71°57'35", on left bank 1,100 ft downstream from mill dam, 1 mile south of Peterboro, Hillsboro County, and 1½ miles upstream from Nubanusit Brook.

Drainage area.--68.1 sq mi.

Records available.--July 1945 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 740 ft (from topographic map).

Average discharge.--7 years, 118 cfs.

Extremes.--Maximum discharge during year, 1,180 cfs Apr. 6 (gage height, 4.46 ft); minimum daily, 3.2 cfs Oct. 7.

1945-52: Maximum discharge, 2,640 cfs Nov. 26, 1950 (gage height, 6.35 ft), from rating curve extended above 1,700 cfs by logarithmic plotting; minimum daily, 1.2 cfs Oct. 18, 19, 1947.

Flood in September 1938 reached a stage of about 15 ft, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by mill and reservoirs above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	2.1	1.7	71
.8	4.0	2.0	124
.9	6.3	2.5	260
1.0	9.5	3.0	450
1.2	20	4.0	900
1.4	36	4.5	1,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	154	168	192	300	85	303	*294	129	75	4.0	13
2	*24	146	151	242	265	80	468	246	454	45	4.4	128
3	34	586	182	232	246	78	474	205	290	38	5.1	103
4	49	553	189	217	260	77	485	196	205	36	15	87
5	35	321	191	197	352	86	689	205	*217	31	17	57
6	14	283	259	180	319	94	954	205	179	23	17	52
7	3.2	371	245	175	285	91	*676	246	124	27	17	25
8	187	497	207	160	237	92	589	222	58	71	21	69
9	153	370	197	155	231	91	541	208	115	70	5.8	45
10	103	219	207	150	205	121	529	136	134	99	7.6	*36
11	117	183	175	145	192	138	553	55	127	*178	34	32
12	234	179	161	140	187	260	478	260	119	114	21	42
13	132	176	147	133	180	238	426	337	123	45	*51	36
14	68	263	*135	136	150	212	549	260	66	44	69	12
15	77	*325	125	179	*150	188	553	222	30	80	50	53
16	82	327	130	217	150	173	464	209	66	68	24	40
17	94	356	120	*199	153	160	387	134	88	70	32	30
18	75	292	130	267	127	150	384	76	94	55	49	38
19	81	236	130	246	157	149	332	113	80	63	36	75
20	40	248	120	296	164	147	316	160	82	18	16	51
21	27	216	200	286	143	*156	300	192	39	32	20	45
22	44	95	238	280	137	124	256	213	21	28	20	58
23	47	100	210	300	127	173	236	178	72	64	13	41
24	60	203	188	277	115	193	219	98	68	39	4.2	52
25	257	168	153	271	140	181	214	74	57	45	16	31
26	203	227	150	337	120	208	299	138	83	28	16	38
27	83	238	140	585	128	277	272	158	65	13	14	24
28	74	210	130	497	115	280	392	140	48	31	15	12
29	157	195	130	381	120	211	532	134	61	35	19	52
30	163	200	126	330	-	231	376	114	79	30	3.6	34
31	159	-	179	315	-	250	-	108	-	15	3.8	-
Total	2,914.2	7,935	5,213	7,717	5,415	5,024	13,247	5,536	3,374	1,610	640.5	1,411
Mean	94.0	264	168	249	187	162	442	179	112	51.9	20.7	47.0
Cfsm	1.38	3.88	2.47	3.66	2.75	2.38	6.49	2.63	1.64	0.762	0.304	0.690
In.	1.59	4.33	2.85	4.21	2.96	2.74	7.23	3.02	1.84	0.86	0.35	0.77

Calendar year 1951: Max 953 Min 3.2 Mean 161 Cfsm 2.36 In. 32.09  
Water year 1951-52: Max 954 Min 3.2 Mean 164 Cfsm 2.41 In. 32.77

Peak discharge (base, 700 cfs).--Nov. 3 (5:30 to 6:30 p.m.) 1,130 cfs (4.39 ft); Apr. 6 (1 a.m.) 1,180 cfs (4.46 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 15-21, 26-29, Jan. 7-12, Jan. 30 to Feb. 1, Feb. 13-16, 24-26, Feb. 29 to Mar. 3.

## Nubanusit Brook near Peterboro, N. H.

Location.--Lat 42°53'10", long. 71°58'25", on left bank  $1\frac{1}{2}$  miles downstream from Edward MacDowell Reservoir, 1.3 miles northwest of Peterboro, Hillsboro County, and  $1\frac{1}{2}$  miles upstream from mouth.

Drainage area.--46.9 sq mi.

Records available.--November 1920 to September 1931, July 1945 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 790 ft (from topographic map). Prior to Oct. 1, 1931, at site 550 ft downstream at different datum.

Average discharge.--18 years, 82.5 cfs.

Extremes.--Maximum discharge during year, 544 cfs Nov. 5 (gage height, 4.03 ft); minimum daily, 4.8 cfs Oct. 6, July 3.

1920-31, 1945-52: Maximum discharge, 1,130 cfs Apr. 11, 1931 (gage height, 5.59 ft, site and datum then in use), from rating curve extended above 380 cfs; minimum daily, 0.5 cfs Aug. 1, 1926.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by mills, Nubanusit Lake, and Edward MacDowell Reservoir since March 1950 (see p. 173), and other reservoirs above station.

Revisions (water years).--W 561: 1921(M). W 1051: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	4.2	1.5	52
.8	6.3	2.0	107
.9	9.3	2.5	182
1.0	14	3.0	281
1.2	26	4.0	535

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	91	56	130	229	82	206	189	146	6.4	43	8.2
2	41	84	57	154	159	82	251	*168	184	5.2	10	47
3	*39	106	80	177	149	93	303	135	230	4.8	5.8	44
4	52	97	78	174	160	87	340	102	236	7.5	44	46
5	55	262	79	151	175	90	352	92	240	6.1	6.4	46
6	4.8	517	111	138	191	93	95	84	206	5.0	41	17
7	7.5	304	143	135	184	97	206	78	208	60	41	5.8
8	86	264	149	115	160	91	347	42	189	68	43	41
9	107	422	140	105	144	87	470	50	200	67	28	42
10	95	322	144	101	140	96	487	53	149	72	6.8	42
11	85	142	136	96	140	100	484	55	114	*70	40	*43
12	96	177	120	74	130	175	481	124	100	28	41	41
13	88	177	106	76	110	231	481	184	90	5.6	47	5.5
14	82	162	*87	87	*105	204	496	193	71	53	*44	6.0
15	82	177	73	83	100	160	478	175	58	72	44	42
16	72	*186	76	104	87	140	481	155	71	70	23	40
17	64	187	85	115	97	129	465	123	70	51	7.5	40
18	65	142	82	*131	110	120	445	111	69	35	41	42
19	64	162	83	134	115	121	287	110	68	18	40	49
20	37	137	85	144	115	123	146	93	70	5.8	38	20
21	15	99	93	189	108	*128	175	104	25	32	42	15
22	51	80	132	190	100	126	128	126	7.1	40	46	44
23	51	95	154	196	96	138	119	120	56	47	18	43
24	36	97	151	213	87	162	131	99	72	51	5.8	43
25	58	97	140	205	96	154	101	95	71	44	40	44
26	79	117	138	191	96	162	111	124	69	8.4	38	44
27	81	112	120	163	99	221	131	128	66	6.0	39	7.1
28	82	92	110	274	94	254	154	115	31	36	40	7.6
29	106	86	94	405	93	202	180	114	12	43	41	42
30	106	76	88	365	-	193	191	120	8.7	47	5.8	44
31	99	-	114	340	-	210	-	137	-	48	5.2	-
Total	2,023.3	5,049	3,304	5,155	3,669	4,351	8,722	3,599	3,186.8	1,112.8	955.3	1,001.2
Mean	65.3	168	107	166	127	140	291	116	106	35.9	30.8	33.4
Cfs/m	1.39	3.58	2.28	3.54	2.71	2.99	6.20	2.47	2.26	0.765	0.657	0.712
In.	1.60	4.00	2.62	4.09	2.91	3.45	6.92	2.85	2.53	0.88	0.76	0.79

Calendar year 1951: Max 532 Min 4.8 Mean 111 Cfs/m 2.37 In. 32.13  
Water year 1951-52: Max 517 Min 4.8 Mean 115 Cfs/m 2.45 In. 33.40

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 16, 17, 20, 25, 27, 28, Jan. 7, 8, 11, 22, 25, 30, 31, Feb. 8, 10-16, 19, 20, 23-26, Mar. 1-3, 15, 16. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## North Branch Contoocook River near Antrim, N. H.

Location.--Lat 43°04'55", long. 71°58'40", on right bank at North Branch, 4 miles north-west of Antrim, Hillsboro County, and 6 miles upstream from mouth.

Drainage area.--54.8 sq mi.

Records available.--August 1924 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 882.38 ft above mean sea level (levels by Corps of Engineers). Prior to Nov. 14, 1932, staff gage and Nov. 14, 1932, to Jan. 7, 1941, float gage, at same site and datum.

Average discharge.--28 years, 99.0 cfs.

Extremes.--Maximum discharge during year, 1,020 cfs Apr. 7 (gage height, 5.07 ft); minimum, 1.3 cfs Aug. 29.

1924-52: Maximum discharge, 5,000 cfs (revised) Mar. 19, 1936 (gage height, 9.30 ft, from floodmarks), from rating curve extended above 1,600 cfs on basis of slope-area determinations at gage heights 8.4 and 9.3 ft; minimum, 0.3 cfs Sept. 18, 1948.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
601.....	1925	Feb. 14, 1925	1,170	†5.40
621.....	1926	Apr. 26, 1926	1,340	†5.74
641.....	1927	Mar. 20, 1927	615	†4.10
661.....	1928	Nov. 5, 1927	1,750	†6.40
681.....	1929	Apr. 27, 1929	717	†4.38
696.....	1930	Mar. 26, 1930	386	†3.35
741.....	1933	Apr. 19, 1933	1,950	†6.67
756.....	1934	Apr. 13, 1934	1,740	†6.39
781.....	1935	Jan. 11, 1935	940	†4.90
801.....	1936	Mar. 19, 1936	5,000	†9.30
851.....	1938	Sept. 22, 1938	3,640	†8.40
871.....	1939	Apr. 22, 1939	985	†5.00
891.....	1940	May 4, 1940	1,320	†5.70
921.....	1941	Feb. 11, 1941	a440	-
1001.....	1944	June 26, 1944	1,130	5.32
1051.....	1946	Mar. 9, 1946	a550	-

† From graph based on gage readings.

‡ From floodmarks.

a Estimated; not previously determined.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Highland Lake and several ponds above station.

Revisions.--W 756: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1926, 1928, 1933-36, 1938-40, and 1944, superseding those published in Water-Supply Papers 621, 661, 741, 756, 781, 798, 801, 851, 867, 871, 891, and 1001, are given herewith. Figures of discharge at indicated time for the periods Mar. 14-25, 1936, and Sept. 20-27, 1938, published in Water-Supply Papers 798 and 867, respectively, are too high.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1926		1934		1939		1940	
Apr. 24.....	1,030	Apr. 16.....	515	Sept. 26.....	370	Apr. 20.....	615
25.....	1,220	17.....	545	27.....	283	21.....	615
26.....	1,270	18.....	545			22.....	515
27.....	940	19.....	515			23.....	427
		1935		1939		24.....	373
1927		Jan. 11.....	850	Apr. 14.....	282	25.....	373
Nov. 4.....	1,160	12.....	650	15.....	326	26.....	373
5.....	1,500	13.....	515	17.....	349	27.....	399
6.....	1,050			18.....	399	28.....	456
		1936		19.....	427	29.....	545
1933		Mar. 14.....	1,130	20.....	580	30.....	725
Apr. 8.....	515	15.....	984	21.....	765	1.....	850
9.....	545	16.....	702	22.....	895	2.....	985
10.....	545	17.....	599	23.....	940	3.....	1,270
17.....	580	18.....	1,240	24.....	940	4.....	1,320
18.....	895	19.....	4,350	25.....	895	5.....	1,120
19.....	1,620	20.....	2,700	26.....	725	6.....	940
20.....	1,380	21.....	1,430	27.....	685	7.....	650
21.....	1,030	22.....	1,520	28.....	580	8.....	456
22.....	805	23.....	1,240	29.....	545	9.....	373
23.....	685	24.....	819	30.....	485	10.....	515
24.....	580	25.....	674			June 1.....	580
25.....	580	26.....	592	1940		2.....	615
26.....	580	27.....	596	Apr. 8.....	373	3.....	545
27.....	815	28.....	695	9.....	456	4.....	399
28.....	515	29.....	650	10.....	580	5.....	304
		30.....	556	11.....	650		
				12.....	765		
1934		1938		13.....	1,030	June 24.....	832
Apr. 3.....	650	Sept. 20.....	446	14.....	1,030	25.....	1,030
4.....	725	21.....	2,610	15.....	850	26.....	864
5.....	685	22.....	3,170	16.....	515	27.....	548
6.....	580	23.....	1,840	17.....	427		
12.....	821	24.....	893	18.....	427		
13.....	1,510	25.....	578	19.....	515		
14.....	1,210						

## North Branch Contoocook River near Antrim, N. H.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1926, 1928, 1933-36, 1938-40, 1944

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April 1926.....	-	1,270	62	318	5.80	6.48
Water year 1925-26.....	-	1,270	4.9	83.4	1.52	20.67
November 1927.....	-	1,500	40	276	5.04	5.61
Water year 1927-28.....	-	1,500	11	149	2.72	56.97
April 1933.....	-	1,620	138	567	10.35	11.54
Water year 1932-33.....	-	1,620	5.7	121	2.21	29.87
April 1934.....	-	1,510	153	500	9.12	10.18
Water year 1933-34.....	-	1,510	4.3	101	1.84	24.90
Calendar year 1934.....	37,413.7	1,510	4.3	103	1.88	25.38
January 1935.....	5,235	850	55	169	3.08	3.55
Water year 1934-35.....	38,963.7	850	5.5	107	1.95	26.41
Calendar year 1935.....	33,360.1	850	5.5	91.4	1.67	22.61
March 1936.....	22,791	4,350	27	735	13.4	15.47
Water year 1935-36.....	40,000.6	4,350	1.8	109	1.99	27.16
Calendar year 1936.....	43,790.3	4,350	1.8	120	2.19	29.74
September 1938.....	11,207.6	3,170	8.0	374	6.82	7.61
Water year 1937-38.....	51,947.1	3,170	4.8	142	2.59	35.28
Calendar year 1938.....	51,876.6	3,170	8.0	142	2.59	35.23
April 1939.....	12,053	940	136	402	7.54	8.18
Water year 1938-39.....	36,884.9	940	2.1	101	1.84	25.05
Calendar year 1939.....	29,800.9	940	2.1	81.6	1.49	20.24
April 1940.....	14,719	1,030	145	491	8.96	9.99
May.....	11,732	1,320	106	378	6.90	7.96
June.....	4,778	615	34	159	2.90	3.24
Water year 1939-40.....	38,548.6	1,320	3.0	105	1.92	26.15
Calendar year 1940.....	39,699.9	1,320	3.0	108	1.97	26.94
June 1944.....	4,976.6	1,090	8.3	166	3.03	3.38
Water year 1943-44.....	33,109.5	1,090	2.4	90.5	1.65	22.47
Calendar year 1944.....	33,578.3	1,090	2.4	91.7	1.67	22.80

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.0	1.2	1.5	67
.1	2.1	2.0	123
.2	3.4	3.0	304
.4	7.2	4.0	580
.6	13	5.1	1,030
1.0	30		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	143	110	175	205	82	158	*259	190	27	4.4	2.7
2	42	137	105	205	185	80	211	222	442	24	4.1	*24
3	*40	334	105	210	170	80	257	190	456	21	3.9	14
4	39	548	100	205	180	76	315	163	396	17	*3.7	15
5	38	594	115	190	230	85	484	138	371	15	3.6	12
6	36	491	198	195	220	88	908	122	*319	14	3.9	8.4
7	37	416	232	170	200	88	898	122	255	12	3.9	6.2
8	139	482	230	150	180	88	859	99	194	10	3.6	4.8
9	183	491	222	150	165	87	693	90	152	9.4	3.3	4.1
10	199	442	220	135	150	83	604	82	120	12	3.3	3.4
11	199	366	203	120	135	100	618	77	100	24	4.2	3.7
12	230	297	180	125	125	214	608	200	87	21	3.9	3.6
13	226	245	155	115	115	180	552	253	77	20	5.3	2.8
14	214	211	125	115	115	165	536	245	65	17	4.8	2.8
15	190	218	100	120	*115	145	552	232	56	14	4.2	2.7
16	165	*220	95	150	110	135	542	225	46	12	4.4	3.4
17	142	233	95	150	105	124	518	199	40	10	4.8	3.4
18	126	224	*90	160	115	106	497	180	36	*8.7	4.2	3.6
19	113	201	90	160	120	97	473	160	30	8.0	3.4	5.6
20	102	175	100	165	115	96	447	142	27	7.7	3.0	7.0
21	90	150	140	180	110	94	410	165	23	7.2	2.7	6.2
22	82	130	185	140	105	100	363	183	20	6.8	2.4	5.9
23	75	120	175	*210	100	109	313	176	18	6.4	2.3	5.9
24	71	129	170	200	95	113	261	160	16	5.9	2.1	5.9
25	106	138	160	170	95	110	230	152	20	5.3	1.9	5.5
26	133	125	150	200	92	*116	239	175	22	4.8	1.8	5.1
27	143	130	140	280	90	149	250	173	26	4.8	1.7	4.6
28	144	125	130	320	88	166	247	154	26	4.6	1.6	3.9
29	165	120	120	320	85	158	313	134	26	4.6	1.4	3.6
30	163	115	120	250	-	150	308	124	29	4.4	1.4	3.4
31	152	-	150	230	-	154	-	120	-	4.2	1.5	-
Total	3,830	7,750	4,510	5,665	3,915	3,618	13,744	5,102	3,685	363.0	100.7	183.2
Mean	124	258	145	183	135	117	458	165	123	11.7	3.25	6.11
Cfsm	2.26	4.71	2.65	3.34	2.46	2.14	8.36	3.01	2.24	0.214	0.089	0.111
In.	2.60	5.26	3.06	3.84	2.66	2.46	9.33	3.46	2.50	0.25	0.07	0.12
Calendar year 1951: Max			1,180		Min 22		Mean 142		Cfsm 2.59		In. 35.14	
Water year 1951-52: Max			998		Min 1.4		Mean 143		Cfsm 2.61		In. 35.61	

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 4, Dec. 12 to Mar. 8, Mar. 14-16. Discharge for period Sept 3-30, computed from twice-daily tape-gage readings. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Beards Brook near Hillsboro, N. H.

Location.--Lat 43°06'50", long. 71°55'35", on right bank 300 ft upstream from bridge on State Highway 9, 500 ft upstream from mouth, and  $1\frac{1}{2}$  miles west of Hillsboro, Hillsboro County.

Drainage area.--55.4 sq mi.

Records available.--November 1945 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 595 ft (from topographic map).

Average discharge.--6 years (1946-52), 93.7 cfs.

Extremes.--Maximum discharge during year, 1,660 cfs Apr. 6 (gage height, 5.90 ft); minimum, 1.8 cfs Aug. 30.

1945-52: Maximum discharge, 2,070 cfs Nov. 26, 1950 (gage height, 6.59 ft), from rating curve extended above 1,200 cfs by logarithmic plotting; minimum, 1.1 cfs Oct. 3, 1948.

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

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1948, superseding those published in Water-Supply Paper 1111, are given herewith:

June 8, 1948..... 174

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
June.....	3,093	210	48	103	1.86	2.08
Water year 1947-48.....	31,421.2	1,380	1.2	85.9	1.55	21.10
Calendar year 1948.....	31,706.9	1,380	1.2	86.6	1.56	21.30

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	1.6	1.6	14	3.0	308
1.2	2.7	1.7	19	4.0	705
1.3	4.4	1.9	34	5.0	1,180
1.4	6.8	2.2	72	6.0	1,720
1.5	9.9	2.5	137		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	91	82	180	170	64	214	218	296	24	7.1	3.0
2	23	89	87	220	160	62	326	167	888	18	7.1	4.5
3	*22	586	91	200	150	60	420	137	448	14	5.2	28
4	22	863	87	175	200	57	496	119	286	12	*4.6	*20
5	24	480	112	150	300	55	745	104	210	11	4.2	14
6	22	315	316	135	270	60	1,480	96	*155	9.6	4.6	9.9
7	22	307	323	120	230	65	1,020	93	116	9.6	5.2	7.7
8	248	564	222	110	180	84	786	86	93	8.6	5.0	6.2
9	249	428	210	100	150	62	636	79	79	8.3	4.4	5.4
10	146	304	214	95	130	60	600	70	70	13	4.9	5.0
11	114	228	160	90	120	90	714	68	60	48	8.0	4.6
12	193	187	130	85	110	200	604	414	53	33	8.6	4.2
13	177	155	105	80	100	220	468	432	47	21	9.6	3.8
14	129	143	85	80	95	200	528	290	39	15	8.0	3.6
15	102	187	70	80	85	160	588	214	33	11	5.8	3.5
16	87	187	60	160	85	130	492	200	28	9.0	5.0	4.0
17	74	214	62	130	80	110	448	167	25	*7.4	5.6	4.4
18	68	190	64	160	78	105	420	137	23	6.2	8.9	4.0
19	63	*152	67	180	88	100	393	116	21	5.8	7.1	6.0
20	57	121	74	150	84	95	356	102	19	5.8	5.2	8.0
21	53	100	100	200	60	100	301	181	16	5.4	4.6	6.2
22	48	90	190	150	75	105	228	193	14	5.4	4.0	5.0
23	47	93	160	210	72	130	193	152	14	5.2	3.5	4.4
24	46	119	130	200	72	145	161	116	12	5.0	3.1	4.6
25	118	127	110	170	71	140	146	116	20	4.4	2.7	4.8
26	140	100	100	150	70	155	207	177	24	3.6	2.4	4.8
27	107	105	90	240	69	*225	190	155	26	4.2	2.2	4.4
28	95	92	85	300	68	280	226	116	23	4.4	2.0	4.4
29	137	88	80	280	67	240	401	96	20	4.0	2.0	4.4
30	121	84	80	210	-	215	*304	96	28	3.5	2.0	4.0
31	100	-	100	180	-	224	-	102	-	3.5	2.1	-
Total	2,878	6,789	3,866	4,970	3,509	3,958	14,091	4,809	3,186	338.9	154.7	237.3
Mean	92.8	228	125	160	121	128	470	155	106	10.9	4.99	7.91
Cfsm	1.69	4.08	2.28	2.89	2.18	2.31	9.48	2.80	1.91	0.197	0.090	0.143
In.	1.93	4.56	2.60	3.34	2.36	2.66	9.46	3.23	2.14	0.23	0.10	0.16
Calendar year 1951: Max	1,300			Min 16			Mean 130		Cfsm 2.35		In. 31.95	
Water year 1951-52: Max	1,480			Min 2.0			Mean 133		Cfsm 2.40		In. 32.77	

Peak discharge (base, 910 cfs).--Nov. 4 (3 to 3:30 a.m.) 1,180 cfs (5.01 ft); Apr. 6 (8:30 a.m.) 1,660 cfs (5.90 ft); June 2 (5 to 6 a.m.) 1,080 cfs (4.80 ft).

\* Discharge measurement made on this day

Note.--Stage-discharge relation affected by ice Nov. 20-22, Nov. 26 to Dec. 4, Dec. 11 to Mar. 30 (no gage-height record Dec. 23-31, Jan. 30 to Feb. 1).

## Contoocook River near Henniker, N. H.

Location.--Lat 43°09'10", long. 71°51'25", on right bank 1.6 miles downstream from Sand Brook and 2.2 miles southwest of Henniker, Merrimack County.

Drainage area.--368 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 475 ft (from topographic map). Prior to Dec. 18, 1939, staff gage at same site and datum.

Average discharge.--13 years, 608 cfs.

Extremes.--Maximum discharge during year, 6,240 cfs Apr. 6 (gage height, 11.52 ft); minimum daily, 60 cfs Aug. 18.

1939-52: Maximum discharge, 8,710 cfs June 26, 1944 (gage height, 13.13 ft); minimum daily, 19 cfs Oct. 29, 1940.

Maximum discharge known, 22,200 cfs Sept. 21, 1938 (gage height, 21.3 ft, from floodmarks), by computation of flow over dam 0.8 mile above station.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplants and by Nubanusit Lake, Edward MacDowell Reservoir (see p. 173) since March 1950, Highland Lake, Jackman Reservoir, and other reservoirs above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

4.4	55	6.5	520	9.0	2,270
4.6	76	7.0	730	10.0	3,690
5.0	130	7.5	980	11.0	5,340
5.5	225	8.0	1,320	11.5	6,200
6.0	356	8.5	1,700		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	762	775	958	1,350	530	1,420	1,820	946	150	180	80
2	290	721	627	1,190	1,200	500	1,810	1,330	2,810	145	120	120
3	340	1,550	703	1,250	1,150	530	2,350	1,150	2,670	130	80	280
4	*362	3,320	775	1,150	1,200	600	2,850	855	2,040	65	65	*210
5	356	3,020	820	1,050	1,500	586	3,400	881	1,690	88	90	190
6	336	2,260	1,180	840	1,650	632	5,730	865	*1,470	90	105	182
7	231	2,140	1,410	940	1,600	885	5,420	830	1,250	140	*110	130
8	453	2,750	1,310	840	1,300	703	*3,980	816	1,100	145	110	77
9	619	2,710	1,120	800	1,200	672	3,460	726	900	150	90	201
10	470	2,270	1,170	760	1,100	640	3,520	619	780	250	105	249
11	437	1,860	1,120	740	1,050	716	3,740	547	700	400	105	247
12	606	1,400	974	710	960	986	3,680	1,240	620	380	150	249
13	685	1,210	870	600	860	1,280	3,270	1,860	600	340	155	278
14	590	1,180	780	690	820	1,360	3,150	1,790	500	300	155	118
15	619	1,360	691	730	840	1,200	3,440	1,480	370	240	150	137
16	602	1,450	640	881	*840	1,050	3,330	1,310	380	240	170	274
17	566	1,540	600	992	600	952	2,940	1,170	370	*249	90	300
18	546	1,510	*600	1,050	500	886	2,430	860	350	279	60	220
19	524	*1,330	580	1,240	660	876	2,300	840	350	252	100	253
20	399	1,030	600	1,180	720	739	2,240	793	330	114	110	159
21	305	964	750	1,350	670	798	2,020	980	300	136	135	83
22	356	802	1,000	1,330	610	835	1,740	1,140	250	224	155	111
23	502	730	1,150	*1,310	580	825	1,470	1,070	270	223	130	299
24	505	798	1,100	1,400	550	1,030	1,260	920	350	210	90	300
25	498	784	1,000	1,300	580	1,070	998	685	520	207	70	227
26	636	850	920	1,210	600	1,100	1,110	1,020	500	197	80	201
27	698	908	840	1,540	620	*1,380	1,140	1,160	360	105	100	165
28	488	903	780	2,080	610	1,670	1,360	947	310	77	140	114
29	721	825	740	2,090	580	1,680	2,030	855	230	174	140	82
30	820	811	700	1,800	-	1,360	*2,240	757	160	190	105	197
31	775	-	757	1,400	-	1,410	-	806	-	200	65	-
Total	15,605	43,748	27,082	35,381	26,500	29,261	79,858	32,122	23,476	6,110	3,510	5,733
Mean	503	1,458	874	1,141	914	944	2,662	1,036	763	197	113	191
Cfs/m	1.37	3.96	2.38	3.10	2.48	2.57	7.23	2.82	2.13	0.535	0.307	0.519
In.	1.58	4.42	2.74	3.58	2.68	2.96	6.07	3.25	2.57	0.62	0.35	0.58

Calendar year 1951: Max 6,540 Min 91

Water year 1951-52: Max 5,730 Min 60

Mean 867

Mean 897

Cfs/m 2.36

Cfs/m 2.44

In. 31.98

In. 33.20

\* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-3, Jan. 30 to Feb. 15, June 7 to July 16, July 30 to Sept. 3; discharge estimated on basis of recorded range in stage, 1 discharge measurement, weather records, records for Contoocook River at Penacook, and records for other stations in Contoocook River basin. Stage-discharge relation affected by ice Dec. 16-30, Jan. 3-13, 24, 25, Feb. 16 to Mar. 4, and during parts of period of no gage-height record in winter. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Warner River at Davisville, N. H.

Location.--Lat 43°15'05", long. 71°43'50", on left bank 60 ft downstream from highway bridge in Davisville, Merrimack County, 2½ miles northwest of Contoocook, and 2.4 miles upstream from mouth.

Drainage area.--146 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map). Prior to Dec. 22, 1939, chain gage at bridge 60 ft upstream at same datum.

Average discharge.--13 years, 227 cfs.

Extremes.--Maximum discharge during year, 3,200 cfs Apr. 6 (gage height, 8.96 ft); minimum, 14 cfs Aug. 31, Sept. 1.

1939-52: Maximum discharge, 3,950 cfs June 25, 1944 (gage height, 9.64 ft), from rating curve extended above 1,900 cfs by logarithmic plotting; minimum, 4.4 cfs Aug. 27-29, 1949.

Flood in September 1938 reached a stage of 12.8 ft, from information by local residents.

Remarks.--Records excellent except those for periods of ice effect, which are good, and those for period of no gage-height record, which are fair. Prior to 1948, slight diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

3.8	52	3.3	14	5.0	322
4.1	94	3.5	26	6.0	810
4.5	172	3.8	56	7.0	1,810
		4.2	115	9.0	3,240
		4.5	172		

Note.--Same as following table above 4.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	268	237	346	396	184	565	651	388	80	16	15
2	59	259	243	392	384	179	*695	550	1,630	66	17	77
3	*56	608	252	446	388	177	969	472	1,400	55	17	74
4	57	1,690	246	432	396	170	1,140	410	*1,050	50	16	63
5	57	1,270	*262	388	504	170	1,430	362	840	45	*16	*52
6	54	988	433	362	590	180	2,920	326	695	41	17	40
7	53	854	610	350	565	193	2,600	307	565	37	*19	31
8	266	*1,160	550	495	495	195	*2,260	285	464	35	19	27
9	504	1,110	504	304	459	193	1,920	262	379	33	18	27
10	423	936	508	289	401	188	1,750	237	315	35	19	24
11	326	774	468	268	375	198	1,770	222	268	93	22	22
12	423	651	410	252	340	372	1,700	820	243	*96	22	22
13	459	560	345	243	285	446	1,460	1,010	219	74	24	22
14	384	504	280	237	275	436	1,570	744	183	57	22	20
15	311	500	215	234	259	365	1,520	615	170	48	19	18
16	262	495	190	285	246	355	1,450	585	149	42	18	20
17	228	513	a190	*307	243	325	1,340	536	151	37	23	20
18	203	504	a180	322	219	305	1,230	472	124	32	41	20
19	188	450	a180	355	228	500	1,150	414	113	28	37	23
20	174	396	a190	340	234	290	1,050	358	103	25	29	24
21	162	358	a260	370	231	296	943	410	90	24	24	22
22	151	296	a360	318	225	304	804	513	82	21	21	20
23	143	282	a360	346	219	330	*700	468	77	20	18	20
24	139	300	350	418	206	358	615	405	70	19	17	22
25	226	318	326	358	208	358	536	354	67	18	15	22
26	304	296	300	346	206	384	550	472	68	18	15	21
27	292	280	282	422	205	500	545	504	74	18	16	24
28	255	280	259	580	198	810	536	432	70	18	16	22
29	311	275	249	580	190	600	840	358	62	17	15	21
30	315	246	246	486	-	570	786	334	82	16	15	20
31	292	-	282	423	-	595	-	304	-	16	14	-
Total	7,141	17,391	9,787	11,117	9,168	10,146	37,124	13,992	10,181	1,214	617	851
Mean	230	580	316	359	216	327	1,237	516	339	39.2	19.9	28.4
Cfsm	1.59	3.97	2.16	2.46	2.16	2.24	8.47	3.09	2.32	0.268	0.156	0.195
In.	1.82	4.43	2.49	2.83	2.34	2.58	9.46	3.56	2.59	0.31	0.16	0.22

Calendar year 1951: Max 3,210 Min 45 Mean 348 Cfsm 2.38 In. 32.31  
Water year 1951-52: Max 2,920 Min 14 Mean 358 Cfsm 2.41 In. 32.79

Peak discharge (base, 1,200 cfs).--Nov. 4 (4 to 6 a.m.) 1,810 cfs (7.44 ft); Nov. 8 (3 to 6 p.m.) 1,220 cfs (6.64 ft); Apr. 6 (10 a.m.) 3,200 cfs (8.96 ft); June 2 (11 a.m.) 1,920 cfs (7.57 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Smith River near Bristol.

Note.--Stage-discharge relation affected by ice Nov. 27-29, Dec. 15-16, 24, Jan. 19-21, Feb. 6, 12, 13, Mar. 5, 6, 15-20, 27, and during much of period of no gage-height record.



## Blackwater River near Webster, N. H.

Location.--Lat 43°17'50", long. 71°41'40", on left bank 0.2 mile west of Dingit Corner, 2½ miles southeast of Webster, Merrimack County, and 6½ miles upstream from mouth.

Drainage area.--129 sq mi.

Records available.--May 1918 to September 1920, February 1927 to September 1952. Published as "near Contoocook" 1918-20, 1927-35. Records published for both sites October 1934 to September 1935.

Gage.--Water-stage recorder at present site since Oct. 1, 1934. Altitude of gage is 430 ft (from topographic map). Prior to Oct. 1, 1935, chain gage at site 5 miles downstream at different datum.

Average discharge.--25 years (1927-52), 209 cfs (adjusted to present site).

Extremes.--Maximum discharge during year, 2,390 cfs Apr. 10 (gage height, 7.18 ft); minimum, 18 cfs Apr. 8; minimum daily, 25 cfs Apr. 7.

1918-20, 1927-52: Maximum discharge, 11,000 cfs Mar. 19, 1936 (gage height, 11.78 ft, from floodmarks), from rating curve extended above 6,700 cfs on basis of slope-area and critical-depth determinations of peak flow; minimum, 3 cfs Sept. 17, 1941 (gage height, 1.20 ft); minimum daily, 10 cfs Aug. 14, 1950.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated. Gage heights are from graphs based on gage readings.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
501.....	1919	Mar. 30, 1919	2,480	14.5
501.....	1920	Mar. 28, 1920	2,850	16.0
641.....	1927	Mar. 18, 1927	1,790	11.6
661.....	1928	Nov. 6, 1927	2,700	15.4
681.....	1929	Mar. 25, 1929	1,680	11.1
696.....	1930	Mar. 11, 1930	1,360	9.5
711.....	1931	Apr. 13, 1931	1,560	10.5
726.....	1932	Apr. 14, 1932	2,080	12.9
741.....	1933	Apr. 20, 1933	2,950	16.4
756.....	1934	Apr. 14, 1934	2,950	16.4

Remarks.--Records excellent except those below 50 cfs and those for periods of ice effect or no gage-height record, which are good. High flow regulated by Blackwater Reservoir since 1941 (see p. 173). Some regulation at low flow by mill above station.

Revisions (water years).--W 696: Drainage area. W 821: 1936(M). W 851: 1936. W 867: 1936 (flood-report data). Revised figures of discharge, in cubic feet per second, for periods in the water years 1919, 1920, 1927, 1929-32, superseding those published in Water-Supply Papers 501, 641, 681, 696, 711, and 726, and revised calendar-year figures for 1936, superseding those published in Water-Supply Paper 821, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1919		1920		1929	
June 8.....	164	Apr. 26.....	987	Apr. 9.....	784
		27.....	801	10.....	784
		28.....	892	11.....	672
Mar. 15.....	642	29.....	1,380	18.....	642
16.....	837	30.....	1,480	19.....	734
17.....	911	June 28.....	100	20.....	718
18.....	987			21.....	750
19.....	987	1927		22.....	911
20.....	968	Mar. 15.....	855	23.....	1,010
21.....	911	16.....	1,240	24.....	855
22.....	702	17.....	1,600	25.....	718
23.....	855	18.....	1,640	26.....	734
24.....	767	19.....	1,480	27.....	837
25.....	1,060	20.....	1,340	28.....	855
26.....	1,280	21.....	1,200	29.....	750
27.....	1,660	22.....	987	30.....	672
28.....	2,280	23.....	784		
29.....	2,600	24.....	627	1930	
30.....	2,100	26.....	396	Mar. 9.....	892
31.....	1,660			10.....	1,240
Apr. 1.....	1,260	1929		11.....	1,260
2.....	1,180	Mar. 15.....	657	12.....	873
3.....	1,060	16.....	950	13.....	767
4.....	987	17.....	1,120	14.....	642
5.....	1,080	18.....	1,180	26.....	734
6.....	1,100	19.....	1,140	27.....	1,080
7.....	1,260	20.....	1,060	28.....	1,140
8.....	1,060	21.....	1,040	29.....	801
9.....	734	22.....	1,140		
14.....	1,260	23.....	1,400	1931	
15.....	1,640	24.....	1,640	Apr. 11.....	1,120
16.....	1,460	25.....	1,840	12.....	1,400
17.....	1,060	26.....	1,380	13.....	1,520
18.....	750	27.....	1,060	14.....	1,180
19.....	873	28.....	855		
20.....	1,010	29.....	718	1932	
21.....	801	Apr. 2.....	687	Apr. 12.....	1,280
22.....	855	3.....	718	13.....	1,880
23.....	1,060	4.....	642	14.....	1,990
24.....	1,280	7.....	687	16.....	1,440
25.....	1,540	8.....	734		

## Blackwater River near Webster, N. H.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1919, 1920, 1927, 1929-32

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
June 1919.....	-	290	68	138	1.03	1.15
Water year 1918-19.....	-	2,290	25	240	1.79	24.85
March 1920.....	-	2,600	54	739	5.51	6.36
April.....	-	1,640	439	1,020	7.61	8.50
June.....	-	260	75	154	1.15	1.28
Water year 1919-20.....	-	2,600	30	274	2.04	27.87
March 1927.....	-	1,640	72	526	3.93	4.53
Water year 1926-27.....	-	-	-	-	-	-
March 1929.....	-	1,640	88	680	5.07	5.85
April.....	-	1,010	330	669	4.99	5.57
Water year 1928-29.....	-	1,640	25	210	1.57	21.27
March 1930.....	-	1,260	204	530	3.96	4.56
Water year 1929-30.....	-	1,260	22	152	1.13	15.43
April 1931.....	-	1,520	234	676	5.04	5.63
Water year 1930-31.....	-	1,520	20	164	1.22	16.64
April 1932.....	-	1,990	290	843	6.29	7.02
Water year 1931-32.....	-	1,990	24	174	1.30	17.66
Calendar year 1936.....	92,557	8,030	22	253	1.96	26.68

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	22	4.0	381
2.2	36	4.5	550
2.5	63	5.0	790
3.0	135	6.0	1,420
3.5	241	7.5	2,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	240	190	240	315	165	448	*546	326	106	42	33
2	77	230	190	240	255	160	*508	435	430	99	40	46
3	74	400	215	265	250	160	655	371	480	85	35	11c
4	*71	850	215	305	255	155	834	331	*1,400	76	33	13c
5	70	1,170	225	310	315	155	976	302	1,400	71	*35	*86
6	68	1,220	360	285	385	160	323	281	1,310	64	39	66
7	75	990	510	265	410	170	25	268	1,180	61	40	53
8	190	*720	590	250	375	172	275	255	661	59	42	44
9	438	857	480	230	320	168	1,100	236	416	55	42	40
10	594	887	440	220	290	164	1,900	223	362	56	42	38
11	460	580	395	210	265	170	2,560	209	328	77	42	36
12	360	475	350	200	250	243	2,320	397	299	110	42	34
13	270	415	300	195	220	337	2,260	752	270	112	42	32
14	250	380	250	190	205	371	2,190	941	243	*90	42	31
15	235	370	200	185	200	355	2,110	685	216	73	42	30
16	220	370	165	215	195	315	2,040	508	189	63	45	31
17	200	360	160	250	190	291	1,980	448	164	55	56	30
18	180	360	150	270	180	265	1,870	391	154	51	71	30
19	160	350	155	300	185	251	1,670	334	144	50	68	33
20	150	315	165	310	190	241	1,380	297	133	51	65	32
21	140	265	205	310	190	241	1,200	319	121	38	56	33
22	130	235	245	285	185	246	1,080	407	110	42	45	32
23	120	225	305	265	175	263	851	416	104	47	40	33
24	130	230	305	315	170	288	685	349	97	41	35	34
25	210	235	280	345	162	299	578	299	96	39	33	35
26	265	240	260	350	162	308	522	371	97	40	30	33
27	300	248	240	355	162	368	487	498	100	40	28	34
28	260	225	220	380	165	476	473	487	96	44	33	37
29	260	220	205	410	170	518	554	378	103	43	37	36
30	275	205	215	400	-	487	630	319	108	42	35	32
31	260	-	230	370	-	459	-	294	-	41	33	-
Total	6,576	13,867	8,415	8,720	6,791	8,421	34,284	12,547	11,137	1,921	1,310	1,304
Mean	212	462	271	281	234	272	1,143	398	371	62.0	42.3	43.5
Cfsm	1.64	3.58	2.10	2.18	1.81	2.11	8.86	3.09	2.88	0.481	0.328	0.337
In.	1.90	4.00	2.43	2.51	1.96	2.43	9.88	3.56	3.21	0.55	0.38	0.38
Calendar year 1951: Max	2,310				Min 49		Mean 300		Cfsm 2.33		In. 31.60	
Water year 1951-52: Max	2,360				Min 25		Mean 314		Cfsm 2.43		In. 33.19	

\* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-3, Oct. 11 to Nov. 7, Nov. 11-26, Nov. 28 to Jan. 7, Jan. 22 to Feb. 1, June 2-4, June 27 to July 2, Aug. 1-4, Aug. 7 to Sept. 4; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, stage graph based on records for Blackwater Reservoir, and records for Warner River at Davisville. Stage-discharge relation affected by ice Jan. 6-21, Feb. 2 to Mar. 5, Mar. 15, 16.

## Contoocook River at Penacook, N. H.

Location.--Lat 43°17'10", long. 71°36'00", on right bank at Penacook, Merrimack County, half a mile upstream from mouth.

Drainage area.--766 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 273.09 ft above mean sea level, datum of 1929.

Average discharge.--24 years, 1,240 cfs.

Extremes.--Maximum discharge during year, 10,900 cfs Apr. 6 (gage height, 6.57 ft); minimum, 150 cfs Aug. 6; minimum daily, 164 cfs Aug. 27.

1928-52: Maximum discharge, 46,800 cfs Mar. 20, 1936 (gage height, 14.26 ft, from floodmarks); minimum, 44 cfs Oct. 20, 1950; minimum daily, 81 cfs Aug. 19, 1950.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage-height (feet)
711.....	1931	Apr. 13, 1931	8,750	5.82
-	1941	Feb. 10, 1941	†3,600	-
-	1946	Mar. 11, 1946	†6,500	-

† Not previously published.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by mills and by Nubanusit Lake, Edward MacDowell Reservoir since March 1950, Highland Lake, Jackman Reservoir, Blackwater Reservoir since 1941 (see p. 173 ), and other reservoirs above station.

Revisions (water years).--W 756: 1933(M), drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1929 and 1931, superseding those published in Water-Supply Papers 681 and 711, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1929		1929		1931		1931	
Feb. 5.....	680	Mar. 5.....	600	Aug. 4.....	265	Sept. 1.....	216
6.....	650	6.....	650	5.....	240	2.....	193
7.....	700	7.....	720	6.....	211	3.....	270
8.....	760	8.....	780	7.....	188	4.....	390
9.....	740	9.....	700	8.....	184	5.....	377
10.....	720	10.....	680	9.....	216	6.....	308
11.....	680	11.....	650	10.....	230	7.....	250
12.....	640	12.....	640	11.....	220	8.....	220
13.....	600	13.....	1,100	12.....	255	9.....	211
14.....	570	1931	Apr. 2.....	13.....	338	10.....	202
15.....	550			14.....	397	11.....	175
16.....	530			15.....	468	12.....	167
17.....	520			16.....	370	13.....	167
18.....	550			17.....	338	14.....	171
19.....	580			18.....	314	15.....	163
20.....	530			19.....	308	16.....	147
21.....	500			20.....	292	17.....	151
22.....	490			21.....	303	18.....	163
23.....	480			22.....	308	19.....	155
24.....	480			23.....	255	20.....	163
25.....	480			24.....	216	21.....	171
26.....	480			25.....	220	22.....	163
27.....	500			26.....	225	23.....	216
28.....	535			27.....	206	24.....	351
29.....	540			28.....	188	25.....	364
30.....	490			29.....	235	26.....	364
31.....	480			30.....	250	27.....	308
1.....	480			31.....	225	28.....	286
2.....	480	1931	Aug. 1.....			29.....	286
3.....	480					30.....	286
4.....	480					31.....	250

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
February 1929.....	760	480	600	0.783	0.82
March.....	8,330	480	3,280	4.28	4.94
April 1931.....	8,750	1,650	4,080	5.33	5.94
August.....	468	184	269	.351	.41
September.....	390	147	234	.305	.34
Water year 1930-31	8,750	147	968	1.26	17.15

## Contoocook River at Penacook, N. H.--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	139	3.0	1,540
1.8	263	4.0	3,400
2.1	450	5.0	5,820
2.5	840	7.0	12,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	506	1,590	1,510	1,800	2,500	1,100	3,150	3,660	1,910	436	336	187
2	490	1,510	1,460	2,100	2,400	1,000	3,640	2,920	4,980	400	308	278
3	575	2,520	1,370	2,350	2,300	1,050	*4,660	2,480	*5,110	348	263	*414
4	*620	6,060	1,510	2,300	2,300	1,150	5,470	2,140	4,980	295	240	557
5	593	6,110	1,560	2,100	2,780	1,130	6,480	1,830	4,370	274	196	429
6	566	5,240	*2,160	1,900	3,210	1,160	9,920	1,800	3,930	263	*179	354
7	557	4,590	2,980	1,850	*3,250	1,250	10,300	1,730	3,420	279	216	379
8	860	5,160	3,020	1,750	2,900	1,300	*8,370	1,660	2,740	279	225	235
9	1,810	5,290	2,720	1,600	2,500	1,300	7,330	1,560	2,020	279	225	235
10	1,860	4,780	2,590	1,500	2,300	1,240	7,330	1,370	1,760	348	204	232
11	1,610	4,120	2,500	1,450	2,100	1,300	8,170	1,270	1,590	593	225	373
12	1,840	3,270	2,230	1,350	2,000	1,800	8,270	2,290	1,440	744	221	350
13	1,810	2,740	1,950	1,250	1,750	2,350	7,570	4,070	1,340	680	249	350
14	1,690	2,550	1,570	1,300	1,600	2,600	7,090	4,000	1,180	548	279	348
15	1,440	2,670	1,300	1,400	1,600	2,400	7,420	3,420	1,030	*443	279	233
16	1,370	2,780	1,200	1,600	1,550	2,200	7,300	2,940	864	436	274	249
17	1,240	2,940	1,150	1,750	1,400	2,000	6,710	2,670	816	443	329	357
18	1,140	2,980	1,100	1,900	1,250	1,900	6,060	2,320	756	407	323	400
19	1,090	2,680	1,050	2,150	1,300	1,810	5,580	1,950	732	400	290	333
20	988	2,280	1,150	2,250	1,350	1,740	5,110	1,810	690	367	179	407
21	840	2,020	1,500	2,300	1,350	1,680	4,520	1,950	611	268	187	235
22	732	1,800	1,800	2,200	1,300	1,760	4,120	2,390	557	254	258	240
23	816	1,590	2,200	2,200	1,250	1,860	3,580	2,390	522	342	268	230
24	912	1,620	2,100	2,400	1,150	2,050	3,110	2,100	548	336	225	429
25	1,130	1,780	1,900	2,300	1,150	2,200	2,590	1,850	720	323	200	429
26	1,350	1,710	1,750	2,200	1,200	2,320	2,650	2,050	756	329	179	373
27	1,560	1,780	1,600	2,520	1,200	2,780	2,670	2,570	611	300	164	317
28	1,400	1,600	1,500	3,300	1,150	3,400	2,680	2,500	584	290	200	263
29	1,440	1,600	1,400	3,500	1,150	3,620	3,800	1,980	514	230	244	254
30	1,730	1,550	1,350	3,100	-	3,210	*4,160	1,810	458	240	235	230
31	1,680	-	1,450	2,700	-	3,150	-	1,640	-	317	191	-
Total	36,045	88,910	54,630	64,370	53,240	59,810	169,810	70,920	51,539	11,491	7,389	9,930
Mean	1,163	2,964	1,762	2,076	1,636	1,929	5,660	2,288	1,718	371	238	331
Cfs/m	1.52	3.87	2.30	2.71	2.40	2.52	7.39	2.99	2.24	0.464	0.311	0.432
In.	1.75	4.32	2.65	3.13	2.58	2.90	8.24	3.44	2.50	0.56	0.36	0.48

Calendar year 1951: Max 11,400

Min 320

Mean 1,833

Cfs/m 2.39

In. 32.47

Water year 1951-52: Max 10,300

Min 164

Mean 1,853

Cfs/m 2.42

In. 32.91

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28-30, Dec. 15 to Jan. 13, Jan. 16-26, Jan. 29 to Feb. 4, Feb. 8 to Mar. 4, Mar. 13-17, 25.

## MERRIMACK RIVER BASIN

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Soucook River near Concord, N. H.

Location.--Lat 43°14'22", long. 71°27'44", on left bank 500 ft upstream from U. S. Highway 4, 0.9 mile upstream from Cemetery Brook, and 4.4 miles northeast of State Capitol at Concord, Merrimack County.

Drainage area.--76.8 sq mi.

Records available.--October 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 290 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,220 cfs Apr. 6 (gage height, 12.35 ft); minimum, about 4.5 cfs Aug. 31, Sept. 1.

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

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 6

Apr. 7 to Sept. 30

4.7	20	7.0	290	4.14	4.8	6.0	152
5.0	37	8.0	515	4.2	6.5	7.0	320
5.5	77	10.0	1,150	4.5	19	9.0	825
6.0	132	12.0	2,050	5.0	50	10.5	1,360
				5.5	94		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	82	113	250	205	92	319	188	140	44	14	a6.0
2	23	83	113	235	200	88	517	159	687	35	12	19
3	22	511	112	210	190	86	674	142	*485	*30	11	*18
4	22	1,160	105	187	205	84	*701	129	280	27	10	13
5	22	583	120	172	320	83	901	120	246	25	10	11
6	22	367	*232	169	350	*93	1,920	115	190	22	*11	8.3
7	20	351	235	164	295	116	*1,350	116	153	20	12	7.6
8	78	661	194	152	235	116	974	109	128	19	11	6.5
9	98	*492	182	144	216	107	825	101	113	18	9.7	6.2
10	66	340	223	138	190	101	717	93	101	19	9.7	5.9
11	55	267	172	130	176	118	699	89	93	41	13	5.6
12	83	225	153	122	165	240	622	256	89	41	13	5.3
13	83	192	122	121	131	275	516	294	80	31	22	5.0
14	66	181	98	118	131	240	545	202	70	25	17	4.8
15	57	235	89	120	124	205	658	169	63	21	12	4.8
16	52	213	86	180	118	182	522	177	55	18	10	5.3
17	48	253	88	180	119	165	425	151	49	17	27	5.3
18	45	213	99	*186	114	154	366	132	50	16	31	a5.0
19	43	180	115	213	118	152	324	120	49	16	18	12
20	40	153	125	198	120	146	286	109	48	16	13	49
21	37	133	155	225	116	153	244	141	42	14	11	26
22	36	119	260	172	113	161	215	155	38	14	10	18
23	35	125	250	230	109	189	195	126	35	13	9.0	16
24	34	154	220	280	104	196	*177	108	33	12	7.9	13
25	113	162	185	220	102	188	160	109	34	12	7.2	13
26	122	149	170	210	100	215	218	242	35	11	6.5	11
27	88	172	155	345	98	309	202	204	42	13	6.5	13
28	79	142	140	450	97	364	201	147	38	28	5.6	13
29	122	128	135	380	94	350	306	122	34	19	5.3	11
30	104	119	130	270	-	331	237	119	53	14	5.0	10
31	88	-	190	220	-	354	-	109	-	13	a4.8	-
Total	1,827	8,145	4,766	6,391	4,655	5,672	16,016	4,553	3,554	684	365.2	346.6
Mean	58.9	272	154	206	161	183	534	147	118	21.4	11.8	11.6
Cfsm	0.787	3.54	2.01	2.68	2.10	2.38	6.95	1.91	1.54	0.279	0.154	0.151
In.	0.88	3.94	2.31	3.09	2.25	2.75	7.76	2.20	1.72	0.32	0.18	0.17

Calendar year 1951: Max - Min - Mean - Cfsm - In. -  
 Water year 1951-52: Max 1,920 Min 4.8 Mean 156 Cfsm 2.03 In. 27.57

Peak discharge (base, 700 cfs).--Nov. 4 (8 a.m.) 1,380 cfs (10.58 ft); Nov. 8 (9:30 to 11:30 a.m.) 701 cfs (8.67 ft); Apr. 6 (2:30 to 3:30 p.m.) 2,220 cfs (12.35 ft); Apr. 15 (3:30 to 5 a.m.) 711 cfs (8.62 ft); June 2 (4 p.m.) 831 cfs (9.02 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Dec. 19 to Jan. 1, Jan. 23 to Feb. 7, Mar. 12-14. Shifting-control method used Aug. 9-30, Sept. 2-17, 19-30.

## MERRIMACK RIVER BASIN

Suncook River at North Chichester, N. H.

Location.--Lat 43°15'25", long. 71°22'10", on left bank at North Chichester, Merrimack County, 3.1 miles upstream from Little Suncook River.

Drainage area.--157 sq mi.

Records available.--May 1918 to November 1927, November 1928 to September 1952.

Gage.--Water-stage recorder. Concrete control since Sept. 14, 1937. Datum of gage is 329.35 ft above mean sea level, adjustment of 1912.

Average discharge.--29 years (1921-27, 1929-52), 232 cfs.

Extremes.--Maximum discharge during year, 3,300 cfs Apr. 6 (gage height, 10.68 ft); minimum, 11 cfs Sept. 14, 15; minimum daily, 11 cfs Sept. 14.

1918-52: Maximum discharge, 12,900 cfs Mar. 19, 1936 (gage height, 15.27 ft, from floodmarks), from rating curve extended above 4,800 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, 0.4 cfs Sept. 4, 1926; minimum daily, 1.4 cfs Sept. 4, 1926.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
501.....	1919	Mar. 29, 1919	1,800	7.9
501, 521, 541.	1920	Mar. 27, 28, 1920	2,350	9.1
541.....	1922	June 22, 1922	2,130	8.63
581.....	1924	Apr. 7, 1924	3,940	11.25
741.....	1933	Apr. 19, 1933	3,930	11.3
756.....	1934	Apr. 1, 1934	4,160	11.47
-	1941	Feb. 9, 1941	†1,160	-
-	1942	Mar. 10, 1942	†2,200	-
-	1946	Mar. 10, 1946	†2,100	-
-	1947	Apr. 7, 1947	†1,200	-
-	1948	Mar. 22, 1948	†3,900	-

† Not previously published.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by mills and reservoirs above station; regulation greater prior to 1949.

Revisions (water years).--W 781: 1923(M). Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1920 and 1922 are given herewith. They supersede those published in Water-Supply Papers 501 and 541.

Date	Discharge	Date	Discharge	Date	Discharge
1920		1922		1922	
Mar. 14.....	1,900	Mar. 10.....	1,090	Apr. 1.....	1,110
15.....	1,750	11.....	955	2.....	945
16.....	1,670	12.....	885	3.....	955
17.....	1,670	13.....	840	4.....	955
18.....	1,750	14.....	840	5.....	1,000
19.....	1,590	15.....	1,090	6.....	1,070
20.....	1,440	16.....	1,090	7.....	1,130
21.....	1,370	17.....	955	8.....	1,200
22.....	1,380	18.....	850	9.....	1,590
23.....	1,270	19.....	840	10.....	1,880
24.....	1,450	20.....	955	11.....	1,720
25.....	1,850	21.....	1,660	12.....	1,640
26.....	1,850	22.....	1,640	13.....	1,400
27.....	2,300	23.....	1,520	14.....	1,110
28.....	2,300	24.....	1,090	15.....	1,020
29.....	1,850	25.....	910	16.....	1,300
30.....	1,720	26.....	1,020	19.....	910
31.....	1,450	27.....	1,550	June 20.....	1,450
		28.....	1,880	21.....	1,160
1922		29.....	1,980	22.....	2,030
Mar. 8.....	1,230	30.....	1,880	23.....	1,480
9.....	1,160	31.....	1,480	24.....	945

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1920.....	2,300	18	1,150	7.32	8.43
Water year 1919-20.....	2,300	9	318	2.03	27.52
March 1922.....	1,980	155	1,005	6.40	7.38
April.....	1,880	215	880	5.61	6.25
June.....	2,030	68	451	2.87	3.20
Water year 1921-22.....	2,030	10	321	2.04	27.72

## Suncook River at North Chichester, N. H.--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	8.2	3.5	138	7.0	1,210
2.6	12	4.0	299	8.0	1,570
2.7	18	4.5	551	9.0	2,020
2.8	34	5.0	700	10.0	2,700
3.2	74	6.0	950	11.0	3,630

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	149	250	560	430	180	598	*535	336	84	25	14
2	92	146	235	530	410	190	856	426	916	81	21	45
3	114	1,350	235	470	400	210	*1,080	370	*882	50	21	*36
4	116	2,530	222	420	440	190	1,160	339	664	45	25	28
5	116	1,620	*245	380	660	*190	1,520	299	549	42	27	23
6	110	1,070	462	360	710	220	3,160	255	447	37	*41	20
7	114	968	587	350	600	230	2,640	245	361	38	32	17
8	230	1,570	502	*350	500	220	2,080	251	303	34	27	21
9	245	*1,270	447	320	450	210	1,800	212	259	32	21	20
10	199	940	521	300	400	205	1,590	190	222	36	24	18
11	175	765	447	280	360	300	1,550	187	206	57	33	18
12	190	667	379	270	330	480	1,450	507	190	50	30	18
13	152	562	330	260	285	500	1,220	722	175	44	52	17
14	119	441	260	250	275	450	1,280	587	152	44	49	11
15	101	502	205	250	255	400	1,530	407	138	36	38	12
16	87	483	190	380	255	370	1,280	388	126	*31	29	22
17	80	526	195	370	240	340	1,080	352	114	30	48	18
18	71	483	220	390	245	310	962	303	121	28	50	18
19	68	393	240	440	265	299	855	273	133	28	34	40
20	63	323	250	420	255	300	762	245	128	30	28	43
21	60	277	320	480	245	303	692	315	110	33	25	39
22	57	245	580	380	240	320	614	379	95	35	24	34
23	55	255	540	480	230	357	540	327	91	34	18	28
24	54	327	470	570	225	379	483	266	82	28	17	26
25	175	374	410	460	225	365	447	262	84	23	21	28
26	259	357	360	440	220	417	549	447	84	20	21	26
27	196	440	330	720	210	587	531	483	91	24	18	27
28	169	360	310	920	200	685	540	374	82	41	18	26
29	222	295	290	800	200	840	715	282	82	30	18	27
30	187	275	280	550	-	606	669	280	106	25	16	24
31	158	-	390	450	-	630	-	255	-	24	12	-
Total	4,092	19,963	10,702	13,560	9,760	11,083	34,243	10,753	7,329	1,152	863	744
Mean	132	665	345	437	337	358	1,141	347	244	37.2	27.8	24.8
Cfsm	0.841	4.24	2.20	2.78	2.15	2.28	7.27	2.21	1.55	0.237	0.177	0.158
In.	0.97	4.75	2.54	3.21	2.31	2.63	8.11	2.55	1.74	0.27	0.20	0.18

Calendar year 1951: Max 2,530 Min 35 Mean 337 Cfsm 2.15 In. 29.17  
Water year 1951-52: Max 3,180 Min 11 Mean 339 Cfsm 2.16 In. 29.44

Peak discharge (base, 1,500 cfs).--Nov. 4 (1:30 to 2 a.m.) 3,000 cfs (10.36 ft); Nov. 8 (11 a.m. to 1 p.m.) 1,620 cfs (8.12 ft); Apr. 6 (12:30 to 2:30 p.m.) 3,500 cfs (10.68 ft); Apr. 15 (5 to 6 a.m.) 1,580 cfs (8.02 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27 to Dec. 1, Dec. 13 to Mar. 18, Mar. 20, 22 (no gage-height record Dec. 16-30, Jan. 25, 26, Jan. 29 to Feb. 6; discharge estimated on basis of weather records and records for Soucook River near Concord and Souhegan River at Merrimack).

## South Branch Piscataquog River near Goffstown, N. H.

Location.--Lat 43°00'50", long. 71°38'30", on right bank 20 ft upstream from highway bridge, 1.4 miles upstream from mouth, and 2.2 miles west of Goffstown, Hillsboro County.

Drainage area.--104 sq mi.

Records available.--July 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from topographic map).

Average discharge.--12 years, 158 cfs.

Extremes.--Maximum discharge during year, 3,240 cfs Apr. 6 (gage height, 8.72 ft); minimum, 7.2 cfs Sept. 18-20, 30.

1940-52: Maximum discharge, 4,100 cfs June 25, 1944 (gage height, 9.47 ft); maximum gage height, 11.18 ft Mar. 20, 1948 (ice jam); minimum discharge, 3.0 cfs Sept. 22, 1941.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by mill above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.9	5.5	4.5	250
3.0	9.2	5.0	435
3.2	20	6.0	550
3.4	36	7.0	1,640
3.6	57	8.0	2,500
4.0	121	8.5	3,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	136	175	430	300	130	502	443	386	66	9.2	11
2	24	153	177	500	330	120	768	352	1,430	47	9.2	53
3	24	1,050	180	450	350	110	872	296	728	40	8.8	*42
4	25	1,390	175	350	450	120	980	264	443	35	8.4	26
5	33	687	201	275	700	125	1,380	238	371	35	12	19
6	30	451	440	280	640	150	2,680	232	306	32	13	15
7	30	591	419	260	500	200	1,530	254	257	28	15	13
8	242	1,020	313	250	380	180	*1,260	217	209	26	15	12
9	138	630	282	235	330	155	1,060	198	170	*23	14	11
10	140	451	313	220	300	130	950	180	148	29	14	11
11	105	359	250	200	275	220	968	170	134	129	17	9.7
12	222	299	210	180	260	550	836	828	123	104	*20	9.7
13	190	264	190	170	240	530	670	715	112	68	94	9.2
14	132	257	150	160	220	430	861	447	99	41	72	8.8
15	104	320	120	170	200	350	938	344	92	33	39	8.4
16	90	334	110	250	180	320	665	352	74	28	28	8.4
17	79	435	120	260	160	300	552	299	65	24	36	7.6
18	74	355	150	290	150	290	484	268	60	22	32	7.2
19	69	278	165	330	200	280	431	247	55	20	23	11
20	62	235	160	300	*190	270	383	223	50	19	18	14
21	60	215	250	350	180	270	327	364	45	17	16	23
22	56	210	450	*300	170	280	288	395	41	16	15	16
23	55	212	400	350	160	310	278	288	40	16	13	15
24	56	241	320	370	150	355	250	226	37	14	12	14
25	283	241	250	300	150	341	235	227	49	13	11	14
26	251	226	210	330	160	*387	427	371	53	13	11	13
27	165	*230	195	800	155	560	391	316	56	12	10	12
28	142	225	180	900	150	640	581	229	47	12	9.2	11
29	220	200	175	600	140	560	*1,060	*193	50	11	8.8	10
30	180	180	170	400	-	480	630	215	95	10	8.4	9.2
31	145	-	350	320	-	520	-	193	-	9.7	8.0	-
Total	5,451	11,975	7,250	10,580	7,770	9,663	23,337	9,584	5,825	992.7	620.0	444.2
Mean	111	398	234	341	268	312	778	309	194	32.0	20.0	14.8
Cfsm	1.07	3.61	2.25	3.28	2.58	3.00	7.48	2.97	1.87	0.508	0.192	0.142
In.	1.23	4.25	2.58	3.78	2.78	3.46	8.35	3.43	2.08	0.35	0.22	0.16

Calendar year 1951: Max 1,690 Min 23 Mean 235 Cfsm 2.26 In. 30.72  
Water year 1951-52: Max 2,680 Min 7.2 Mean 250 Cfsm 2.40 In. 32.68

Peak discharge (base, 1,000 cfs).--Nov. 3 (10 p.m.) 2,010 cfs (7.46 ft); Nov. 8 (2 to 3:30 a.m.) 1,150 cfs (6.33 ft); Apr. 6 (5:30 a.m.) 3,240 cfs (8.72 ft); Apr. 14 (9 to 10 p.m.) 1,160 cfs (6.34 ft); Apr. 29 (2:30 to 4 a.m.) 1,250 cfs (6.47 ft); May 12 (2 to 3:30 p.m.) 1,180 cfs (6.37 ft); June 2 (7 a.m.) 1,760 cfs (7.15 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 27 to Dec. 1, Dec. 3, 4, Dec. 11 to Mar. 23, Mar. 27-30.



## Piscataquog River near Goffstown, N. H.

Location.--Lat 43°01'00", long. 71°33'00", on left bank 300 ft upstream from highway bridge, 0.2 mile upstream from Harry Brook, 0.4 mile southwest of Grasmere, and 2.5 miles east of Goffstown, Hillsboro County.

Drainage area.--202 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 185 ft (from topographic map). Prior to Dec. 22, 1939, staff gage at same site and datum.

Average discharge.--13 years, 299 cfs.

Extremes.--Maximum discharge during year, 5,340 cfs Apr. 6 (gage height, 9.89 ft); minimum daily, 10 cfs Sept. 14, 20, 27.

1939-52: Maximum discharge, 6,760 cfs June 15, 1942 (gage height, 10.79 ft), from rating curve extended above 4,400 cfs on basis of computations of flow over dam at gage heights 16.03 and 17.52 ft; minimum daily, 5.8 cfs Oct. 15, 1950.

Maximum discharge known, 21,900 cfs Sept. 21, 1938 (gage height, 17.52 ft, from floodmarks), by computation of flow over dam.

Remarks.--Records excellent except those below 100 cfs and those for periods of ice effect or no gage-height record, which are good. Flow regulated by powerplant above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.8	7.1	5.0	513
3.0	15	6.0	1,150
3.2	28	7.0	1,960
3.5	61	8.0	2,940
4.0	153	9.5	4,780
4.5	296		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	340	322	611	614	260	937	881	446	131	27	12
2	101	263	370	574	603	1,320	699	2,400	138	11	50	
3	60	1,450	474	789	565	290	1,530	626	1,590	142	11	73
4	61	2,670	429	675	681	400	1,860	570	930	12	24	27
5	56	1,500	447	631	1,130	380	2,280	467	802	11	26	34
6	42	1,000	532	497	1,180	413	4,650	439	789	11	12	26
7	28	1,060	723	564	956	234	3,340	480	660	76	25	11
8	453	1,880	603	480	759	340	2,430	399	299	82	28	11
9	497	1,360	446	480	675	186	*2,020	425	384	*46	11	53
10	342	965	631	470	603	425	1,780	372	347	52	20	11
11	300	783	473	470	620	519	1,770	214	338	184	40	11
12	412	681	460	325	600	497	1,600	1,190	312	138	37	11
13	397	620	340	220	580	620	1,320	1,400	274	98	125	11
14	132	560	236	426	410	631	1,540	895	89	76	108	10
15	130	400	207	477	390	747	1,760	675	41	41	92	23
16	163	660	179	470	250	687	1,370	674	227	49	11	12
17	180	890	254	455	302	626	1,130	723	112	82	69	15
18	117	650	263	596	370	562	993	538	112	59	59	11
19	135	620	275	470	355	592	888	476	105	11	24	40
20	101	610	281	465	365	567	795	453	66	11	39	10
21	132	500	426	711	379	603	687	569	11	35	41	36
22	114	250	590	*687	371	587	604	765	11	38	41	43
23	97	430	474	693	344	576	578	594	136	36	11	41
24	112	440	454	795	200	626	459	465	81	26	11	11
25	538	410	461	720	400	658	460	418	137	46	27	23
26	592	530	453	614	305	729	505	668	69	11	26	95
27	285	450	440	1,020	380	1,020	640	666	107	11	26	10
28	219	346	415	1,220	360	1,180	976	*499	11	38	25	18
29	411	368	311	1,070	313	1,070	1,840	428	21	12	26	11
30	323	406	333	847	-	937	1,270	297	178	26	11	21
31	224	-	498	753	-	993	-	488	-	21	11	-
Total	6,809	23,092	12,800	19,275	15,082	18,120	43,132	18,453	11,085	1,750	1,055	769
Mean	1.220	770	413	622	520	565	1,438	595	370	56.5	34.0	25.6
Cfs/m	1.09	3.81	2.04	3.08	2.57	2.90	7.12	2.95	1.83	0.280	0.168	0.127
In.	1.25	4.25	2.36	3.55	2.78	3.34	7.94	3.40	2.04	0.32	0.19	0.14

Calendar year 1951: Max 3,420 Min 8.7 Mean 446 Cfs/m 2.21 In. 29.94  
 Water year 1951-52: Max 4,650 Min 10 Mean 468 Cfs/m 2.32 In. 31.56

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 13-27; discharge estimated on basis of weather records, recorded range in stage, and powerplant records. Stage-discharge relation affected by ice Dec. 19, 27, 28, Jan. 8-12, 17, 19, 25, Feb. 12-16, 19, 20, Feb. 24 to Mar. 2, Mar. 4, 5.

Merrimack River near Goffs Falls, below Manchester, N. H.

Location.--Lat 42°56'55", long. 71°27'45", on right bank 0.8 mile downstream from Bowman Brook, 1.3 miles north of Goffs Falls, Hillsboro County, and 2.3 miles downstream from Piscataquog River.

Drainage area.--3,092 sq mi.

Records available.--November 1936 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 105 ft (from topographic map).

Average discharge.--16 years, 5,264 cfs.

Extremes.--1936-37: Maximum discharge during water year, 102,500 cfs Sept. 25 (gage height, 25.87 ft); minimum daily, 536 cfs Oct. 9.

1951-52: Maximum discharge during year, 43,900 cfs Apr. 7 (gage height, 13.30 ft); minimum daily, 479 cfs Aug. 31.

1936-52: Maximum discharge, 102,500 cfs Sept. 23, 1938 (gage height, 25.87 ft), from rating curve extended above 48,000 cfs on basis of computation of flow over dam at gage heights 25.87 and 35.19 ft; minimum daily, 154 cfs Sept. 5, 1949.

Maximum discharge known, 150,000 cfs Mar. 20, 1936 (gage height, 35.19 ft, from floodmarks), from rating curve extended above 48,000 cfs by method explained above.

Revisions.--The maximum discharge for the water year 1937 has been revised to 33,700 cfs May 16 (gage height, 11.52 ft), superseding figure published in Water-Supply Paper 821.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Newfound, Winnepesaukee, Winnisquam, and other lakes and reservoirs above station. See pages 137, 173 for description and monthly change in contents of many of these reservoirs.

Revisions.--Revised figures of discharge for the water year 1937, superseding those published in Water-Supply Paper 821, are given herewith.

Discharge, in cubic feet per second, water year October 1936 to September 1937

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	1,660	9,500	5,440	6,870	4,800	19,000	8,710	3,790	843	2,000
2		-	1,560	10,500	5,270	6,390	6,000	17,000	7,430	7,660	2,050	1,800
3		-	2,500	10,000	4,370	5,980	5,200	16,000	8,460	7,790	2,180	2,000
4		-	2,540	9,300	5,540	4,540	5,600	14,800	7,900	5,460	1,760	1,700
5		-	2,740	8,800	4,730	4,380	5,600	14,200	9,430	4,460	2,060	1,300
6		-	1,580	7,170	4,110	4,040	6,000	13,400	8,570	4,400	2,620	450
7		-	2,620	6,580	4,310	3,680	13,000	14,600	6,390	4,460	2,020	1,700
8		-	3,100	6,020	4,840	4,870	17,000	19,200	5,780	3,950	1,240	1,250
9		-	2,970	7,240	4,090	4,370	15,000	19,500	5,940	3,670	3,260	1,580
10		-	4,230	8,730	4,990	4,160	13,500	15,600	8,060	2,360	2,520	1,620
11		-	6,310	8,600	4,990	3,790	12,500	14,300	6,950	2,460	3,080	1,910
12		-	10,400	7,550	4,940	3,980	11,000	12,000	8,260	3,150	4,180	1,230
13		-	13,600	7,070	4,410	3,240	11,500	11,700	6,700	2,480	2,090	2,210
14		-	11,500	6,860	5,770	2,950	14,000	9,100	5,850	3,510	2,370	1,790
15		-	8,270	6,930	11,500	4,120	18,000	20,900	3,730	5,310	2,210	3,000
16		-	7,230	10,200	14,300	4,320	19,500	32,700	4,430	3,200	2,360	1,840
17		-	6,270	9,290	11,000	7,470	20,500	28,700	5,690	3,070	2,060	1,880
18		-	6,440	8,530	8,690	9,390	18,500	21,600	5,590	1,900	2,170	1,490
19		-	6,050	10,900	7,530	8,120	16,400	18,900	4,750	2,800	2,090	684
20		2,830	9,390	11,200	6,800	8,080	16,600	18,200	7,150	2,650	1,920	1,710
21		2,530	20,900	9,440	6,290	7,900	16,800	19,100	6,310	2,540	2,150	2,090
22		1,010	18,300	8,700	9,810	8,000	14,800	17,600	7,160	2,150	1,240	1,880
23		2,100	12,400	8,620	24,100	7,800	15,200	14,400	9,350	1,830	2,180	1,500
24		1,720	9,110	7,650	19,400	7,200	14,400	13,900	8,680	2,580	2,030	1,760
25		2,380	7,950	7,660	13,600	6,600	14,100	14,000	8,270	978	2,260	2,110
26		1,450	8,400	9,450	11,400	5,800	14,400	12,000	5,120	2,230	2,080	740
27		2,170	7,400	8,730	8,550	5,000	15,100	11,500	3,550	1,930	2,000	1,680
28		2,250	6,100	7,320	6,920	4,500	16,200	13,000	5,040	2,530	1,290	2,330
29		1,210	7,200	6,880	-	5,200	16,100	11,600	4,270	2,820	1,050	1,900
30		2,210	8,000	6,180	-	5,000	21,000	10,200	4,210	2,530	2,400	1,550
31		-	8,200	5,460	-	4,900	-	9,100	-	1,860	2,200	-
Total	104,479	102,964	224,910	257,040	227,490	172,620	410,300	497,800	197,710	100,508	65,963	50,384
Mean	3,370	3,432	7,255	8,292	8,125	5,568	13,680	16,060	6,590	3,242	2,128	1,679
Cfsm	11.09	11.11	2.35	2.68	2.63	1.80	4.42	5.19	2.13	1.05	0.688	0.543
In.	11.26	11.24	2.71	3.09	2.74	2.08	4.94	5.99	2.38	1.21	0.79	0.61
Calendar year 1936:	Max	-	Min	-	Mean	-	Cfsm	-	In.	-	-	-
Water year 1936-37:	Max	132,700	Min	1450	Mean	16,609	Cfsm	12.14	In.	129.04	-	-
Calendar year 1937:	Max	32,700	Min	450	Mean	6,847	Cfsm	2.21	In.	30.08	-	-

† Not previously published; estimated or partly estimated on basis of weather records and records for other stations on Merrimack River.

Note.--No gage-height record Dec. 26, 27, Dec. 29 to Jan. 5, Mar. 22 to Apr. 16, Apr. 30 to May 2, Aug. 30 to Sept. 8; discharge estimated on basis of records for nearby stations.

## MERRIMACK RIVER BASIN

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Merrimack River near Goffs Falls, below Manchester, N. H.--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	445	5.0	4,660
2.5	700	6.0	8,000
3.0	1,090	9.0	22,000
3.5	1,630	14.0	47,400
4.0	2,340		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,700	4,720	4,760	7,770	9,050	5,090	10,200	14,800	8,180	1,980	1,520	652
2	2,750	4,750	4,320	8,440	9,430	4,540	11,500	11,700	18,000	2,320	1,480	2,080
3	2,650	8,860	4,870	8,880	8,970	5,200	16,000	9,990	26,700	1,240	1,050	2,650
4	2,440	24,600	4,440	b8,500	8,600	4,770	18,100	8,880	24,800	1,460	1,510	1,940
5	2,760	27,900	4,640	b6,200	10,300	5,030	20,600	6,840	18,900	1,220	1,570	2,320
6	2,830	19,800	5,860	6,890	12,100	5,110	35,000	6,810	15,100	1,050	1,550	2,410
7	1,850	15,100	12,200	b7,600	12,000	5,050	43,000	6,490	12,900	1,290	1,420	510
8	5,560	17,900	12,700	b7,200	10,900	5,340	36,400	6,050	10,800	*1,690	1,510	1,060
9	7,170	20,000	10,500	6,770	9,950	4,900	29,000	5,890	8,970	1,460	1,050	1,110
10	7,620	17,000	9,680	6,610	9,300	5,050	25,400	5,640	7,810	1,720	814	1,200
11	6,420	13,500	8,970	b6,800	8,400	5,630	25,400	5,640	7,030	2,500	1,890	1,260
12	5,600	11,200	7,850	6,140	b7,600	7,770	26,600	8,570	6,500	2,850	1,890	1,950
13	5,500	8,860	6,640	5,970	b6,500	9,470	24,600	16,100	6,140	1,780	2,110	914
14	4,180	8,000	5,810	6,030	b6,700	10,100	22,900	17,100	5,830	2,270	1,690	814
15	4,190	8,000	b4,050	6,130	b7,100	9,220	24,800	14,000	5,270	2,200	1,660	1,160
16	3,820	8,680	b3,850	6,740	b6,500	8,800	27,000	11,700	5,120	1,790	1,240	1,320
17	3,760	9,220	b4,500	7,890	6,490	7,790	25,600	11,100	3,590	1,820	778	1,110
18	3,600	8,680	4,730	8,400	5,630	7,400	23,400	9,900	3,550	1,680	2,280	1,160
19	3,340	8,240	b4,650	8,640	5,590	7,090	22,300	8,280	3,110	1,430	2,250	1,430
20	2,640	7,320	4,980	9,140	b6,200	7,020	22,300	7,660	3,250	834	1,410	1,590
21	2,950	6,450	5,230	9,560	6,330	6,150	22,400	7,810	2,840	2,010	1,200	964
22	2,890	5,590	6,990	8,720	5,970	6,340	22,600	9,640	2,070	2,040	1,330	1,210
23	2,730	5,040	b8,000	9,010	5,790	7,080	19,100	10,100	2,380	1,670	817	1,340
24	2,800	4,530	8,040	9,620	b5,500	7,240	17,400	9,300	2,200	1,400	523	1,340
25	3,950	5,220	7,890	9,430	b5,500	*7,740	16,800	8,240	2,190	1,610	1,100	1,520
26	5,210	*6,140	7,160	9,300	5,230	7,920	14,300	9,300	2,330	1,320	1,340	1,820
27	5,300	6,090	6,730	10,300	5,360	9,010	12,800	13,600	3,500	642	1,220	1,600
28	5,330	4,760	6,420	12,100	5,410	11,000	12,700	12,200	2,530	1,700	1,220	1,080
29	5,090	4,870	5,800	b12,500	5,510	11,500	*15,700	*9,900	2,200	1,920	1,160	1,340
30	5,250	4,990	5,720	b11,500	-	11,000	16,300	8,600	2,510	1,690	1,070	1,620
31	4,930	-	6,250	b9,700	-	10,800	-	8,000	-	1,600	478	-
Total	127,810	306,230	204,610	260,680	217,930	226,150	660,200	299,830	228,290	52,166	42,091	42,074
Mean	4,123	10,210	6,600	8,409	7,515	7,295	22,010	9,672	7,610	1,663	1,356	1,402
Cfsm	1.33	3.30	2.13	2.72	2.43	2.36	7.12	3.13	2.46	0.544	0.439	0.453
In.	1.54	3.68	2.46	3.14	2.62	2.72	7.94	3.61	2.75	0.63	0.51	0.51

Calendar year 1951: Max 42,900 Min 1,570 Mean 6,939 Cfsm 2.24 In. 30.47  
 Water year 1951-52: Max 43,000 Min 479 Mean 7,290 Cfsm 2.36 In. 32.11

Peak discharge (base, 22,000 cfs).--Nov. 5 (2 to 3 a.m.) 29,600 cfs (10.54 ft); Apr. 7 (6 to 8 a.m.) 43,900 cfs (13.30 ft); June 3 (1:30 to 2:30 p.m.) 29,500 cfs (10.46 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Clark Brook at Auburn, N. H.

Location.--Lat 43°00'20", long. 71°20'55", on left bank at Auburn, Rockingham County, 0.4 mile upstream from Massabesic Lake.

Drainage area.--27.8 sq mi.

Records available.--January 1938 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 252.60 ft above mean sea level (city of Manchester benchmark).

Average discharge.--14 years, 38.4 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 364 cfs Apr. 7 (gage height, 2.16 ft); minimum, 1.4 cfs July 31.

1938-52: Maximum discharge, that of Apr. 7, 1952; no flow Oct. 5-8, 1939, Dec. 4, 1941.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Tower Hill Pond (see p. 173). Some diurnal fluctuation by mill above station prior to 1951.

Revisions (water years).--W 891: 1939. W 921: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.25	1.5	0.9	39
.3	2.3	1.2	84
.4	4.7	1.5	150
.5	8.3	2.0	305
.6	13	2.2	380
.7	20		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	94	55	92	110	33	160	123	56	9.6	1.6	27
2	2.7	92	52	105	95	32	178	99	106	8.7	2.3	33
3	2.5	148	49	112	94	31	211	84	128	7.9	3.4	40
4	2.3	223	46	105	103	29	208	72	107	7.1	6.3	42
5	2.5	162	46	99	150	35	214	61	97	6.3	22	39
6	2.3	112	58	92	170	46	319	55	86	5.6	30	35
7	2.7	92	74	81	158	52	360	56	70	5.0	35	30
8	7.2	130	76	74	135	88	322	56	55	4.7	35	45
9	15	125	72	66	118	72	274	49	43	*4.1	34	*58
10	21	95	76	61	103	60	229	43	37	4.4	34	62
11	24	76	70	56	92	61	193	38	33	4.7	36	61
12	30	60	62	55	84	90	168	74	24	4.7	36	58
13	34	49	55	52	67	114	150	132	22	4.7	*54	52
14	33	46	47	51	61	125	148	121	22	4.7	60	48
15	32	57	44	51	52	118	116	103	19	4.1	51	47
16	43	77	40	56	47	107	95	94	18	4.1	44	51
17	47	92	*36	61	46	97	95	84	16	4.1	58	44
18	48	92	56	69	52	86	99	74	15	3.6	62	38
19	48	a80	47	79	49	81	92	64	13	3.6	60	38
20	52	a70	51	68	47	77	84	56	12	3.4	52	35
21	52	a60	68	*99	46	77	74	66	11	3.4	47	32
22	52	a50	101	95	46	79	62	82	11	3.4	42	28
23	63	a52	116	107	43	84	58	76	9.6	3.1	38	27
24	84	a65	112	118	40	*94	52	62	8.7	2.9	36	48
25	102	a75	101	114	39	99	49	58	9.2	2.5	34	52
26	81	*72	94	110	37	140	67	74	8.7	2.3	33	51
27	97	*88	81	138	37	165	84	81	8.7	2.3	32	46
28	97	76	69	181	36	184	*95	*67	8.7	2.1	30	37
29	101	64	62	176	34	175	148	56	9.2	2.0	30	29
30	97	60	58	155	-	168	150	56	10	1.6	28	23
31	94	-	74	130	-	165	-	54	-	1.6	26	-
Total	1,371.9	2,634	2,028	2,930	2,191	2,864	4,554	2,270	1,073.8	132.7	1,092.6	1,256
Mean	44.3	87.8	65.4	94.5	75.6	92.4	152	73.2	35.8	4.26	35.2	41.9
(†)	-619	+673	0	0	0	-113	+113	0	-40	-93	-468	-719

Adjusted for change in reservoir contents

Mean	13.4	122	65.4	94.5	75.6	86.7	158	73.2	33.7	-0.365	11.9	4.80
Cfsm	0.482	4.39	2.35	3.40	2.72	3.12	5.68	2.63	1.21	-0.013	0.428	0.173
In.	0.55	4.92	2.71	3.92	2.93	3.60	6.33	3.04	1.35	-0.02	0.49	0.19

Observed				Adjusted			
Calendar year 1951:	Max 270	Min 2.3	Mean 53.9	Mean 56.6	Cfsm 2.04	In. 27.66	
Water year 1951-52:	Max 360	Min 1.6	Mean 66.7	Mean 61.3	Cfsm 2.21	In. 30.01	

\* Discharge measurement made on this day.

† Change in contents in Tower Hill Pond, in millions of gallons.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Suncook River at North Chichester.

Note.--Negative figures of adjusted discharge and runoff indicate that evaporation and seepage from reservoir exceeded inflow.

## Souhegan River at Merrimack, N. H.

Location.--Lat 42°51'25", long. 71°30'30", on left bank at head of Atherton Falls, at Merrimack, Hillsboro County, 1½ miles upstream from mouth.

Drainage area.--171 sq mi.

Records available.--July 1909 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 160.59 ft above mean sea level, unadjusted (levels by Corps of Engineers). Prior to Apr. 12, 1911, staff gage at site 300 ft downstream at datum 0.35 ft lower. Apr. 12, 1911, to Oct. 14, 1913, chain gage at present site and datum.

Average discharge.--43 years, 282 cfs.

Extremes.--Maximum discharge during year, 4,300 cfs Apr. 6 (gage height, 8.34 ft); minimum, 31 cfs Aug. 2, 5.

1909-52: Maximum discharge, 16,900 cfs Mar. 19, 1936 (gage height, 16.2 ft), from rating curve extended above 7,200 cfs on basis of velocity-area studies and computation of flow over dam at gage height 12.78 ft; minimum, 13 cfs Sept. 9, 1926.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	Mar. 3, 1914	3,680	7.84
401.....	1915	Aug. 5, 1915	6,000	9.6
451.....	1917	Mar. 28, 1917	3,290	7.51
501.....	1919	Mar. 29, 1919	3,200	7.43
501.....	1920	Mar. 28, 1920	3,920	8.04
521.....	1921	Dec. 15, 1920	5,410	9.18
541.....	1922	May 6, 1922	3,980	8.09
561.....	1923	Apr. 6, 1923	3,450	7.65
641.....	1927	Mar. 15, 1927	2,870	7.12
661.....	1928	Nov. 5, 1927	6,180	9.73
681.....	1929	Apr. 22, 1929	2,290	6.51
696.....	1930	Mar. 9, 1930	2,530	6.78
711.....	1931	June 10, 1931	3,490	7.68
726.....	1932	Apr. 1, 1932	3,520	7.71
731.....	1933	Apr. 18, 1933	3,210	7.44
756.....	1934	Apr. 13, 1934	7,500	10.66
-	1949	Jan. 7, 1949	†2,100	-

† Not previously published.

Remarks.--Records excellent except those for periods of ice effect, which are good, and those for period of no gage-height record, which are fair. Some diurnal fluctuation caused by mill above station.

Revisions (water years).--W 431: 1909-13 calendar years, 1914. W 726: Drainage area. W 781: 1924(M). Revised figures of discharge, in cubic feet per second, for the water year 1929, superseding those published in Water-Supply Paper 681, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1929		1929		1929	
Jan. 1.....	105	Feb. 9.....	160	Feb. 26.....	120
2.....	100	10.....	170	27.....	130
3.....	100	11.....	160	28.....	135
4.....	100	12.....	150	Mar. 1.....	125
5.....	100	13.....	140	2.....	125
6.....	560	14.....	135	3.....	125
12.....	150	15.....	130	4.....	130
13.....	145	16.....	125	5.....	140
14.....	145	17.....	125	6.....	200
15.....	140	18.....	140	7.....	280
16.....	140	19.....	150	8.....	240
17.....	135	20.....	135	9.....	220
18.....	135	21.....	130	10.....	195
19.....	250	22.....	125	11.....	180
Feb. 6.....	150	23.....	120	12.....	180
7.....	205	24.....	120	13.....	220
8.....	190	25.....	115	14.....	400

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
January 1929.....	560	100	206	1.20	1.39
February.....	205	115	144	.842	.87
March.....	2,200	125	835	4.66	5.63
Water year 1928-29.....	2,200	20	274	1.60	21.76

## Souhegan River at Merrimack, N. H.--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	28	4.0	535
2.4	48	5.0	1,080
2.6	78	6.0	1,840
3.0	175	8.0	3,670
3.5	330		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	284	302	615	540	235	872	784	440	149	35	40
2	60	320	267	823	610	195	1,350	610	2,220	114	32	128
3	68	1,030	295	872	620	200	1,510	530	1,430	80	36	174
4	68	2,800	295	640	675	215	1,500	413	768	80	35	96
5	73	1,380	309	526	1,260	225	1,720	425	610	70	35	*90
6	73	636	636	445	1,190	260	3,610	417	517	68	52	75
7	71	752	779	483	845	323	2,740	429	441	61	68	53
8	226	1,680	553	437	655	320	1,780	401	334	60	60	42
9	367	1,220	450	421	610	242	1,360	358	278	66	60	55
10	251	784	548	409	468	239	1,160	330	326	73	60	60
11	210	615	481	369	461	351	1,110	254	288	*228	52	58
12	352	540	409	330	470	911	954	929	264	224	*64	58
13	351	499	360	298	400	924	795	1,240	221	134	212	54
14	221	468	285	284	375	784	1,010	730	195	86	281	41
15	176	600	230	316	350	620	1,440	562	151	84	157	36
16	190	566	185	409	300	510	960	571	141	80	112	43
17	176	724	190	458	275	490	774	508	149	68	124	46
18	157	605	225	508	195	499	665	401	134	60	190	45
19	149	522	265	630	278	512	595	377	126	63	134	56
20	131	450	*260	494	320	481	476	385	128	56	96	90
21	105	393	320	762	344	512	463	553	110	46	88	54
22	96	346	780	540	337	522	454	680	94	43	78	46
23	112	*309	713	649	316	504	421	535	90	50	70	64
24	105	381	562	845	225	660	377	433	94	48	66	57
25	369	373	458	571	230	640	358	334	112	46	48	57
26	533	385	a390	562	285	708	553	582	131	46	50	57
27	359	481	a350	1,270	281	1,010	548	562	131	43	58	55
28	248	380	a315	1,620	270	1,190	670	437	124	39	60	40
29	399	362	a305	1,190	239	954	2,140	377	105	43	60	34
30	388	325	a300	713	-	818	1,260	417	160	42	56	51
31	309	-	410	535	-	878	-	330	-	36	42	-
Total	6,447	20,612	12,227	19,004	13,444	16,932	33,626	15,894	10,312	2,386	2,573	1,855
Mean	208	687	394	613	464	546	1,121	513	344	77.0	83.0	61.8
Cfsm	1.22	4.02	2.30	3.58	2.71	3.19	6.56	3.00	2.01	0.450	0.485	0.361
In.	1.40	4.48	2.66	4.13	2.92	3.68	7.31	3.46	2.24	0.52	0.56	0.40

Calendar year 1951: Max 2,800 Min 54 Mean 395 Cfsm 2.31 In. 31.39  
 Water year 1951-52: Max 3,610 Min 32 Mean 424 Cfsm 2.48 In. 33.76

Peak discharge (base, 2,250 cfs).--Nov. 4 (9 a.m.) 3,220 cfs (7.45 ft); Apr. 6 (3:30 p.m.) 4,300 cfs (8.34 ft); Apr. 29 (11 a.m.) 2,410 cfs (6.64 ft); June 2 (3:30 to 4:30 p.m.) 2,710 cfs (6.96 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Warner River at Davisville.

Note.--Stage-discharge relation affected by ice Nov. 26, 30, Dec. 13-21, Jan. 31, Feb. 1, 12-18, 24-26, Mar. 1-5, 15-17.

## North Nashua River near Leominster, Mass.

Location.--Lat 42°30'06", long. 71°43'23", on right bank 1 1/3 miles upstream from Wekepeke Brook, 2 1/2 miles southeast of Leominster, Worcester County, and 6.1 miles upstream from confluence with South Branch Nashua River.

Drainage area.--107 sq mi.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 270.04 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 188 cfs.

Extremes.--Maximum discharge during year, 2,140 cfs Nov. 3 (gage height, 6.75 ft), from rating curve extended above 1,300 cfs by logarithmic plotting; minimum, 18 cfs July 14; minimum daily, 32 cfs July 20, 26.  
1935-52: Maximum discharge, 16,300 cfs Mar. 18, 1936 (gage height, 20.53 ft, from floodmarks), by computation of flow over dam; minimum, 11 cfs Aug. 29, 1948; minimum daily, 22 cfs Sept. 27, 1936.

Remarks.--Records excellent except those for periods of ice effect or backwater from debris, which are fair. Flow regulated by mills above station. Discharge includes flow diverted from 2.1 sq mi in Squannacook River basin to North Nashua River basin for municipal supply of Fitchburg.

Rating tables, water year 1951-52, except periods of ice effect and backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3

Nov. 4 to Sept. 30

1.6	49	4.0	425	1.3	26	3.5	318
2.0	91	5.0	820	1.5	42	4.0	447
3.0	223	6.0	1,470	2.0	94	5.0	900
				2.5	160	6.0	1,520
				3.0	234		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*53	160	171	428	390	168	457	441	408	73	77	105
2	23	169	186	564	402	161	720	361	1,330	61	49	259
3	62	1,260	204	508	402	198	685	305	624	*57	40	112
4	65	954	189	404	582	190	555	280	402	60	44	71
5	68	539	218	b330	745	222	614	271	326	82	57	62
6	67	390	476	b310	568	284	944	239	283	65	77	45
7	77	657	413	520	450	269	700	237	232	59	72	36
8	343	869	336	265	*377	216	551	207	178	56	58	42
9	160	*543	332	b275	361	195	464	192	192	54	46	41
10	113	390	*387	b260	324	225	413	164	163	118	124	41
11	111	350	305	*244	332	460	369	171	136	168	111	42
12	180	313	266	218	302	*795	322	588	140	82	71	43
13	125	262	234	214	239	578	309	393	139	60	232	37
14	101	274	180	239	222	460	543	302	112	49	116	35
15	97	359	b170	230	202	362	543	269	93	51	82	50
16	92	366	b160	318	184	332	416	268	109	48	73	57
17	89	523	b180	300	206	326	340	202	106	45	279	47
18	86	379	b170	471	252	338	307	228	110	44	128	48
19	83	324	b190	428	234	352	256	232	99	37	83	156
20	79	274	b210	442	218	359	246	213	100	32	66	136
21	70	226	b520	498	214	379	*245	366	83	40	60	81
22	76	200	745	350	206	393	213	340	82	45	86	86
23	79	216	470	668	173	464	208	271	90	41	60	80
24	79	245	366	527	174	539	189	201	99	44	43	79
25	317	225	b300	b350	206	470	223	249	95	41	50	73
26	163	290	b270	549	206	547	382	332	95	32	47	74
27	136	295	b240	1,240	200	690	328	*288	94	53	46	68
28	154	226	b230	1,090	198	636	907	225	73	50	46	57
29	176	207	780	190	494	1,080	190	190	92	44	47	64
30	153	189	266	b490	-	464	618	184	99	41	38	62
31	122	-	422	b400	-	467	-	176	-	72	34	-
Total	3,618	11,693	9,031	13,730	8,759	12,023	14,159	8,385	6,184	1,804	2,442	2,189
Mean	117	390	291	443	302	388	472	270	206	58.2	78.8	73.0
Cfsm	1.09	3.64	2.72	4.14	2.82	3.63	4.41	2.52	1.93	0.544	0.736	0.682
In.	1.26	4.06	3.14	4.77	3.04	4.18	4.92	2.91	2.15	0.63	0.85	0.76

Calendar year 1951: Max 2,160 Min 49 Mean 244 Cfsm 2.28 In. 30.98  
Water year 1951-52: Max 1,330 Min 32 Mean 257 Cfsm 2.40 In. 32.67

Peak discharge (base, 1,000 cfs).--Nov. 3 (5 p.m.) 2,140 cfs (6.75 ft); Nov. 7 (10 p.m.) 1,160 cfs (5.45 ft); Jan. 27 (1 p.m.) 1,320 cfs (5.71 ft); Apr. 6 (4:30 to 5 a.m.) 1,050 cfs (5.26 ft); Apr. 28 (9 to 10 p.m.) 1,560 cfs (6.05 ft); June 2 (4 a.m.) 1,740 cfs (6.29 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from debris May 12 to June 2, July 10 to Sept. 30.

## Rocky Brook near Sterling, Mass.

Location.--Lat 42°26'57", long. 71°48'10", on right bank 150 ft downstream from bridge on Beaman Road, 0.7 mile upstream from mouth, and 2½ miles west of Sterling, Worcester County.

Drainage area.--2.28 sq mi.

Records available.--October 1946 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 505 ft (from topographic map).

Average discharge.--6 years, 3.38 cfs.

Extremes.--Maximum discharge during year, 64 cfs Nov. 3, June 1 (gage height, 3.49 ft); minimum, 0.05 cfs July 25, 26, 27, 31.

1946-52: Maximum discharge, 73 cfs Mar. 20, 1948 (gage height, 3.54 ft); maximum gage height, 3.91 ft Feb. 7, 1951 (backwater from ice); minimum discharge, 0.01 cfs several days in August and September 1949, Aug. 16-19, Sept. 10, Oct. 1-10, 1950.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those below 0.2 cfs, which are fair. Flow regulated by reservoir since 1949.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.82	0.05	2.6	2.8
1.9	.14	2.7	4.2
2.0	.32	2.8	6.6
2.1	.59	2.9	10.1
2.2	.94	3.0	14.5
2.3	1.35	3.1	20
2.4	1.75	3.3	38
2.5	2.1		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*5.2	4.2	3.9	12.7	8.0	2.0	6.6	4.6	16.4	1.16	0.73	1.22
2	5.2	3.9	4.4	14.1	9.0	1.9	9.0	3.8	31	.78	.32	3.2
3	5.2	31	4.2	12.7	9.0	1.85	7.3	3.3	12.3	*.56	.22	1.35
4	5.2	13.2	3.8	10.1	15.2	1.95	6.0	3.0	8.7	.48	.17	.98
5	5.2	9.0	4.4	8.0	15.7	2.4	8.3	2.8	7.3	.72	.14	.65
6	5.0	7.6	10.5	8.7	*11.0	3.6	12.3	2.7	6.0	.48	.45	.50
7	6.9	19.0	6.6	7.3	8.7	3.6	6.0	2.7	4.8	.32	.72	.37
8	14.5	14.3	5.5	7.0	7.0	2.8	4.4	2.5	3.6	.24	.42	.30
9	6.6	9.8	7.4	6.6	7.3	2.45	3.8	2.4	2.9	.20	.26	.24
10	5.8	8.7	8.0	6.2	6.2	2.4	3.6	2.35	2.5	.49	5.9	.20
11	6.2	8.0	5.8	5.8	6.0	8.0	3.3	2.45	2.45	1.95	3.9	.17
12	8.7	7.3	*4.9	5.5	b5.2	17.6	3.0	14.4	2.4	1.03	1.4	.14
13	6.0	7.0	3.9	5.5	b3.9	b8.5	2.8	7.3	2.1	.62	7.7	.12
14	5.2	*7.0	3.2	*3.9	b3.6	5.8	9.7	4.8	1.75	.35	2.5	.11
15	5.2	11	b3.1	4.5	b3.2	4.8	6.0	3.5	1.55	.22	1.7	.10
16	4.8	10	b3.5	6.6	b3.1	3.9	3.9	4.6	1.45	.18	1.6	.11
17	4.4	11	b3.3	4.6	3.3	*3.8	3.3	3.8	1.45	.15	4.2	.13
18	3.8	12	b4.5	9.5	3.5	4.6	3.0	5.0	1.6	.11	1.9	.11
19	3.2	8.0	b8.0	*7.0	3.9	5.0	2.6	4.2	1.3	.10	1.4	1.0
20	2.7	6.0	b6.0	8.3	3.6	4.6	2.25	4.2	1.16	.09	1.02	3.0
21	2.35	5.4	b19	8.4	3.5	5.8	2.2	9.8	.90	.09	.82	6.6
22	2.1	5.0	16.4	b5.2	3.5	6.6	2.2	6.0	.90	.09	1.5	6.2
23	1.95	4.8	9.8	15.8	3.2	9.5	2.2	4.4	.86	.08	.98	6.0
24	1.9	6.0	8.4	b9.4	3.1	9.4	*2.1	3.8	.78	.07	.62	6.4
25	8.6	5.0	7.0	b6.6	2.9	7.6	3.4	5.9	.85	.06	.45	6.2
26	3.5	5.2	6.6	13.1	2.5	10.5	8.4	8.0	.70	.05	.32	6.2
27	2.7	6.5	6.0	23	2.25	11.4	4.6	*5.2	1.07	.10	.24	6.0
28	2.9	4.6	b5.3	18.7	2.15	9.4	22	3.8	.78	.10	.17	6.0
29	3.1	4.4	5.2	b13	2.05	7.3	13.4	5.2	1.35	.08	.15	5.8
30	2.4	4.2	7.2	b9.8	-	6.6	6.2	6.0	1.85	.06	.15	*5.8
31	2.15	-	13.6	b8.7	-	6.2	-	5.8	-	*.37	.12	-
Total	148.65	259.1	209.4	286.3	161.55	181.85	173.85	148.30	122.55	11.38	42.19	75.20
Mean	4.80	8.64	6.75	9.24	5.57	5.87	5.80	4.78	4.08	0.367	1.56	2.51
Cfsm	2.11	3.79	2.98	4.05	2.44	2.57	2.54	2.10	1.79	0.161	0.596	1.10
In.	2.42	4.23	3.42	4.67	2.64	2.97	2.84	2.42	2.00	0.19	0.69	1.23
Calendar year 1951: Max	34				Min 0.32	Mean 4.94	Cfsm 2.17	In. 29.42				
Water year 1951-52: Max	31				Min 0.05	Mean 4.97	Cfsm 2.18	In. 29.72				

Peak discharge (base, 45 cfs).--Nov. 3 (12 m. to 1 p.m.) 64 cfs (3.49 ft); Nov. 7 (4:30 to 5 p.m.) 46 cfs (3.36 ft); June 1 (12 p.m.) 64 cfs (3.49 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 15-27, Sept. 17-30; discharge estimated on basis of recorded range in stage, 1 discharge measurement, weather records, reservoir records, and records for Hop Brook near New Salem and for stations on other nearby streams. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.



South Branch Nashua River at Clinton, Mass.

Location.--Lat 42°24'15", long. 71°41'25", at Wachusett Dam, 1 mile south of Clinton, Worcester County.

Drainage area.--107.69 sq mi since July 1937.

Records available.--July 1896 to September 1952.

Average discharge.--56 years, 183 cfs (adjusted to present drainage area).

Remarks.--Flow regulated by Wachusett Reservoir and several ponds. Records adjusted for change in contents in and wastage from Wachusett Reservoir, and diversions from Ware River and Quabbin Reservoir on Swift River. Entire flow, except wastage, diverted for use of Boston metropolitan district.

Cooperation.--Records furnished by Water Division of Metropolitan District Commission.

Revisions (water years).--W 1051: 1928.

Monthly discharge and rainfall, water year October 1951 to September 1952

Month	Runoff (millions of gallons)	Discharge per square mile		Runoff (inches)	Rainfall (inches)
		Millions of gallons per day	Cubic feet per second		
October.....	1,790.1	0.536	0.830	0.96	4.48
November.....	7,351.8	2.276	3.52	3.93	7.33
December.....	6,147.6	1.841	2.85	3.28	4.83
Calendar year 1951..	55,466.4	1.411	2.18	29.64	53.42
January.....	9,670.0	2.897	4.48	5.17	4.83
February.....	6,718.8	2.151	3.33	3.59	3.26
March.....	7,772.8	2.328	3.60	4.15	3.76
April.....	8,504.9	2.633	4.07	4.54	4.94
May.....	5,832.6	1.747	2.70	3.12	4.53
June.....	5,044.3	1.561	2.42	2.70	4.36
July.....	954.7	.286	.442	.51	3.54
August.....	1,606.3	.481	.744	.86	6.49
September.....	672.4	.208	.322	.36	3.74
Water year 1951-52...	62,066.1	1.575	2.44	33.17	56.09

## Squannacook River near West Groton, Mass.

Location.--Lat 42°38'03", long. 71°39'30", on left bank 0.7 mile downstream from Trout Brook and 2.7 miles northwest of West Groton, Middlesex County.

Drainage area.--62.8 sq mi, excludes 2.10 sq mi above outlet of Fitchburg Reservoir.

Records available.--October 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 244.27 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,210 cfs Nov. 4 (gage height, 5.71 ft); minimum daily, 11 cfs Aug. 3, Sept. 1, 14.

1949-52: Maximum discharge, 1,440 cfs Feb. 19, 1951 (gage height, 6.03 ft); minimum daily, 4.3 cfs Aug. 14, 1950.

Remarks.--Records excellent except those for periods of ice effect, which are good, and those for periods of no gage-height record, which are fair. Flow regulated by mill above station. Entire flow from 2.10 sq mi above outlet of Fitchburg Reservoir diverted for municipal supply of Fitchburg during most years; some flow during winter and spring of 1952 included in daily discharge at station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	11	3.5	234
1.9	19	4.0	362
2.1	31	5.0	760
2.5	68	5.5	1,060
3.0	138		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	78	106	250	b240	99	333	317	161	58	14	11
2	20	113	101	325	219	87	482	246	858	*42	13	51
3	21	349	125	322	232	98	555	206	614	41	11	75
4	*21	978	110	*246	273	87	499	173	304	22	14	43
5	*21	450	114	188	484	98	507	171	212	22	17	31
6	20	269	221	175	*439	116	911	157	179	26	18	29
7	16	*259	306	182	320	136	674	159	152	34	18	15
8	118	611	206	162	241	132	463	141	123	31	28	18
9	157	419	166	146	223	106	371	150	124	28	23	23
10	87	264	*216	140	192	115	317	122	104	31	19	23
11	65	198	181	135	188	145	284	112	94	94	*37	21
12	80	184	145	125	177	418	250	328	89	93	34	19
13	99	180	132	117	144	450	212	473	80	38	82	17
14	53	152	106	124	142	330	283	271	67	43	129	11
15	63	190	101	120	120	260	449	196	55	32	66	12
16	47	194	b87	145	118	220	314	196	74	31	45	16
17	44	267	b105	157	107	*200	239	173	60	29	94	16
18	48	225	100	181	116	186	*206	146	48	24	95	16
19	36	181	116	246	127	194	181	160	48	26	51	18
20	37	150	122	190	129	182	157	*141	48	18	39	32
21	33	135	151	274	121	208	159	208	47	20	31	24
22	40	110	324	212	118	206	143	255	25	19	29	26
23	36	128	296	259	113	219	128	190	42	18	28	23
24	36	130	221	339	101	317	130	148	41	18	17	24
25	100	128	177	239	b115	269	124	130	45	17	27	30
26	168	140	159	206	106	309	208	241	56	16	25	26
27	110	166	b145	490	103	422	230	212	50	13	24	*21
28	71	129	b135	602	100	459	319	155	45	17	22	12
29	125	122	124	b440	94	384	875	130	32	17	22	34
30	119	110	122	b315	-	322	530	129	62	16	21	15
31	88	-	190	b270	-	345	-	138	-	15	13	-
Total	1,992	6,989	4,910	7,322	5,202	7,119	10,533	5,954	3,959	949	1,106	732
Mean	64.3	233	158	236	179	230	351	192	131	30.6	35.7	24.4
Cfsm	1.02	3.71	2.52	3.76	2.85	3.66	5.59	3.06	2.09	0.487	0.568	0.389
In.	1.18	4.14	2.91	4.34	3.08	4.22	6.24	3.53	2.33	0.56	0.65	0.43

Calendar year 1951: Max 1,040 Min 13 Mean 141 Cfsm 2.25 In. 30.51  
 Water year 1951-52: Max 978 Min 11 Mean 155 Cfsm 2.47 In. 33.61

Peak discharge (base, 670 cfs).--Nov. 4 (7:30 to 8:30 a.m.) 1,210 cfs (5.71 ft); Nov. 8 (12:30 to 3 p.m.) 674 cfs (4.82 ft); Apr. 6 (2 to 4 p.m.) 1,080 cfs (5.54 ft); Apr. 29 (11:30 a.m. to 1:30 p.m.) 1,010 cfs (5.43 ft); June 2 (6 p.m.) 1,200 cfs (5.70 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Mar. 13-16, June 25 to July 1, July 21 to Aug. 4, Aug. 8-10; discharge estimated on basis of recorded range in stage when available, weather records, and records for Souhegan River at Merrimack, N. H.

## Nashua River at East Pepperell, Mass.

Location.--Lat 42°40'03", long. 71°34'32", on right bank 200 ft downstream from power-plant of St. Regis Paper Co. at East Pepperell, Middlesex County, and 0.8 mile upstream from Nissitissit River.

Drainage area.--Total above gage, 433 sq mi; net above gage, 316 sq mi (flow diverted from 117 sq mi for use of Boston metropolitan district and city of Worcester).

Records available.--October 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 169.04 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 516 cfs (adjusted for wastage into Nashua River).

Extremes.--Maximum discharge during year, 3,590 cfs Nov. 5 (gage height, 7.96 ft); minimum daily, 13 cfs Aug. 31.

1935-52: Maximum discharge, 20,900 cfs Mar. 20, 1936 (gage height, 19.1 ft, from floodmarks), from rating curve extended above 12,000 cfs on basis of velocity-area studies; minimum daily, 1.1 cfs Aug. 13, 1939.

Remarks.--Records excellent except those for periods of backwater from aquatic vegetation, which are good. Figures of daily discharge include water wasted in diverting drainage from basin of South Branch Nashua River for use of Boston metropolitan district, and water diverted around station through plant of St. Regis Paper Co. Flow regulated by powerplant above station.

Revisions.--W 801: Drainage area.

Rating tables, water year 1951-52, except periods of backwater from aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27,  
July 22 to Sept. 30

Jan. 28 to July 21

0.4	12	1.5	225	2.0	425
.5	17	2.0	425	3.0	895
.7	32	4.0	1,370	5.0	2,140
.8	42	6.0	2,410	6.5	3,150
1.0	69	7.1	3,070		
1.2	117				

Note.--Same as preceding table below 2.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	576	700	880	2,060	672	1,430	2,400	564	313	186	19
2	172	596	248	1,490	1,850	596	1,510	2,140	1,420	281	82	299
3	172	694	530	1,540	1,720	596	1,860	1,720	2,560	253	87	202
4	*168	2,070	745	1,420	1,740	604	1,890	1,490	*2,470	225	250	362
5	172	3,050	740	1,240	2,150	654	1,780	797	2,030	201	190	637
6	172	2,130	*740	828	2,380	725	2,150	958	1,340	205	186	85
7	181	1,770	975	1,190	*2,170	810	2,550	853	1,100	201	202	17
8	481	*2,370	1,120	1,050	*1,820	795	2,060	847	825	193	226	179
9	695	2,600	778	*1,040	1,590	686	1,470	486	686	178	76	238
10	616	2,070	1,160	1,040	1,440	658	1,570	586	1,030	167	111	252
11	423	1,360	1,120	1,030	1,320	820	1,430	857	820	241	679	227
12	342	1,420	982	1,020	1,290	1,550	1,430	951	622	345	307	194
13	574	1,190	975	512	1,130	2,060	1,170	1,710	480	297	314	143
14	197	1,130	957	716	1,030	*1,890	997	1,360	576	258	947	15
15	454	1,140	990	800	944	1,520	1,520	1,050	247	210	416	139
16	426	1,190	276	915	873	1,230	1,700	576	324	186	*114	186
17	334	1,350	444	1,040	795	1,130	1,320	722	142	182	277	183
18	278	1,200	854	1,030	790	1,080	1,210	1,050	306	171	925	183
19	262	1,320	850	1,240	873	1,130	1,100	632	346	153	560	60
20	262	1,190	695	1,220	868	1,150	1,130	683	358	143	351	25
21	254	1,120	724	1,610	835	1,210	*690	861	325	146	311	54
22	252	398	1,070	1,540	785	1,240	755	1,160	373	161	294	441
23	236	993	1,430	1,560	715	1,280	764	881	366	151	100	309
24	134	1,200	1,090	1,810	654	1,540	653	810	354	-101	16	278
25	465	354	980	1,720	650	1,640	651	978	*334	32	278	236
26	742	958	1,150	1,570	750	1,620	587	856	314	19	360	186
27	645	1,060	963	1,770	735	1,760	1,100	934	301	19	278	69
28	553	1,090	975	2,500	730	1,940	1,320	884	289	119	216	18
29	478	993	1,020	3,040	705	1,830	2,070	521	265	*183	216	*244
30	540	771	946	2,780	-	1,600	2,370	780	285	179	65	242
31	428	-	258	2,340	-	1,460	-	672	-	183	13	-
Total	11,276	39,373	26,485	43,275	35,392	37,476	42,237	31,225	21,432	5,696	8,633	5,742
Mean	364	1,312	854	1,396	1,220	1,209	1,408	714	184	278	191	181
(†)	7.2	47.5	37.5	309	253	25.5	120	65.0	97.6	6.4	6.7	6.2

Adjusted for wastage (figures represent net discharge from net drainage area)

Mean	357	1,265	817	1,087	968	1,183	1,287	942	617	177	272	183
Cfs/m	1.13	4.00	2.59	3.44	3.06	3.74	4.07	2.98	1.95	0.560	0.861	0.579
In.	1.30	4.47	2.98	3.97	3.30	4.32	4.55	3.44	2.18	0.65	0.99	0.65

		Observed				Adjusted						
Calendar year 1951:	Max	3,310	Min	16	Mean	755	Mean	715	Cfs/m	2.26	In.	30.72
Water year 1951-52:	Max	3,050	Min	13	Mean	842	Mean	761	Cfs/m	2.41	In.	32.80

\* Discharge measurement made on this day.

† Water wasted in diverting drainage from basin of South Branch Nashua River for use of Boston metropolitan district, equivalent in cubic feet per second. Records furnished by Water Division of Metropolitan District Commission.

Note.--Backwater from aquatic vegetation Oct. 1 to Nov. 4, May 6-10, 12, 15-21, 23, 24, 29, May 31 to June 2, June 9, June 12 to Aug. 13, Aug. 15-17, Aug. 19 to Sept. 30.

## MERRIMACK RIVER BASIN

Assabet River at Maynard, Mass.

Location.--Lat 42°25'55", long. 71°27'01", on right bank at Maynard, Middlesex County, 150 ft upstream from bridge on State Highway 27, 1.7 miles downstream from Assabet Brook, and 7.1 miles upstream from confluence with Sudbury River.

Drainage area.--116 sq mi.

Records available.--July 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 145 ft (from topographic map).

Average discharge.--11 years, 157 cfs.

Extremes.--Maximum discharge during year, 1,020 cfs Nov. 9 (gage height, 4.93 ft); minimum daily, 15 cfs Aug. 3.  
1941-52: Maximum discharge, 1,460 cfs Mar. 21, 1948 (gage height, 5.75 ft); minimum daily, 3.5 cfs Aug. 17, 1941.

Remarks.--Records good. Flow regulated by mills above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1945 and 1946, superseding those published in Water-Supply Papers 1031, 1051, and 1105, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1945		1945		1945	
July 3.....	154	Aug. 1.....	86	Aug. 30.....	59
4.....	136	2.....	74	31.....	56
5.....	119	3.....	71	Nov. 1.....	51
6.....	115	4.....	58	2.....	51
7.....	117	5.....	72	3.....	96
8.....	113	6.....	42	4.....	64
9.....	124	7.....	78	5.....	69
10.....	110	8.....	93	6.....	66
11.....	133	9.....	119	7.....	48
12.....	158	10.....	104	8.....	51
13.....	146	11.....	47	9.....	99
14.....	110	12.....	90	10.....	62
15.....	107	13.....	78	11.....	105
16.....	125	14.....	51	12.....	97
17.....	124	15.....	20	13.....	125
18.....	126	16.....	42	14.....	77
19.....	124	17.....	72	15.....	114
20.....	90	18.....	22	16.....	123
21.....	119	19.....	80	17.....	149
22.....	101	20.....	16	18.....	152
23.....	113	21.....	19	19.....	155
24.....	65	22.....	17	20.....	221
25.....	97	23.....	20	21.....	211
26.....	41	24.....	30	22.....	178
27.....	44	25.....	83	23.....	188
28.....	48	26.....	92	24.....	142
29.....	90	27.....	92	25.....	112
30.....	107	28.....	106	26.....	153
31.....	76	29.....	51	27.....	178

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
July 1945.....	3,480	185	41	112	0.966	1.12
August.....	1,940	119	16	62.6	.540	.62
Water year 1944-45..	64,929	908	13	178	1.53	20.81
November 1945.....	3,210	221	21	107	.922	1.05
Calendar year 1945..	69,388	908	16	190	1.64	22.24
Water year 1945-46..	70,912	1,060	15	194	1.67	22.74

## Assabet River at Maynard, Mass--Continued

Rating tables, water year 1951-52 (gage height, in feet, and discharge,  
in cubic feet per second)

Oct. 1 to Mar. 13

Mar. 14 to Sept. 30

1.9	29	3.0	255	1.67	15	3.0	289
2.1	54	4.0	800	1.9	38	4.0	620
2.5	132	4.9	1,010	2.2	81	4.4	790
				2.5	141		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*41	106	230	459	456	200	385	592	385	90	23	25
2	33	*148	215	536	439	199	376	475	522	79	21	77
3	32	373	228	572	456	198	378	379	656	65	15	81
4	32	672	202	520	512	185	366	350	656	62	18	70
5	32	810	205	454	612	212	356	319	553	57	24	61
6	31	672	*235	410	628	252	457	272	438	57	29	40
7	34	656	267	400	*552	291	525	258	344	59	30	36
8	109	890	267	357	462	285	494	258	286	55	29	52
9	153	1,000	255	*359	428	276	*424	241	247	44	28	54
10	150	848	297	321	406	273	372	222	225	33	37	44
11	117	672	273	300	400	321	322	214	228	36	95	34
12	86	552	250	270	386	544	298	334	214	23	92	34
13	102	452	235	264	315	743	284	468	198	38	143	21
14	92	400	200	276	321	*763	310	457	174	48	157	21
15	114	378	200	255	279	656	366	399	148	41	111	35
16	92	382	141	273	245	557	392	353	123	37	85	36
17	37	396	182	282	242	487	359	307	128	32	252	*35
18	58	410	180	333	222	446	319	281	128	32	334	34
19	61	410	232	403	230	442	286	275	123	34	275	*38
20	53	351	238	434	242	472	266	*266	107	29	204	53
21	57	306	315	462	248	522	241	301	95	30	143	65
22	59	245	442	410	242	545	225	328	86	29	130	56
23	33	276	556	484	238	553	211	319	83	27	115	47
24	40	245	556	572	222	624	201	286	78	21	95	49
25	96	235	473	516	230	656	196	266	*78	22	78	55
26	117	300	427	524	225	604	249	286	73	26	67	44
27	112	270	375	620	220	557	298	304	73	29	59	38
28	104	270	327	734	215	529	402	281	67	22	58	36
29	118	279	300	754	215	491	624	269	70	*18	57	37
30	96	255	294	604	-	453	347	347	86	21	55	36
31	96	-	375	512	-	424	-	356	-	17	35	-
Total	2,385	13,235	8,972	13,610	9,887	13,749	10,684	10,063	6,670	1,213	2,894	1,344
Mean	76.9	441	289	439	341	444	356	325	222	39.1	93.4	44.8
Cfs/m	0.663	3.80	2.49	3.78	2.94	3.83	3.07	2.80	1.91	0.337	0.805	0.386
In.	0.76	4.24	2.88	4.36	3.17	4.41	3.43	3.23	2.14	0.39	0.93	0.43

Calendar year 1951: Max 1,000 Min 21 Mean 223 Cfs/m 1.92 In. 28.13  
 Water year 1951-52: Max 1,000 Min 15 Mean 259 Cfs/m 2.23 In. 30.37

\* Discharge measurement made on this day.

## Sudbury River at Framingham Center, Mass.

Location.--Lat 42°17'30", long. 71°26'40", at dam of Framingham Reservoir No. 1, half a mile upstream from outlet of Farm Pond and three-quarters of a mile southwest of Framingham Center, Middlesex County.

Drainage area.--75.2 sq mi since 1881.

Records available.--January 1875 to September 1952.

Average discharge.--77 years, 111 cfs (adjusted to present drainage area).

Remarks.--Records adjusted for change in reservoir contents, diversions, and wastage. Flow diverted as needed for use of Boston metropolitan district. Part of flow from Wachusett Reservoir on South Branch Nashua River is diverted into Sudbury Reservoir en route to Boston metropolitan district.

Cooperation.--Records furnished by Water Division of Metropolitan District Commission.

Revisions (water years).--W 1051: 1937.

Monthly discharge and rainfall, water year October 1951 to September 1952

Month	Runoff (millions of gallons)	Discharge per square mile		Runoff (inches)	Rainfall (inches)
		Millions of gallons per day	Cubic feet per second		
October.....	480.0	0.206	0.319	0.37	4.45
November.....	5,495.2	2.436	3.77	4.20	8.39
December.....	4,237.1	1.818	2.81	3.24	5.17
Calendar year 1951....	32,001.8	1.166	1.80	24.48	51.04
January.....	5,533.6	2.374	3.67	4.23	4.89
February.....	3,878.0	1.778	2.75	2.97	3.87
March.....	6,077.8	2.607	4.03	4.65	3.74
April.....	3,995.0	1.771	2.74	3.08	4.79
May.....	3,200.2	1.373	2.12	2.45	4.03
June.....	2,125.0	.942	1.46	1.63	4.45
July.....	-514.9	-.221	-.342	-.39	.75
August.....	929.3	.399	.617	.71	7.68
September.....	5.2	.002	.0036	.004	2.25
Water year 1951-52....	35,441.5	1.288	1.99	27.12	54.46

Note.--Negative figures indicate that evaporation and seepage from reservoir exceeded in-flow.

## Lake Cochituate Outlet at Cochituate, Mass.

Location.--Lat 42°18'45", long. 71°23'15", at outlet three-eighths of a mile north of Cochituate railroad station, Middlesex County, and 1½ miles upstream from Sudbury River.

Drainage area.--17.40 sq mi since 1937.

Records available.--January 1863 to September 1952.

Average discharge.--89 years, 24.9 cfs (adjusted to present drainage area).

Remarks.--Records adjusted for change in reservoir contents, diversions, and wastage.

Entire flow available, if needed, for use of Boston metropolitan district; no diversion for water supply since 1931.

Cooperation.--Records furnished by Water Division of Metropolitan District Commission.

Monthly discharge and rainfall, water year October 1951 to September 1952

Month	Runoff (millions of gallons)	Discharge per square mile		Runoff (inches)	Rainfall (inches)
		Millions of gallons per day	Cubic feet per second		
October.....	302.8	0.561	0.889	1.00	4.44
November.....	1,437.8	2.754	4.28	4.75	8.81
December.....	1,103.2	2.045	3.16	3.65	5.31
Calendar year 1951....	7,890.4	1.242	1.92	26.10	53.30
January.....	1,611.4	2.987	4.62	5.33	5.62
February.....	1,296.7	2.570	3.98	4.29	3.75
March.....	2,010.1	3.727	5.77	6.65	4.71
April.....	1,314.4	2.518	3.90	4.35	4.42
May.....	1,137.1	2.108	3.26	3.76	4.29
June.....	950.1	1.820	2.82	3.14	4.72
July.....	-4.5	-.008	-.013	-.01	.72
August.....	426.7	.791	1.22	1.41	8.35
September.....	179.0	.343	.531	.59	2.14
Water year 1951-52....	11,764.8	1.847	2.86	38.91	57.26

Note.--Negative figures indicate that evaporation and seepage from reservoir exceeded in-flow.

Concord River below River Meadow Brook, at Lowell, Mass.

Location.--Lat 42°38'12", long. 71°18'09", on right bank 300 ft downstream from Rogers Street Bridge at Lowell, Middlesex County, 0.3 mile downstream from River Meadow Brook, and 0.8 mile upstream from mouth.

Drainage area.--Total above gage, 405 sq mi; net above gage, 312 sq mi (diversion as needed from 92.6 sq mi for use of Boston metropolitan district).

Records available.--December 1936 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 67.41 ft above mean sea level, datum of 1929.

Average discharge.--15 years (1937-52), 432 cfs (adjusted to net drainage area).

Extremes.--Maximum discharge during year, 2,290 cfs Nov. 11 (gage height, 7.10 ft); minimum, 26 cfs Oct. 6; minimum daily, 84 cfs Oct. 6.  
1936-52: Maximum discharge, 3,790 cfs July 29, 1938 (gage height, 8.11 ft); minimum, 7.0 cfs July 12, Dec. 10, 1949; minimum daily, 13 cfs Aug. 28, 1949.

Remarks.--Records excellent except those for periods of ice effect or backwater from aquatic vegetation, which are good. Daily discharge includes water wasted from 92.6 sq mi in basins of Sudbury River and Lake Cochituate. Water diverted above station for use of city of Lowell. Flow regulated by mills above station.

Rating table, water year 1951-52, except periods of ice effect and backwater from aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)

4.0	79	5.5	735
4.2	120	6.0	1,120
4.5	204	7.1	2,290
5.0	430		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	128	497	1,040	1,320	1,800	828	1,570	1,420	1,000	320	116	297
2	118	533	1,010	1,430	1,760	b790	1,510	1,450	1,260	313	92	326
3	116	777	1,000	*1,480	1,730	812	1,460	1,390	1,430	289	116	305
4	111	1,020	*968	1,500	1,790	784	1,410	1,320	1,570	284	*143	303
5	113	1,250	936	1,440	*1,900	812	1,350	1,250	1,610	271	121	297
6	84	1,430	952	1,350	1,960	872	1,370	1,190	1,580	255	139	262
7	114	1,640	944	b1,300	1,960	952	1,390	1,100	1,490	257	176	255
8	239	1,850	936	b1,300	1,880	984	1,410	1,040	1,410	229	204	290
9	282	2,050	952	b1,300	1,810	1,030	1,410	978	1,330	210	210	248
10	330	2,220	992	1,270	1,740	1,070	1,380	912	1,240	199	269	234
11	365	2,290	984	b1,200	1,680	1,150	1,310	865	1,160	192	365	239
12	397	2,220	968	b1,150	1,590	1,350	1,220	944	1,090	167	380	215
13	380	2,110	928	1,110	1,360	1,620	1,160	976	1,040	165	521	166
14	392	1,980	880	1,080	1,340	1,860	1,150	1,030	976	220	539	188
15	402	1,860	828	1,050	b1,300	2,000	1,160	1,070	920	156	545	240
16	392	1,760	b750	1,040	1,230	2,030	1,160	1,060	858	165	557	225
17	375	1,720	b720	1,020	1,160	2,000	1,160	1,030	784	145	605	207
18	350	1,640	b700	1,070	984	*1,930	1,140	1,020	756	109	657	159
19	311	1,580	b740	1,100	976	1,860	1,080	992	709	106	670	203
20	263	1,500	791	1,170	1,040	1,830	1,050	944	657	118	664	249
21	251	1,410	880	b1,250	1,050	1,830	1,000	*968	587	116	631	263
22	247	1,320	1,030	1,280	1,020	1,820	*960	976	551	140	612	298
23	236	1,260	1,160	1,430	976	1,830	904	968	545	105	557	290
24	251	1,190	1,270	1,510	b935	1,880	*850	944	*509	129	539	282
25	350	1,140	1,340	1,510	952	1,940	805	944	480	110	509	263
26	360	1,150	1,370	1,590	920	1,960	791	960	468	96	468	244
27	408	1,120	b1,300	1,730	896	1,930	828	960	430	120	430	211
28	452	1,110	b1,200	1,900	865	1,880	936	952	340	143	392	228
29	503	1,100	1,250	1,960	865	1,800	1,130	928	330	118	365	252
30	*491	1,070	1,220	1,960	-	1,720	1,300	936	329	111	311	238
31	*491	-	1,260	b1,900	-	1,640	-	952	-	114	307	-
Total	9,324	43,797	31,299	42,710	39,469	46,794	35,354	32,467	27,439	5,472	12,210	7,477
Mean	301	1,460	1,010	1,378	1,361	1,509	1,178	1,047	915	177	394	249
Cfm	-103	-410	-300	-399	-363	-446	-335	-289	-204	-42.5	-153	-118

Adjusted for wastage and diversion (figures represent net discharge from net drainage area)

	Mean	Cfm	In.	Mean	Cfm	In.	Mean	Cfm	In.	Mean	Cfm	In.
198	1.98	1,050	710	978	998	1,063	844	759	711	134	241	132
0.635	3.37	2.28	3.13	3.20	3.41	2.71	2.43	2.28	0.429	0.772	0.423	0.423
0.73	3.75	2.62	3.62	3.45	3.93	3.02	2.80	2.54	0.50	0.89	0.47	0.47

	Observed						Adjusted					
Calendar year 1951:	Max	2,290	Min	84	Mean	783	Mean	562	Cfm	1.80	In.	24.47
Water year 1951-52:	Max	2,290	Min	84	Mean	912	Mean	649	Cfm	2.08	In.	26.32

\* Discharge measurement made on this day.

† Water wasted from 92.6 sq mi in basins of Sudbury River and Lake Cochituate, and diversion for use of city of Lowell, equivalent in cubic feet per second. Records furnished by Water Division of Metropolitan District Commission and by city of Lowell.

b Stage-discharge relation affected by ice.

Note.--Backwater from aquatic vegetation Oct. 1 to Nov. 5, June 30 to Sept. 22.

Merrimack River below Concord River, at Lowell, Mass.

Location.--Lat 42°38'45", long. 71°17'56", on right bank 1,100 ft downstream from Concord River, at Lowell, Middlesex County.

Drainage area.--Total above gage, 4,635 sq mi; net above gage, 4,425 sq mi (diversions as needed from 210 sq mi for use of Boston metropolitan district and city of Worcester).

Records available.--June 1923 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 5.18 ft above mean sea level, datum of 1929. Prior to Mar. 7, 1934, at Boott Mills 1,800 ft upstream and 700 ft above mouth of Concord River, in same gage pool and at same datum; gage-height record (furnished by proprietors of locks and canals) was indicative of flow including that of Concord River.

Average discharge.--29 years, 7,093 cfs (adjusted for wastage into Merrimack River).

Extremes.--Maximum discharge during year, 53,700 cfs Apr. 7 (gage height, 52.59 ft); minimum daily, 456 cfs Aug. 3.  
1923-52: Maximum discharge, 173,000 cfs Mar. 20, 1936 (gage height, 68.4 ft, from floodmarks); minimum daily, 199 cfs Sept. 23, 1923.

Remarks.--Records excellent except those below 1,000 cfs, which are good. Daily discharge includes water wasted from 210 sq mi in basins of Sudbury and South Branch Nashua Rivers and Lake Cochituate. Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Newfound, Winnepesaukee, Winnisquam, and other lakes and reservoirs above station. See pages 137, 173 for description and monthly change in contents of many of these reservoirs.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

41.2	393	43.0	4,270
41.5	698	44.0	7,820
42.0	1,520	47.0	21,400
42.5	2,740	53.0	56,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,870	6,740	7,940	11,400	15,300	7,740	16,400	22,000	11,300	3,420	2,190	962
2	3,720	7,040	7,340	13,800	15,200	7,380	16,900	18,800	20,000	3,270	1,220	2,230
3	3,590	11,100	8,220	*14,700	15,300	8,340	21,400	15,500	35,300	2,710	456	2,700
4	3,090	29,000	*7,620	14,200	15,400	7,820	24,800	14,200	34,100	2,210	2,230	3,460
5	3,550	38,300	7,820	13,300	*17,200	8,140	26,400	12,100	26,600	1,980	2,230	3,470
6	1,690	29,900	8,700	11,600	20,400	8,540	40,000	10,800	21,400	1,540	2,290	1,870
7	2,220	22,500	14,000	12,300	19,900	8,750	52,400	10,700	17,900	3,380	2,260	1,620
8	5,260	25,600	16,600	11,800	17,900	8,300	47,100	10,000	15,400	2,910	2,290	3,260
9	7,480	29,600	14,600	11,200	16,100	8,620	38,700	9,630	13,600	2,800	1,420	2,410
10	10,300	26,000	14,100	11,000	15,300	9,080	33,500	8,300	11,900	2,350	948	2,130
11	8,750	20,800	13,300	10,700	14,600	9,500	31,800	8,620	10,800	2,410	2,600	1,700
12	7,420	18,000	12,000	9,920	13,000	12,500	32,400	11,700	9,960	1,780	3,240	1,570
13	7,310	15,800	10,800	9,750	11,600	16,000	31,300	20,000	9,290	2,800	4,020	1,300
14	5,940	13,700	9,800	9,670	10,000	17,200	28,400	22,800	8,140	3,680	4,100	592
15	6,520	13,000	7,580	9,540	11,200	15,800	30,400	19,600	7,860	3,150	4,060	1,800
16	6,010	13,800	6,960	9,960	10,700	14,800	33,100	16,400	7,940	3,080	2,370	1,880
17	5,360	14,300	8,250	11,100	10,400	14,400	32,000	14,500	6,400	2,890	1,220	1,910
18	5,400	14,600	7,080	12,100	8,460	13,200	28,700	14,500	5,230	2,920	3,820	2,040
19	4,660	14,200	7,860	12,500	8,660	12,800	26,600	13,000	5,090	2,080	4,530	2,100
20	3,060	12,500	8,020	13,500	10,200	12,800	26,200	11,500	4,790	582	4,620	1,360
21	3,860	11,200	8,220	14,900	10,700	12,200	26,200	*11,700	2,370	2,550	3,580	1,280
22	5,600	9,630	10,300	14,100	10,000	11,400	*26,100	13,300	3,610	2,290	2,760	2,700
23	4,040	9,120	12,400	14,200	9,840	12,800	23,400	14,600	4,920	2,170	1,640	2,220
24	3,850	8,260	13,000	15,400	9,040	13,800	20,400	12,800	4,440	2,180	845	1,940
25	4,860	8,960	12,500	15,400	9,080	14,200	20,000	12,400	4,060	2,450	2,330	1,870
26	7,070	10,400	12,100	14,400	8,830	14,400	17,600	13,100	3,880	1,820	2,280	2,200
27	7,230	10,600	11,200	16,400	8,700	15,500	16,900	16,200	3,560	457	2,290	1,560
28	7,150	9,590	10,600	20,800	8,620	17,900	17,400	16,300	2,440	2,240	2,340	993
29	8,300	8,750	9,920	21,000	8,620	18,200	22,000	14,000	3,300	2,220	2,300	2,720
30	7,900	6,790	9,840	19,300	-	17,700	23,900	11,800	3,980	2,230	1,260	2,470
31	*7,660	-	10,300	17,300	-	17,300	-	11,900	-	2,190	904	-
Total	173,720	471,580	318,970	417,540	360,250	387,110	632,400	432,750	319,560	74,739	74,643	60,317
Mean	5,604	15,720	10,290	13,470	12,420	12,490	27,750	13,960	10,650	2,411	2,408	2,011
(t)	112	460	340	710	618	474	457	356	304	50.9	161	127

Adjusted for wastage (figures represent net discharge from net drainage area)

Mean	5,492	15,260	9,950	12,760	11,800	12,010	27,290	13,600	10,350	2,360	2,246	1,883
Cfs	1.24	3.45	2.25	2.88	2.67	2.71	6.17	3.07	2.34	0.533	0.508	0.426
In.	1.43	3.85	2.59	3.32	2.88	3.13	6.88	3.54	2.61	0.61	0.59	0.47

	Observed				Adjusted			
Calendar year 1951:	Max	52,900	Min	1,690	Mean	10,060	Mean	9,794
Water year 1951-52:	Max	52,400	Min	456	Mean	10,720	Mean	10,370
							Cfs	2.21
							In.	30.03
								31.90

\* Discharge measurement made on this day.

† Water wasted from 210 sq mi in basins of Sudbury and South Branch Nashua Rivers and Lake Cochituate, equivalent in cubic feet per second. Records furnished by Water Division of Metropolitan District Commission.

Note.--Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.



## Reservoirs in Merrimack River basin

Newfound Lake on Newfound River, 1 2/3 miles north of Bristol, N. H., used for recreation and for storage of water for power, has usable capacity of 1,690,000,000 cu ft. Records furnished by Public Service Co. of New Hampshire.

Franklin Falls Reservoir on Pemigewasset River, 2 miles north of Franklin, N. H., completed in 1942, used for flood control, has usable capacity of 6,640,000,000 cu ft. Records furnished by Corps of Engineers.

Merrymeeting Lake on Merrymeeting River, 2 1/2 miles northeast of Alton, N. H., used for recreation and for storage of water for power, has usable capacity of 368,000,000 cu ft. Records furnished by Public Service Co. of New Hampshire.

Lake Wentworth above Lake Winnepesaukee, at Wolfeboro Falls, N. H., used for recreation and for storage of water for power, has usable capacity of 854,000,000 cu ft. Records furnished by O. P. Berry Co.

Lake Winnepesaukee on Winnepesaukee River (see p. 137).

Edward MacDowell Reservoir on Nubanusit Brook, at West Peterboro, 2 miles northwest of Peterboro, N. H., completed in 1950, used for flood control, has usable capacity of 558,000,000 cu ft. Records furnished by Corps of Engineers.

Blackwater Reservoir on Blackwater River, at Swett's Mills, 1 mile south of Webster, N. H., completed in 1941, used for flood control, has usable capacity of 2,004,000,000 cu ft. Records furnished by Corps of Engineers.

Tower Hill Pond on Maple Falls Brook, 2 1/2 miles north of Auburn, N. H., completed in 1939, used for storage of water for municipal supply and for power, has usable capacity of 182,000,000 cu ft. Records furnished by Manchester Water Works.

Massabesic Lake on Cohas Brook, 2 1/2 miles southeast of Manchester, N. H., used for storage of water for municipal supply, has usable capacity of 724,000,000 cu ft. Records furnished by Manchester Water Works.

Month-end usable contents, in millions of cubic feet, water year October 1951 to September 1952

Date	Newfound Lake	Franklin Falls Reservoir	Merrymeeting Lake*	Lake Wentworth†	Edward MacDowell Reservoir	Blackwater Reservoir	Tower Hill Pond	Massabesic Lake
Sept. 30, 1951.	1,017	135	291	526	14.1	0.5	175.3	508
Oct. 31.....	1,186	153	285	485	19.7	1.7	92.5	502
Nov. 30.....	1,524	153	278	607	17.1	1.4	182.5	748
Dec. 31.....	1,436	160	249	661	23.6	1.7	182.5	796
Jan. 31, 1952.	1,120	160	225	708	35.1	3.0	182.5	910
Feb. 29.....	854	142	190	553	19.5	1.2	182.5	690
Mar. 31.....	833	166	133	442	19.9	4.3	167.4	581
Apr. 30.....	1,724	304	323	905	35.2	7.6	182.5	855
May 31.....	1,712	166	367	1,034	24.1	8.7	182.5	767
June 30.....	1,486	145	355	911	18.6	.8	177.1	536
July 31.....	1,210	133	323	777	19.1	.3	164.7	436
Aug. 31.....	943	140	300	618	8.8	.2	102.1	515
Sept. 30.....	741	135	275	457	11.9	.2	6.0	565

\* To obtain usable contents from figures of contents shown in Water-Supply Paper 1301, subtract 2,306 million cu ft.

† To obtain usable contents from figures of contents shown in Water-Supply Paper 1301, subtract 264 million cu ft.

## Parker River at Byfield, Mass.

Location.--Lat 42°45'10", long. 70°56'46", on left bank 1,400 ft downstream from dam, half a mile south of Byfield, Essex County, 0.7 mile upstream from Wheeler Brook, and 5½ miles southwest of Newburyport.

Drainage area.--21.6 sq mi.

Records available.--October 1945 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 23.46 ft above mean sea level, datum of 1929 (levels by Massachusetts Department of Public Works).

Average discharge.--7 years, 32.2 cfs.

Extremes.--Maximum discharge during year, 196 cfs Mar. 15 (gage height, 3.64 ft); minimum daily, 0.12 cfs July 30.

1945-52: Maximum discharge, 352 cfs Mar. 23, 1948 (gage height, 4.81 ft); minimum daily, that of July 30, 1952.

Remarks.--Records excellent except those for period of backwater from construction fill, which are good. Diurnal fluctuation caused by mill above station. Some regulation at low flow by ponds above station.

Rating table, water year 1951-52, except period of backwater from construction fill (gage height, in feet, and discharge, in cubic feet per second)

1.13	0.12	1.8	15
1.2	.41	2.1	33
1.3	1.25	2.5	67
1.4	2.45	3.0	120
1.5	4.4	3.5	179
1.6	7.3		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.35	33	52	78	87	40	99	118	58	6.6	0.61	10
2	2.45	34	50	*91	86	38	100	104	62	8.6	.47	11
3	2.35	56	47	88	89	38	100	91	64	6.3	.47	11
4	2.2	84	47	b83	105	37	98	82	62	6.0	.54	9.7
5	2.45	*98	*45	b77	135	41	97	75	57	5.4	.52	8.7
6	2.2	92	47	71	141	46	101	69	52	4.6	.98	8.3
7	2.35	96	46	69	130	52	104	66	46	3.9	.54	7.0
8	7.1	114	48	86	b117	56	99	61	41	3.5	.54	8.3
9	7.3	123	49	b62	112	59	91	56	36	3.2	.61	5.7
10	9.7	118	50	58	108	62	84	52	33	3.2	1.09	5.2
11	12	111	48	54	*105	76	78	48	30	3.4	1.45	4.6
12	15	104	47	51	b99	111	73	62	27	3.2	2.1	4.2
13	15	96	45	48	b90	157	67	77	24	3.2	7.7	3.7
14	15	88	b40	46	b80	177	*69	88	22	2.6	7.6	3.2
15	16	84	b58	45	b69	*b174	70	83	20	2.45	12	2.8
16	15	81	36	45	62	b167	72	77	17	2.2	15	2.6
17	15	82	b33	45	57	151	69	72	16	1.7	29	2.2
18	14	80	35	53	45	136	64	68	14	1.8	29	*1.95
19	14	77	b39	57	49	128	59	*63	13	1.6	32	2.4
20	13	71	b38	66	52	129	53	60	12	1.45	31	1.8
21	12	84	50	76	50	131	46	66	10	1.45	27	1.7
22	11	56	75	b75	47	133	42	69	9.0	1.25	31	1.6
23	11	56	88	89	46	136	39	72	*8.0	1.35	28	1.95
24	10	55	83	94	45	138	36	70	7.3	1.35	25	1.95
25	18	53	b75	b89	43	137	36	68	6.6	1.55	22	2.1
26	18	57	71	92	42	133	41	67	6.3	.85	20	2.2
27	23	60	b67	111	42	132	46	66	5.4	.95	17	2.2
28	28	59	b65	125	39	129	65	64	5.4	*.85	15	2.2
29	31	57	60	b117	40	121	101	61	6.3	.45	14	2.1
30	31	54	61	106	-	113	126	58	7.3	.12	12	6.8
31	32	-	70	92	-	106	-	55	-	.47	9.7	-
Total	409.45	2,295	1,643	2,320	2,212	3,284	2,225	2,188	778.6	83.54	393.92	137.15
Mean	13.2	76.5	53.0	74.8	76.3	106	74.2	70.6	26.0	2.69	12.7	4.57
Cfsam	0.811	3.54	2.45	3.46	3.53	4.91	3.44	3.27	1.20	0.125	0.588	0.212
In.	0.70	3.95	2.83	3.99	3.81	5.65	3.83	3.77	1.34	0.14	0.68	0.24
Calendar year 1951: Max	167				Min 2.2	Mean 41.5	Cfsm 1.92	In. 26.10				
Water year 1951-52: Max	177				Min 0.12	Mean 49.1	Cfsm 2.27	In. 30.93				

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from construction fill June 13 to Sept. 30.

## Ipswich River at South Middleton, Mass.

Location.--Lat 42°34'10", long. 71°01'39", on right bank 700 ft downstream from Boston Street Bridge, at South Middleton, Essex County, 1.3 miles downstream from Wills Brook, and 2 miles south of Middleton.

Drainage area.--43.4 sq mi.

Records available.--June 1938 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 45 ft (from topographic map).

Average discharge.--14 years, 63.2 cfs (adjusted for diversions).

Extremes.--Maximum discharge during year, 392 cfs Mar. 15 (gage height, 4.37 ft); minimum, 1.5 cfs July 26, 27.

1938-52: Maximum discharge, 646 cfs Mar. 21, 1948 (gage height, 5.895 ft); minimum, 0.4 cfs Nov. 24, 1941.

Remarks.--Records excellent. Water diverted above station for municipal supplies of Reading, Lynn, and Peabody. Regulation at low flow by mill above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 14

Mar. 15 to Sept. 30

0.2	1.4	0.2	1.5	1.5	105
.3	3.6	.3	3.6	2.0	139
.4	7.1	.4	7.3	3.0	226
.5	12	.5	12	4.0	342
.7	25	.6	28	4.5	410
1.0	59	1.0	59		

Note.--Same as following table above 1.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	*34	88	131	*174	*80	*156	162	131	*16	*1.65	7.4
2	5.0	43	95	140	168	77	152	156	145	13	1.55	*11
3	5.7	85	*76	138	168	75	151	143	146	11	1.55	11
4	6.3	158	76	140	192	74	146	131	139	9.8	1.55	9.8
5	6.3	145	56	153	248	81	142	116	133	9.0	1.95	8.6
6	6.3	*118	61	140	248	100	158	110	125	8.0	11	7.3
7	7.2	146	61	135	234	121	151	104	115	6.8	22	6.2
8	26	220	59	131	222	131	142	96	104	5.8	19	5.5
9	29	220	59	125	204	136	136	88	92	5.1	14	5.5
10	24	204	64	117	193	148	131	82	75	5.0	14	4.8
11	23	185	65	110	184	184	125	79	73	5.6	18	4.0
12	25	171	64	104	177	294	119	103	70	5.5	18	4.2
13	27	156	63	95	166	345	112	114	*64	4.8	31	3.8
14	25	142	64	90	142	351	108	106	57	4.0	33	3.2
15	24	135	54	86	121	363	122	106	50	3.2	26	3.2
16	23	126	59	89	111	345	116	109	42	2.6	22	3.2
17	18	120	35	92	106	298	111	107	35	2.35	32	3.4
18	2.9	112	40	107	116	267	109	105	31	2.35	33	3.5
19	2.2	102	54	125	96	249	105	102	28	2.25	28	4.1
20	15	93	58	129	91	246	101	97	24	2.25	24	5.0
21	16	85	88	148	90	256	95	112	22	2.25	22	5.5
22	16	77	130	157	88	246	89	128	19	2.25	25	5.9
23	15	65	133	183	85	247	86	120	17	2.15	24	5.0
24	15	73	130	199	86	260	77	114	*16	1.95	22	4.6
25	29	90	126	191	85	250	75	112	15	1.75	19	4.0
26	27	98	126	176	85	237	83	127	15	1.55	16	3.8
27	23	109	140	224	86	227	86	126	16	1.9	13	3.5
28	24	100	150	251	86	212	107	117	14	1.85	10	3.2
29	31	96	99	235	81	195	161	114	14	1.75	3.0	3.0
30	32	92	83	227	179	167	137	17	17	1.85	8.4	2.3
31	31	-	*117	202	-	165	-	132	-	1.75	7.5	-
Total	564.8	3,586	2,553	4,571	4,134	6,439	3,619	3,555	1,844	145.40	529.15	156.1
Mean	18.2	120	82.4	147	143	208	121	115	61.5	4.69	17.1	5.20
(†)	126.1	308.0	439.7	111.3	23.8	25.5	26.0	27.6	32.8	45.2	33.0	29.6

Adjusted for diversions

Mean	24.5	135	104	153	144	209	122	116	63.2	6.95	18.7	6.73
Cfs	0.565	3.11	2.40	3.53	3.32	4.82	2.81	2.67	1.46	0.160	0.431	0.155
In.	0.65	3.48	2.77	4.06	3.57	5.55	3.14	3.08	1.62	0.18	0.50	0.17

Observed

Adjusted

Calendar year 1951:	Max 309	Min 1.05	Mean 72.2	Mean 79.5	Cfs 1.83	In. 24.87
Water year 1951-52:	Max 363	Min 1.55	Mean 86.6	Mean 91.8	Cfs 2.12	In. 28.77

\* Discharge measurement made on this day.

† Diversions for municipal supplies of Reading, Lynn, and Peabody, in millions of gallons. Records furnished by municipalities.

## Ipswich River near Ipswich, Mass.

Location.--Lat 42°39'35", long. 70°53'39", on left bank 200 ft downstream from Willowdale Dam,  $1\frac{1}{2}$  miles downstream from Howlett Brook, and 4 miles upstream from Ipswich, Essex County.

Drainage area.--124 sq mi.

Records available.---June 1930 to September 1952. Prior to October 1930, published as "at Willowdale."

Gage.--Water-stage recorder and concrete control. Datum of gage is 20.63 ft above mean sea level, datum of 1929.

Average discharge.---22 years, 191 cfs (adjusted for diversions).

Extremes.---Maximum discharge during year, 1,070 cfs Mar. 14 (gage height, 5.38 ft); minimum, 6.3 cfs July 25.

1930-52: Maximum discharge, 2,610 cfs Mar. 15, 1936 (gage height, 7.70 ft); minimum, 1.4 cfs Aug. 9, 1934.

Remarks.---Records excellent except those for period of no gage-height record, which are fair. Diversions above station for municipal supplies of Reading, Lynn, Peabody, Danvers, Salem, and Beverly.

Revisions.---W 781: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.5	5.5	3.6	126
2.6	8.5	4.0	245
2.8	18	4.5	470
3.0	35	5.0	800
3.3	69	5.5	1,150

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	115	262	360	543	248	494	488	405	65	11	26
2	13	124	256	*395	512	242	464	470	410	58	11	32
3	13	173	*245	395	506	238	459	426	400	51	10	35
4	13	214	238	405	*556	234	448	390	385	45	10	35
5	15	*262	231	370	688	245	442	365	365	41	12	32
6	17	308	238	347	772	273	454	338	352	37	36	28
7	21	370	234	347	785	316	448	318	329	35	55	24
8	58	448	231	342	688	347	442	300	308	31	61	20
9	75	482	228	324	654	370	426	284	288	30	58	20
10	80	518	228	312	628	395	405	270	266	29	58	17
11	77	524	224	292	595	470	375	256	248	30	62	15
12	74	494	220	280	b500	681	356	284	251	31	65	15
13	72	459	214	266	b500	*898	334	304	214	29	85	14
14	69	420	204	256	b450	1,020	*334	324	201	24	98	13
15	66	400	188	248	b400	1,020	334	342	188	21	100	11
16	62	380	182	252	b370	954	334	342	173	19	94	11
17	58	365	179	252	342	877	329	329	162	17	89	12
18	55	347	185	273	245	807	324	312	151	16	85	12
19	49	329	188	304	270	744	312	*304	158	15	80	13
20	58	312	185	334	292	730	296	292	124	14	68	15
21	36	292	252	375	296	744	280	320	111	13	63	15
22	41	273	308	385	292	734	266	360	94	14	70	14
23	41	259	342	442	284	730	256	380	*89	13	74	14
24	40	252	380	482	280	737	245	385	66	13	72	18
25	66	245	385	470	276	737	234	380	61	10	68	19
26	85	248	347	500	270	723	242	385	59	7.5	60	16
27	93	259	338	576	259	688	248	375	62	12	50	15
28	98	262	312	628	248	647	292	365	62	15	38	13
29	104	266	300	628	252	614	360	360	59	14	33	11
30	106	266	308	634	-	569	459	385	62	12	30	11
31	108	-	338	588	-	530	-	390	-	12	28	-
Total	1,757	9,666	7,970	12,062	12,773	18,565	10,712	10,821	6,063	773.5	1,732	546
Mean	56.7	322	257	389	440	599	357	349	202	25.0	55.9	18.2
( $\bar{x}$ )	165.3	344.7	576.5	211.6	59.4	62.7	63.3	64.6	69.1	113.6	116.3	76.0

Adjusted for diversions

Mean	64.9	340	286	400	444	602	360	352	207	30.6	61.7	22.1
Cfs/m	0.523	2.74	2.31	3.23	3.58	4.85	2.90	2.84	1.67	0.247	0.498	0.178
In.	0.60	3.06	2.66	3.72	3.86	5.60	3.24	3.28	1.86	0.28	0.57	0.20

	Observed						Adjusted					
Calendar year 1951:	Max	821	Min	11	Mean	214	Mean	225	Cfs/m	1.81	In.	24.63
Water year 1951-52:	Max	1,020	Min	7.5	Mean	255	Mean	264	Cfs/m	2.13	In.	28.93

\* Discharge measurement made on this day.

† Diversions for municipal supplies of Reading, Lynn, Peabody, Danvers, Salem, and Beverly, in millions of gallons. Records furnished by the various municipalities.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Aug. 19 to Sept. 18; discharge estimated on basis of weather records, recorded range in stage, and records for station at South Middleton.

MYSTIC RIVER BASIN

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Aberjona River at Winchester, Mass.

Location.--Lat 42°26'50", long. 71°08'22", on left bank at Winchester, Middlesex County, 0.5 mile upstream from head of Mystic Lakes.

Drainage area.--23.3 sq mi (excludes 1.4 sq mi drained by Winchester Reservoirs).

Records available.--April 1939 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is at mean sea level, datum of 1929.

Average discharge.--13 years, 24.0 cfs.

Extremes.--Maximum discharge during year, 221 cfs Mar. 12 (gage height, 12.06 ft); minimum, 0.7 cfs Sept. 30; minimum daily, 0.75 cfs July 30, 31, Sept. 30.

1939-52: Maximum discharge, 358 cfs Mar. 20, 1948 (gage height, 12.44 ft); maximum gage height, 13.05 ft Mar. 1, 1945 (backwater from construction); no flow for part of Oct. 10, 12, 1950, caused by pumpage from gage pool; minimum daily discharge, 0.25 cfs Oct. 10, 1950.

Remarks.--Records good. Flow affected by diversions for industrial use and for municipal supply of Woburn and Winchester, and by wastage and leakage from Winchester Reservoirs. Occasional regulation by mills above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

10.25	0.7	10.9	22
10.3	1.1	11.2	47
10.4	2.4	11.5	89
10.5	4.6	12.0	203
10.7	11		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.35		37	94	62	35	56	62	72	8.2	0.85	5.1
2	1.0	34	38	87	69	33	62	52	86	7.0	.9	7.5
3	.9	150	34	79	74	31	65	45	72	5.2	1.05	5.1
4	.95	144	31	68	101	31	56	38	55	4.4	.95	4.7
5	1.0	103	29	65	126	66	47	36	44	3.9	9.0	3.9
6	.95	72	37	62	111	83	62	37	38	3.8	11	3.1
7	3.4	111	31	58	91	96	61	34	34	2.9	8.4	2.1
8	*28	149	38	52	76	89	55	32	30	2.5	5.2	3.3
9	14	120	45	47	75	79	49	30	27	2.4	6.0	3.1
10	18	87	42	44	71	73	46	27	26	2.7	8.4	2.4
11	14	71	41	41	72	121	42	27	24	5.9	9.8	1.65
12	14	62	36	*38	67	200	35	67	21	2.8	8.4	1.15
13	10	55	33	38	51	203	34	66	20	2.5	18	1.4
14	11	59	*29	38	50	181	49	55	18	2.2	18	1.15
15	6.2	70	31	40	43	154	53	47	18	2.0	15	*1.45
16	6.5	63	26	49	40	133	*49	37	16	1.65	11	1.6
17	5.3	63	26	51	44	113	42	35	14	6.1	19	1.05
18	4.3	56	42	78	45	103	38	32	14	6.6	14	.95
19	4.3	*47	56	82	44	100	34	32	13	1.05	11	*4.4
20	3.6	42	51	92	46	122	32	35	2.6	.95	8.2	3.5
21	4.5	38	104	93	47	126	29	61	7.3	.9	5.6	1.0
22	3.9	34	115	74	45	115	28	83	7.0	.85	13	1.05
23	2.4	41	98	111	44	111	25	61	*6.6	.8	8.0	1.7
24	4.1	38	75	109	41	120	23	49	6.2	.85	6.4	1.25
25	50	51	62	84	40	111	21	49	6.6	.8	6.6	.95
26	24	61	60	86	38	100	29	58	8.1	.8	5.3	.95
27	21	60	53	102	38	89	37	60	15	1.3	3.8	.8
28	21	42	46	111	36	80	82	38	9.2	.8	3.6	.8
29	22	46	42	103	38	73	109	51	11	.8	2.9	.8
30	24	40	56	82	-	69	87	64	10	*.75	2.3	.75
31	19	-	89	67	-	65	-	66	-	.75	2.4	-
Total	324.65	2,022	1,533	2,225	1,725	3,105	1,437	1,466	731.6	84.15	244.05	68.65
Mean	10.5	67.4	49.5	71.8	59.5	100	47.9	47.3	24.4	2.71	7.67	2.29
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 192 Min 0.85 Mean 36.8 Cfsm - In. -  
 Water year 1951-52: Max 203 Min 0.75 Mean 40.9 Cfsm - In. -

Peak discharge (base, 170 cfs)--Mar. 12 (8 to 11 p.m.) 221 cfs (12.06 ft).

\* Discharge measurement made on this day.

## Charles River at Charles River Village, Mass.

Location.--Lat 42°15'23", long. 71°15'42", on right bank 0.25 mile downstream from highway bridge at Charles River Village, Norfolk County, 0.8 mile downstream from Noanet Brook, and 1.3 miles northeast of Dover.

Drainage area.--184 sq mi.

Records available.--October 1937 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 89.76 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 277 cfs (adjusted for diversions).

Extremes.--Maximum discharge during year, 1,310 cfs Mar. 15 (gage height, 4.77 ft); minimum, 26 cfs Sept. 16, 17.

1937-52: Maximum discharge, 3,110 cfs July 27, 1938 (gage height, 9.00 ft); minimum, 1.9 cfs Oct. 14, 1941 (gage height, 0.25 ft).

Maximum discharge known, 3,170 cfs in March 1936, by computation of flow over dam at site a quarter of a mile above station.

Remarks.--Records excellent except those for periods of ice effect, which are good. Diversion above station for municipal supply of Wellesley and Needham, and at times since 1951 from Sudbury River basin to Charles River.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.6	24	2.0	417
.7	40	4.0	1,040
.8	60	4.8	1,320
1.0	121		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*61	*208	376	643	*751	340	*598	*643	297	101	*35	34
2	60	260	360	646	718	319	565	679	319	*98	34	*58
3	63	459	*342	*649	682	324	535	670	345	95	38	48
4	66	529	321	628	685	308	505	634	374	88	38	42
5	66	577	308	b575	724	355	493	583	412	80	70	40
6	63	631	329	571	733	440	505	532	414	71	89	36
7	72	750	334	b530	745	514	487	481	395	63	66	33
8	118	817	342	b465	733	553	481	432	360	60	55	33
9	114	802	355	511	712	589	478	390	324	56	58	31
10	114	802	366	496	673	625	472	350	280	50	82	30
11	114	805	366	b450	652	718	455	319	280	56	101	30
12	121	790	360	426	625	926	426	406	224	54	101	30
13	124	754	345	395	b540	1,090	404	414	204	54	104	28
14	121	721	319	374	b550	1,250	412	429	187	52	104	27
15	118	691	b290	360	b505	1,310	406	440	170	52	99	27
16	108	637	b270	379	484	1,280	404	440	157	46	91	26
17	108	628	b280	390	460	1,210	404	423	170	48	98	36
18	104	595	289	458	b385	1,120	398	412	194	48	85	38
19	101	580	371	490	b385	1,020	387	387	190	40	77	42
20	91	565	366	544	b430	972	368	363	174	38	66	43
21	91	558	497	589	440	912	340	385	157	40	60	54
22	91	508	589	b560	432	*866	316	382	144	38	61	63
23	91	481	664	679	423	846	294	385	134	38	54	42
24	91	463	b740	685	406	*846	271	379	124	36	48	47
25	161	429	b785	b655	390	835	266	376	118	38	46	51
26	177	437	b805	715	376	823	286	387	111	36	44	42
27	180	420	b775	763	363	802	321	376	101	34	44	36
28	180	414	b730	796	342	769	437	363	88	31	40	33
29	194	404	679	823	350	724	523	347	91	31	38	33
30	190	390	634	b790	-	682	586	329	91	33	31	33
31	184	-	643	b795	-	640	-	303	-	36	30	-
Total	3,537	17,065	14,230	17,830	15,694	24,008	12,823	13,439	6,609	1,641	1,987	1,166
Mean	114	569	459	575	541	774	427	434	220	52.9	64.1	38.9
(t)	-224.1	-54.7	+75.3	+76.8	+72.0	+75.8	+76.6	+83.5	+86.7	-53.2	+30.2	+85.0

Adjusted for diversion

Mean	103	566	463	579	545	778	431	438	225	50.3	65.6	43.3
Cfs	0.580	3.08	2.52	3.15	2.96	4.23	2.34	2.38	1.22	0.273	0.357	0.235
In.	0.64	3.43	2.90	3.63	3.19	4.88	2.62	2.74	1.36	0.32	0.41	0.26

	Observed					Adjusted						
Calendar year 1951:	Max	972	Min	40	Mean	338	Mean	338	Cfs	1.84	In.	24.93
Water year 1951-52:	Max	1,310	Min	26	Mean	355	Mean	357	Cfs	1.94	In.	26.38

\* Discharge measurement made on this day.

† Diversions for municipal supply of Wellesley and Needham and diversion from Sudbury River basin to Charles River, in millions of gallons. Records furnished by municipalities and water division of Metropolitan District Commission.

b Stage-discharge relation affected by ice.

## Mother Brook at Dedham, Mass.

Location.--Lat 42°15'19", long. 71°09'58", on right bank at upstream side of East Street Bridge, at Dedham, Norfolk County, 0.4 mile downstream from point of diversion from Charles River.

Records available.--October 1931 to September 1952.

Gage.--Float gage read twice daily. Datum of gage is 0.03 ft below mean sea level, datum of 1929. Prior to Dec. 9, 1931, water-stage recorder at same site and datum.

Average discharge.--21 years, 82.8 cfs.

Extremes.--Maximum discharge during year, 374 cfs Mar. 17 (gage height, 89.33 ft, from graph based on gage readings); minimum, 0.1 cfs Sept. 14-17. 1931-52: Maximum discharge, 909 cfs July 28, 29, 1938 (gage height, 91.84 ft, from graph based on gage readings); no flow Sept. 12 to Nov. 1, 1941, several days August to October 1943, August, September 1944, July, August, October 1949, and August, September, October 1950.

Remarks.--Records good. Mother Brook is a diversion from Charles River to Neponset River through Dedham and Hyde Park.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Aug. 21 to Sept. 30)

84.46	0	85.1	4.3	87.0	107
84.6	.2	85.2	6.3	88.0	195
84.7	.4	85.4	11	89.0	325
84.8	.9	85.7	22	89.3	370
84.9	1.7	86.0	35		
85.0	2.8	86.5	67		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.0	47	124	205	234	108	203	162	99	24	1.9	0.5
2	7.2	*61	120	203	230	103	193	173	102	23	2.0	1.7
3	7.2	87	*113	*203	223	100	183	182	101	22	2.6	1.9
4	7.7	126	108	197	220	97	173	186	103	20	2.1	*2.3
5	8.1	143	104	190	224	111	166	181	110	19	4.2	2.1
6	7.9	160	102	183	226	127	166	174	116	17	15	1.5
7	8.6	178	101	175	226	145	162	187	120	14	18	1.0
8	*18	208	102	155	226	155	155	157	117	12	14	.6
9	21	228	105	145	*226	166	152	144	113	9.1	11	.5
10	21	235	107	150	218	175	147	129	105	7.4	13	.4
11	22	238	107	150	211	190	145	118	104	7.4	20	.3
12	24	237	107	142	210	240	140	121	94	7.7	19	.2
13	24	235	105	133	195	274	133	125	84	7.2	20	.2
14	24	232	99	127	180	314	134	128	74	6.5	20	.1
15	23	229	96	122	170	*349	132	129	66	6.5	18	.1
16	22	222	88	123	162	370	*129	131	56	6.1	16	.1
17	20	216	81	121	158	*370	125	129	56	5.1	19	.1
18	18	205	82	133	149	355	123	128	58	4.9	16	.2
19	17	195	100	141	136	357	121	125	57	4.9	13	.4
20	16	187	105	154	134	322	117	121	55	4.0	11	1.1
21	15	178	121	166	136	306	112	*122	50	3.4	8.4	1.9
22	13	171	151	165	136	290	104	123	46	3.2	7.9	2.1
23	13	165	167	181	134	282	98	120	42	2.9	6.3	2.6
24	13	161	183	194	131	276	89	117	38	2.9	4.9	2.0
25	26	153	206	190	127	269	84	117	*34	2.6	3.7	1.4
26	32	151	218	203	123	262	86	120	31	2.4	2.6	.9
27	36	148	220	219	119	255	90	120	27	2.1	1.7	.7
28	39	137	220	230	114	248	108	117	25	2.2	1.3	.5
29	43	133	211	242	112	237	129	113	23	1.9	1.1	*.6
30	42	128	210	235	-	229	147	108	24	1.6	.8	.7
31	41	-	208	235	-	216	-	103	-	1.7	.8	-
Total	636.7	5,194	4,171	5,412	5,090	7,278	4,046	4,190	2,130	254.7	295.1	28.7
Mean	20.5	173	135	175	176	235	135	135	71.0	8.22	9.52	0.96
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 246 Min 2.3 Mean 94.2 Cfsm - In. -  
Water year 1951-52: Max 370 Min 0.1 Mean 106 Cfsm - In. -

\* Discharge measurement made on this day.

## Charles River at Waltham, Mass.

Location.--Lat 42°22'20", long. 71°14'03", on right bank 800 ft downstream from Moody Street Bridge in Waltham, Middlesex County, and a third of a mile upstream from Beaver Brook.

Drainage area.--227 sq mi, excludes 23.6 sq mi drained by Stony Brook from which flow is diverted for municipal supply of Cambridge.

Records available.--October 1903 to October 1909 (figures of average weekly discharge, equivalent to records of unadjusted discharge at present site), August 1931 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 20.02 ft above mean sea level, datum of 1929. Prior to July 9, 1904, at dam 700 ft upstream and from July 10, 1904, to Oct. 2, 1909, at dam 0.7 mile downstream at different datums; discharge computed from flow over dam and through wheels and gates of Boston Manufacturing Co. and Waltham Bleachery, respectively.

Average discharge.--21 years (1931-52), 355 cfs (adjusted for diversions, wastage, and leakage).

Extremes.--Maximum discharge during year, 1,250 cfs Mar. 17 (gage height, 3.49 ft); minimum, 3.6 cfs Sept. 3; minimum daily, 13 cfs July 17.

1931-52: Maximum discharge, 2,540 cfs Mar. 19, 1936 (gage height, 4.79 ft); minimum, 0.1 cfs Oct. 1, 12, 1943; minimum daily, 0.2 cfs Oct. 4, 1943.

Remarks.--Records excellent except those for periods of backwater from scum, debris, or aquatic vegetation, which are good. Flow affected by wastage from Stony Brook Reservoir, wastage and leakage from Norumbega Reservoir, diversions from Lake Cochituate and at times since 1951 from Sudbury River basin to Charles River, diversion to Mother Brook, and diversions for municipal supply of Wellesley, Needham, Dedham, Brookline, and Newton, all above station. Low flow completely regulated by Boston Edison Co. powerplant above station.

Revisions (water years).--W 781: 1933(M). W 851: Drainage area. W 971: 1942.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.5	7.2	1.5	185
.6	15	2.0	375
.8	36	3.0	920
1.1	85	5.3	1,120

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	179	345	626	716	345	580	500	324	86	29	41
2	71	205	321	620	704	332	590	515	362	115	29	99
3	61	469	461	626	692	316	570	525	362	97	30	39
4	63	520	388	610	710	308	540	525	371	76	33	29
5	62	565	354	600	722	371	530	515	375	93	64	53
6	62	570	362	585	746	430	540	505	375	89	119	27
7	63	620	357	555	722	480	525	480	371	174	298	31
8	*141	728	349	525	710	505	505	445	358	57	44	46
9	93	740	349	510	680	515	490	416	358	49	53	20
10	96	710	358	485	662	530	465	388	349	89	70	27
11	98	698	358	470	662	556	455	371	362	78	126	30
12	121	680	358	*455	632	448	450	406	362	58	77	26
13	106	692	354	435	530	914	435	430	341	50	101	29
14	62	686	*338	398	530	1,020	455	420	234	69	67	27
15	119	710	336	384	545	1,020	445	411	215	75	64	*27
16	139	674	300	398	500	1,040	420	398	208	63	60	31
17	86	656	284	402	490	*1,110	402	380	218	13	118	29
18	68	620	254	420	449	1,030	324	375	222	69	106	30
19	119	*595	354	465	485	965	332	380	211	19	61	45
20	71	565	380	505	440	956	518	371	208	27	64	47
21	63	495	450	540	416	914	349	371	149	37	63	44
22	109	490	515	555	425	884	345	358	139	31	56	86
23	75	510	530	662	420	860	324	354	152	32	44	50
24	81	495	580	650	406	860	304	345	147	35	49	31
25	143	485	580	626	398	836	284	341	*139	32	47	37
26	137	500	610	656	388	812	292	349	139	32	61	63
27	77	460	615	710	380	770	300	349	137	35	32	29
28	124	455	615	758	371	740	371	345	88	32	37	32
29	164	440	610	782	349	716	455	332	70	27	43	98
30	188	402	605	758	-	680	490	336	160	*25	36	50
31	176	-	638	734	-	650	-	320	-	27	36	-
Total	3,110	16,614	13,308	17,505	15,910	22,413	12,885	12,556	7,506	1,785	2,117	1,253
Mean	100	554	429	565	549	723	430	405	250	57.6	68.3	41.8
(†)	444.9	3,135.1	2,510.0	3,459.2	3,215.9	4,629.2	2,496.5	2,697.6	1,238.9	368.8	475.6	342.1

Adjusted for diversions, wastage, and leakage

Mean	.123	716	555	737	720	954	558	540	314	76.0	91.9	59.4
Cfs/m	0.542	3.15	2.44	3.25	3.17	4.20	2.46	2.38	1.38	0.335	0.405	0.262
In.	0.62	3.52	2.82	3.74	3.42	4.85	2.74	2.74	1.54	0.39	0.47	0.29

Observed

Adjusted

Calendar year 1951:	Max	828	Min	15	Mean	314	Mean	405	Cfs/m	1.78	In.	24.21
Water year 1951-52:	Max	1,110	Min	13	Mean	347	Mean	453	Cfs/m	2.00	In.	27.14

\* Discharge measurement made on this day.

† Diversions to Mother Brook and for municipal supply of Wellesley, Needham, Dedham, Brookline, and Newton, wastage from Stony Brook Reservoir, wastage and leakage from Norumbega Reservoir, and diversion from Lake Cochituate and Sudbury River basin to Charles River, in millions of gallons. Records furnished by Water Division of Metropolitan District Commission and by municipalities.

Note.--Backwater from scum, debris, or aquatic vegetation Oct. 1 to Nov. 17, Dec. 1-14, Mar 19 to Apr. 24, May 20 to Sept. 30.



## Neponset River at Norwood, Mass.

Location.--Lat 42°10'39", long. 71°12'05", on left bank 200 ft upstream from Pleasant Street Bridge, 200 ft downstream from New York, New Haven & Hartford Railroad bridge, 0.45 mile downstream from Hawes Brook, and 0.5 mile south of Norwood, Norfolk County.

Drainage area.--35.2 sq mi.

Records available.--November 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 44.04 ft above mean sea level, unadjusted.

Average discharge.--13 years, 43.6 cfs.

Extremes.--Maximum discharge during year, 336 cfs Mar. 12 (gage height, 10.08 ft); minimum daily, 3.7 cfs Aug. 3.

1939-52: Maximum discharge, 414 cfs Dec. 7, 1945 (gage height, 10.38 ft); minimum daily, 2.3 cfs Oct. 23, 1949.

Maximum stage known, 11.05 ft July 24, 1938, from floodmarks.

Remarks.--Records good. Flow regulated by mills and reservoirs above station. Several diversions above station for municipal and industrial use.

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)  
(Backwater from industrial waste Nov. 2, 6, Nov. 10 to  
Dec. 20, Dec. 25 to Jan. 16)

6.6	2.3	7.5	52
6.7	4.8	8.0	95
6.8	8.5	9.0	179
7.0	18	10.0	318

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*11	42	52	106	94	75	91	95	40	16	10	8.6
2	12	*48	51	102	*104	72	93	82	12	12	6.7	16
3	13	134	*49	103	108	68	88	59	59	12	3.7	16
4	12	148	47	89	118	67	87	66	52	12	9.7	13
5	22	118	45	90	140	107	96	62	48	9.3	12	10
6	23	90	54	92	136	130	119	53	48	4.5	12	9.4
7	17	129	63	*85	123	136	111	51	33	10	14	5.8
8	37	159	62	73	111	125	94	48	26	8.5	8.7	10
9	25	142	61	65	106	117	86	46	35	8.1	7.7	9.4
10	26	112	33	60	101	*115	71	46	27	8.1	25	8.9
11	27	91	57	58	108	175	64	46	33	8.1	26	8.9
12	29	76	52	56	110	*291	47	85	28	6.9	14	8.1
13	28	66	*48	54	96	*258	54	92	28	4.2	16	7.1
14	22	57	45	*84	87	*211	*68	76	20	6.0	9.4	5.8
15	16	56	47	56	78	*187	71	*66	21	7.3	9.5	7.9
16	17	92	48	70	73	152	70	59	19	6.5	7.3	9.8
17	16	113	46	75	81	140	62	54	32	7.3	15	8.9
18	13	102	62	102	109	134	58	52	40	7.3	15	9.4
19	13	86	102	108	97	128	54	52	35	5.7	17	*9.4
20	11	73	89	104	98	140	51	58	26	4.3	12	6.6
21	12	64	168	114	95	140	48	71	18	6.9	9.8	5.4
22	9.4	58	195	100	91	132	46	70	20	7.7	10	8.7
23	14	57	152	141	88	129	39	62	18	7.7	7.7	12
24	14	62	127	138	84	147	41	58	17	7.7	5.9	11
25	27	54	106	115	80	140	36	55	16	7.9	6.2	10
26	27	69	105	120	77	128	51	66	*12	5.6	8.8	9.0
27	37	76	94	136	78	119	65	65	12	4.2	9.8	7.7
28	36	65	82	145	75	113	128	48	12	6.4	9.3	6.4
29	33	59	72	140	75	107	137	47	7.6	8.1	8.1	7.0
30	40	54	82	118	-	97	117	46	20	*8.5	8.6	8.1
31	30	-	109	102	-	94	-	47	-	8.5	6.2	-
Total	669.4	2,552	2,435	2,971	2,821	4,174	2,243	1,879	864.6	243.3	341.1	274.3
Mean	21.6	85.1	78.5	95.8	97.3	135	74.8	60.6	28.8	7.85	11.0	9.14
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1951: Max 234 Min 6.8 Mean 56.0 Cfsm - In. -  
Water year 1951-52: Max 291 Min 3.7 Mean 58.7 Cfsm - In. -

\* Discharge measurement made on this day.

## Adamsville Brook at Adamsville, R. I.

Location.--Lat 41°33'30", long. 71°07'47", on right bank 0.2 mile upstream from milldam at Adamsville, Newport County, and 0.7 mile upstream from mouth.

Drainage area.--8.6 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (from topographic map).

Average discharge.--12 years, 12.5 cfs.

Extremes.--Maximum discharge during year, 157 cfs Mar. 12 (gage height, 4.89 ft); minimum, 0.05 cfs July 24.

1940-52: Maximum discharge, 241 cfs Aug. 8, 1946 (gage height, 5.72 ft); minimum, 0.03 cfs Sept. 23, 24, Oct. 3, 4, 1950.

Remarks.--Records good.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Backwater from leaves Oct. 18, 19; stage-discharge relation affected by ice Dec. 16)

Oct. 1 to Aug. 6				Aug. 7 to Sept. 30	
2.99	0.05	3.5	12	3.05	0.20
3.10	1.55	3.7	23	3.1	.47
3.2	1.85	4.0	48	3.2	1.85
3.3	4.3	4.5	102		
3.4	7.6	5.0	170		

Note.--Same as preceding table above 3.2 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.08	3.3	8.0	18	19	17	15	32	9.4	1.13	0.09	0.74
2	*.07	4.8	7.2	17	20	16	14	21	16	1.00	.12	.86
3	.10	13	6.7	21	21	15	14	16	17	.94	.14	.74
4	.10	16	6.4	25	25	15	13	14	15	.82	.09	.64
5	.10	*16	*6.2	28	37	34	14	12	12	.82	.10	.55
6	.10	13	8.8	36	39	59	16	12	9.4	.57	6.8	.51
7	.12	14	9.4	31	29	85	15	11	8.0	.48	16	.37
8	.20	21	9.4	22	23	71	15	10	6.7	.58	12	.37
9	.20	18	9.6	17	19	57	13	9.6	6.7	.30	10	.35
10	.24	15	9.0	15	18	48	12	9.2	6.6	.20	11	.28
11	.40	12	8.2	14	19	67	12	9.0	5.9	.20	13	.26
12	.82	9.6	7.8	14	23	144	11	23	5.1	.16	11	.24
13	.57	8.2	7.1	13	20	89	10	32	4.4	.15	13	.28
14	.38	7.4	6.2	13	17	55	14	28	4.2	.13	10	.22
15	.32	9.8	8.8	14	14	39	26	19	3.9	.12	7.2	.22
16	.30	9.8	9.3	16	12	31	31	15	3.4	.12	5.4	.51
17	.30	11	7.6	15	19	26	24	12	3.5	.10	5.2	*.51
18	.30	10	9.6	22	44	*23	18	12	3.8	.09	4.2	.51
19	.30	8.8	22	25	48	21	15	11	3.2	.09	3.5	.51
20	.30	7.8	20	25	57	31	13	12	2.8	.09	2.8	.65
21	.30	6.9	53	25	43	35	12	31	2.4	.09	2.2	.55
22	.30	6.2	76	21	30	29	11	34	2.2	.08	3.5	.55
23	.30	6.0	50	26	25	25	10	24	1.75	.07	3.1	.47
24	.38	6.6	31	29	21	28	9.6	17	1.6	.06	2.6	.40
25	.84	6.9	21	23	19	41	9.6	14	1.25	.08	2.05	.40
26	.71	10	22	27	18	39	12	23	1.13	.06	1.75	.34
27	.82	12	19	56	16	29	13	26	*.94	.07	1.5	.28
28	1.00	11	16	81	16	23	35	21	.88	.08	1.35	.25
29	1.45	9.8	14	55	17	19	60	15	1.00	*.08	1.16	.24
30	1.25	8.8	15	39	-	17	50	12	1.20	.07	1.00	.24
31	1.13	-	*18	23	-	15	-	10	-	.08	.80	-
Total	13.78	312.7	522.3	786	728	1,241	537.2	546.8	161.35	8.70	152.65	13.06
Mean	0.445	10.4	16.8	25.4	25.1	40.0	17.9	17.6	5.38	0.281	4.92	0.435
Cfsm	0.052	1.21	1.95	2.95	2.92	4.65	2.08	2.05	0.626	0.033	0.572	0.051
In.	0.06	1.35	2.26	3.40	3.15	5.37	2.32	2.36	0.70	0.04	0.66	0.06

Calendar year 1951: Max 83 Min 0.07 Mean 11.0 Cfsm 1.28 In. 17.39  
Water year 1951-52: Max 144 Min 0.06 Mean 13.7 Cfsm 1.59 In. 21.73

Peak discharge (base, 120 cfs).--Mar. 12 (7 to 8 a.m.) 157 cfs (4.89 ft).

\* Discharge measurement made on this day.

## Taunton River at State Farm, Mass.

Location.--Lat 41°56'05", long. 70°57'18", on right bank at State Farm, Plymouth County, 1 mile upstream from Saw Mill Brook and 3½ miles northwest of Middleboro.

Drainage area.--260 sq mi.

Records available.--October 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 9.61 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1931, inverted staff gage at site 40 ft downstream with zero of gage at 10.02 ft on present gage. Oct. 1, 1931, to June 8, 1934, staff gage and June 9, 1934, to Oct. 12, 1939, water-stage recorder at site 40 ft downstream at present datum.

Average discharge.--23 years, 445 cfs (adjusted for diversions).

Extremes.--Maximum discharge during year, 2,460 cfs Mar. 13 (gage height, 9.50 ft); minimum, 31 cfs Sept. 7, 8; minimum daily, 32 cfs Sept. 7.  
1929-52: Maximum discharge, 3,080 cfs Dec. 8, 1945 (gage height, 11.57 ft); minimum, 8 cfs Sept. 10, 1944; minimum daily, 9 cfs Sept. 9-12, 1944.

Remarks.--Records excellent except those for periods of backwater from debris or aquatic vegetation, which are good. Water diverted above station from Nemasket River for municipal supply of Taunton and New Bedford; water diverted from Silver Lake by pumpage into Taunton River basin above station for municipal supply of Brockton and several towns. Flow regulated by reservoirs and small powerplants above station.

Revisions (water years).--W 756: Drainage area. W 781: 1934. W 801: 1933(M). W 1051: 1933. W 1201: 1931.

Rating table, water year 1951-52, except periods of backwater from debris or aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)

2.9	26	4.0	245
3.1	42	5.0	715
3.3	64	7.0	1,640
3.6	116	9.5	2,460

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	169	346	565	710	732	754	985	380	197	*47	70
2	83	309	321	560	682	680	732	830	486	135	43	101
3	54	534	300	565	693	682	710	715	520	*112	83	198
4	58	825	280	555	770	649	682	600	462	112	86	101
5	68	*726	264	530	1,120	880	616	545	434	108	84	41
6	64	622	296	610	1,230	1,450	654	471	407	103	226	34
7	64	595	325	595	1,150	1,780	660	452	371	85	280	32
8	106	908	325	485	1,040	1,900	632	434	333	80	261	33
9	*106	935	317	500	*950	1,830	600	411	313	57	208	45
10	90	754	329	457	886	1,710	570	380	292	54	212	49
11	86	638	309	420	842	1,740	545	354	280	52	376	52
12	97	565	284	393	935	*2,210	520	561	268	52	295	51
13	101	491	257	371	748	2,440	495	792	249	50	292	52
14	97	434	230	*367	765	2,370	510	698	223	47	284	49
15	97	476	230	380	675	*2,150	616	632	190	49	230	51
16	95	491	230	530	580	1,870	698	570	201	52	180	84
17	92	580	223	580	818	1,620	660	495	194	65	170	*95
18	86	585	229	654	985	1,420	605	452	230	60	176	90
19	81	530	610	781	1,080	1,260	565	439	238	51	145	80
20	78	476	600	742	1,180	1,230	525	*457	190	49	124	81
21	67	425	808	820	1,230	1,260	486	570	158	51	116	74
22	68	371	1,230	742	1,130	1,210	452	720	145	58	124	72
23	74	350	1,180	864	1,000	1,180	429	682	145	50	108	71
24	74	350	955	1,030	918	*1,280	*380	580	145	48	97	81
25	103	389	776	886	869	1,400	389	515	139	45	93	67
26	137	420	698	792	836	1,380	448	590	137	45	80	65
27	134	491	649	970	781	1,280	486	627	142	46	80	63
28	124	434	540	1,020	695	1,140	780	580	151	46	74	56
29	142	393	457	1,120	748	990	1,140	530	151	44	74	57
30	142	*371	420	1,010	-	902	1,140	476	254	54	71	48
31	132	-	520	830	-	820	-	418	-	81	67	-
Total	2,853	15,637	14,538	20,724	25,844	43,445	18,459	17,559	7,828	2,142	4,787	2,041
Mean	91.4	521	469	669	891	1,401	615	566	261	69.1	154	68.0
(†)	537.5	475.9	449.3	483.7	425.7	454.4	454.3	478.9	506.6	564.0	588.3	550.5

Adjusted for diversions

Mean	118	546	491	693	914	1,424	639	590	287	97.3	184	96.4
Cfs/m	0.454	2.10	1.89	2.67	3.52	5.48	2.46	2.27	1.10	0.374	0.708	0.371
In.	0.52	2.34	2.18	3.07	3.79	6.31	2.74	2.62	1.23	0.43	0.81	0.41

	Observed				Adjusted			
Calendar year 1951:	Max	1,540	Min	41	Mean	444	Cfs/m	1.71
Water year 1951-52:	Max	2,440	Min	32	Mean	480	Cfs/m	1.95
							In.	23.19
								28.45

\* Discharge measurement made on this day.

† Diversions from Nemasket River for municipal supply of Taunton and New Bedford, and from Silver Lake into Taunton River basin for municipal supply of Brockton and several towns, in millions of gallons. Records furnished by various municipalities.

Note.--Backwater from debris or aquatic vegetation Oct. 1 to Feb. 7, July 10 to Sept. 30.

## Wading River near Norton, Mass.

Location.--Lat 41°56'51", long. 71°10'38", on left bank 200 ft downstream from bridge on State Highway 140, 0.9 mile upstream from confluence with Rumford River, and 1½ miles southeast of Norton, Bristol County.

Drainage area.--42.4 sq mi.

Gage.--Water-stage recorder. Datum of gage is 49.63 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1930, staff gage at same site at datum 0.62 ft higher. Oct. 1, 1930, to May 4, 1933, staff gage at present site and datum.

Records available.--June 1925 to September 1952.

Average discharge.--27 years, 69.1 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 454 cfs Mar. 12 (gage height, 8.32 ft); minimum, 2.7 cfs Aug. 4; minimum daily, 3.5 cfs Aug. 4.  
1925-52: Maximum discharge, 1,030 cfs Mar. 12, 13, 1936 (gage height, 10.01 ft), from rating curve extended above 500 cfs; minimum, 0.3 cfs Sept. 10, 1926.

Remarks.--Records excellent except those for periods of no gage-height record or backwater from waste or grass on control, which are good. Flow regulated by powerplants and ponds above station. Occasional diversion above station for municipal supply of Attleboro.

Revisions (water years).--W 871: 1938.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*6.8	*56	99	137	*132	*97	*116	*137	55	*23	*5.5	7.4
2	7.2	72	92	135	131	84	108	128	75	23	4.9	9.6
3	7.2	113	90	134	134	91	107	107	100	22	4.2	12
4	7.2	148	78	125	153	85	100	95	85	17	3.5	12
5	7.7	149	92	125	215	115	101	86	75	16	6.9	12
6	7.5	129	101	124	221	176	111	86	65	15	9.1	11
7	7.2	138	99	128	189	212	118	83	50	16	12	9.3
8	12	180	98	106	158	204	106	75	35	16	18	9.3
9	15	192	96	106	162	189	93	72	55	17	15	9.6
10	17	176	101	105	136	178	86	59	51	12	28	9.1
11	16	151	90	91	140	224	82	61	48	12	43	8.6
12	26	142	87	86	140	*406	77	107	46	12	27	8.6
13	18	127	84	83	108	392	65	118	38	12	26	8.1
14	10	118	75	83	113	316	77	111	36	13	29	7.1
15	15	137	77	84	106	282	79	102	34	13	19	7.4
16	15	144	83	96	93	246	88	88	34	13	16	9.3
17	15	167	73	95	108	208	78	85	33	14	45	8.3
18	14	163	83	119	138	195	78	83	36	12	77	8.1
19	14	153	116	137	124	184	62	70	34	11	34	8.3
20	13	139	135	139	153	194	73	70	36	8.6	26	8.6
21	11	124	232	144	146	192	61	90	31	9.6	22	7.9
22	12	109	304	130	151	177	82	120	27	11	25	8.3
23	12	108	259	163	127	169	55	105	27	11	18	9.6
24	12	111	213	180	113	196	51	80	27	9.6	13	9.1
25	24	108	180	148	109	201	52	60	25	9.1	14	9.1
26	33	123	174	160	105	188	68	80	24	8.3	14	8.8
27	36	130	153	178	104	162	71	105	22	7.1	12	8.1
28	37	119	140	194	90	148	135	95	18	6.7	11	6.7
29	39	112	127	201	102	135	189	*85	17	*6.2	*11	6.9
30	49	*105	127	146	-	138	178	73	23	6.2	9.6	8.1
31	40	-	*158	145	-	114	-	70	-	*6.0	7.6	-
Total	546.8	3,943	3,876	4,025	3,881	5,886	2,723	2,786	1,262	388.4	606.3	266.3
Mean	17.6	131	125	130	134	190	90.8	89.9	42.1	12.5	19.6	8.6
(+)	0	0	0	0	0	0	0	0	0	11.6	21.4	23.4

## Adjusted for diversion

Mean	17.6	131	125	130	134	190	90.8	89.9	42.1	13.1	20.6	10.1
Cfs	0.415	3.09	2.95	3.07	3.16	4.48	2.14	2.12	0.993	0.309	0.486	0.23
In.	0.48	3.46	3.40	3.53	3.40	5.16	2.39	2.44	1.11	0.36	0.56	0.27

	Observed						Adjusted					
Calendar year 1951:	Max	327	Min	4.6	Mean	79.1	Mean	79.1	Cfs	1.87	In.	25.32
Water year 1951-52:	Max	406	Min	3.5	Mean	82.5	Mean	82.7	Cfs	1.95	In.	26.56

Peak discharge (base, 280 cfs).--Dec. 22 (5:30 to 6:30 p.m.) 320 cfs (7.65 ft); Mar. 12 (8:30 p.m.) 454 cfs (8.32 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record May 20-29, May 31 to June 9; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for Taunton River at State Farm, Neponset River at Norwood, and Potowomut River near East Greenwich, R. I. Backwater from waste or grass on control Oct. 1-24, July 18 to Aug. 1, Sept. 1-30.

## Kettle Brook at Worcester, Mass.

Location.--Lat 42°13'55", long. 71°50'07", on right bank 75 ft downstream from Webster Street Bridge at Worcester, Worcester County, 1 mile upstream from Beaver Brook.

Drainage area.--31.3 sq mi.

Records available.--August 1923 to September 1952. Prior to October 1950, published as Blackstone River at Worcester.

Gage.--Water-stage recorder. Concrete control since Oct. 28, 1937. Datum of gage is 472.86 ft above mean sea level, datum of 1929.

Average discharge.--29 years, 50.8 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 508 cfs June 2 (gage height, 4.57 ft); minimum, 5.2 cfs July 26, 27.

1923-52: Maximum discharge, 2,520 cfs Mar. 18, 1936 (gage height, 8.58 ft, from floodmarks), from rating curve extended above 550 cfs; minimum, 0.2 cfs May 17, 1940.

Remarks.--Records excellent. City of Worcester diverts flow from about 7.0 sq mi of drainage area above station. Flow regulated by reservoirs above station.

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)

2.1	4.8	3.2	86
2.3	9.4	3.5	155
2.5	16	4.0	300
2.7	26	4.5	480
2.9	42		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	40	42	96	99	52	74	135	99	20	13	18
2	13	32	42	109	101	48	74	92	428	19	16	20
3	15	158	40	116	109	47	76	74	358	17	17	21
4	13	244	42	99	118	46	71	63	204	17	17	17
5	12	133	42	86	155	69	85	57	155	16	25	15
6	12	74	58	78	135	78	207	53	107	15	40	14
7	16	92	60	71	107	69	186	49	84	13	36	12
8	37	152	52	63	90	62	118	46	64	12	26	11
9	20	107	51	58	88	56	86	42	54	12	19	11
10	16	69	54	56	84	53	74	40	48	16	45	12
11	*16	62	49	*54	81	93	66	36	47	18	66	24
12	22	60	44	52	78	192	66	72	42	15	38	28
13	21	60	*40	51	63	189	57	90	38	13	26	24
14	18	79	34	48	57	160	80	74	32	*12	19	23
15	16	96	40	51	52	130	107	69	29	11	16	24
16	16	*86	32	64	48	107	88	62	27	10	20	22
17	14	94	32	71	52	107	71	42	35	9.7	94	16
18	14	86	38	98	58	105	57	42	46	8.9	76	16
19	14	68	58	112	48	105	51	40	46	7.8	42	21
20	12	57	56	103	56	116	47	38	36	6.4	28	23
21	12	51	130	112	64	132	42	57	26	6.6	23	20
22	12	46	231	88	69	140	40	58	24	7.1	29	*18
23	14	45	148	159	68	132	38	47	23	6.6	22	18
24	15	52	92	180	63	165	34	40	22	5.8	19	18
25	32	53	74	116	48	145	*37	44	22	5.6	*17	18
26	26	62	71	130	46	138	60	62	21	5.6	16	17
27	25	66	63	231	46	140	63	63	19	5.6	16	16
28	32	56	56	246	52	132	128	52	19	5.8	15	14
29	40	49	52	216	52	116	219	54	24	6.0	14	13
30	47	46	56	158	-	96	189	78	24	6.0	14	13
31	42	-	83	116	-	83	-	63	-	6.8	13	-
Total	627	2,385	1,962	3,268	2,187	3,303	2,591	1,834	2,203	336.3	877	545
Mean	20.2	79.5	63.3	106	75.4	107	86.4	59.2	73.4	10.8	28.3	18.2
(†)	183.6	220.8	209.4	219.1	197.3	206.9	200.7	201.0	191.3	163.4	162.8	130.3

## Adjusted for diversion

Mean	29.4	90.9	73.7	117	85.9	117	96.7	69.2	83.3	19.0	36.4	24.9
Cfs/m	0.939	2.90	2.35	3.74	2.74	3.74	3.09	2.21	2.66	0.607	1.16	0.796
In.	1.08	3.24	2.72	4.31	2.96	4.30	3.45	2.55	2.97	0.70	1.34	0.89

## Observed

## Adjusted

Calendar year 1951:	Max	462	Min	8.4	Mean	49.4	Mean	59.7	Cfs/m	1.91	In.	25.90
Water year 1951-52:	Max	428	Min	5.6	Mean	60.5	Mean	70.2	Cfs/m	2.24	In.	30.51

Peak discharge (base, 250 cfs).--Nov. 3-4 (11:30 p.m. to 1:30 a.m.) 294 cfs (3.98 ft); Jan. 27 (5 to 9:30 p.m.) 252 cfs (3.84 ft); June 2 (4 to 6 p.m.) 508 cfs (4.57 ft).

\* Discharge measurement made on this day.

† Diversion for municipal supply of Worcester, in millions of gallons. Records furnished by City of Worcester.

Note.--Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Quinsigamond River at North Grafton, Mass.

Location.--Lat 42°13'49", long. 71°42'41", on right bank 800 ft downstream from dam at outlet of Flint Pond at North Grafton, Worcester County, and 0.3 mile upstream from Bummet Brook.

Drainage area.--25.5 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 335 ft (from topographic map). Prior to Dec. 7, 1939, staff gage at same site and datum.

Average discharge.--13 years, 37.1 cfs.

Extremes.--Maximum discharge during year, 319 cfs June 6 (gage height, 3.22 ft); minimum daily, 6.2 cfs July 31.  
1939-52: Maximum discharge, that of June 6, 1952; minimum daily, 0.3 cfs Oct. 14-17, 1942.

Remarks.--Records excellent. Some regulation by Lake Quinsigamond and ponds above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Backwater from debris Oct. 9, 10)

Oct. 1 to Aug. 20 Aug. 21 to Sept. 30

0.8	4.4	2.0	82	1.0	6.8
1.0	9.1	2.5	160	1.2	14
1.2	16	3.0	265	1.4	24
1.4	27	3.3	340	1.7	45
1.7	50				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.1	22	49	78	112	49	91	101	89	34	7.2	18
2	9.7	25	48	83	109	47	90	92	199	31	7.2	29
3	11	77	46	91	108	45	87	86	224	28	8.3	28
4	12	127	44	88	112	44	83	80	207	26	6.4	23
5	14	114	45	90	122	53	87	72	183	27	12	21
6	14	99	53	88	117	59	117	68	241	25	23	18
7	14	114	55	82	109	61	117	66	277	25	24	18
8	28	151	56	76	*102	60	109	82	192	22	21	14
9	28	128	56	71	102	57	98	57	56	21	19	13
10	25	111	59	68	95	55	92	54	53	21	24	12
11	*23	98	54	*67	92	71	88	53	59	30	46	11
12	25	85	*52	62	96	120	81	70	57	28	41	11
13	23	76	51	59	70	128	75	74	55	28	37	11
14	22	72	44	57	82	134	85	74	52	*25	32	11
15	20	*75	52	56	74	128	91	69	51	22	28	9.2
16	19	74	50	58	67	117	88	68	49	21	27	10
17	19	77	45	59	67	108	85	61	50	19	72	10
18	18	75	47	72	78	102	78	61	58	17	71	9.2
19	17	67	54	77	74	99	74	60	54	17	61	13
20	17	62	53	82	67	106	70	60	50	16	52	18
21	16	56	83	91	64	*112	63	69	45	14	*45	17
22	14	52	106	85	62	115	*57	71	43	13	45	14
23	13	50	101	109	59	119	56	66	40	12	39	13
24	13	54	92	119	56	132	52	61	38	11	33	13
25	20	53	85	108	54	132	51	60	38	8.3	*27	*12
26	22	57	83	114	52	125	61	64	37	7.7	25	11
27	21	63	78	139	52	122	64	64	36	8.0	23	11
28	20	71	147	52	52	117	87	*60	34	7.7	21	10
29	21	51	66	153	50	111	109	60	34	7.7	20	8.4
30	19	50	64	139	-	103	109	75	36	7.2	19	8.4
31	19	-	74	123	-	96	-	78	-	6.2	17	-
Total	565.8	2,273	1,916	2,791	2,356	2,927	2,495	2,116	2,637	583.8	933.1	425.2
Mean	18.3	75.8	61.8	90.0	81.2	94.4	83.2	68.3	87.9	18.8	30.1	14.2
Cfs/m	0.718	2.97	2.42	3.53	3.18	3.70	3.26	2.68	3.45	0.737	1.18	0.557
In.	0.83	3.32	2.79	4.07	3.44	4.27	3.64	3.09	3.65	0.85	1.36	0.62
Calendar year 1951: Max	211				Min	4.9		50.6	Cfs/m	1.98	In.	26.96
Water year 1951-52: Max	277				Min	6.2	Mean	60.2	Cfs/m	2.36	In.	32.13

\* Discharge measurement made on this day.

Note.--Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Blackstone River at Northbridge, Mass.

Location.--Lat 42°09'13", long. 71°39'09", on left bank 800 ft downstream from Paul Whittin Co. dam at Northbridge, Worcester County, and 3 miles downstream from Quinsigamond River.

Drainage area.--139 sq mi.

Records available.--December 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 260 ft (from topographic map).

Average discharge.--13 years, 207 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 1,750 cfs June 2 (gage height, 8.03 ft); minimum daily, 55 cfs Oct. 6.

1939-52: Maximum discharge, 2,270 cfs Feb. 8, 1951 (gage height, 9.04 ft); minimum daily discharge, 2 cfs Aug. 29, 1941, Sept. 5, 1942.

Maximum discharge known, 7,510 cfs Mar. 19, 1936 (gage height, 13.7 ft, from floodmarks), by computation of flow over dam 800 ft above station.

Remarks.--Records good except those below 70 cfs and those for days of no gage-height record, which are fair. Flow regulated by mills and reservoirs above station. Daily discharge includes flow diverted from Nashua River basin to Blackstone River basin for municipal supply of Worcester.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	251	265	520	500	284	421	561	457	183	124	114
2	62	252	265	558	500	267	414	461	1,590	153	78	295
3	64	956	270	574	540	276	408	402	1,340	110	82	184
4	63	1,230	262	514	600	267	394	372	940	131	100	150
5	74	721	261	468	750	340	441	353	757	138	161	146
6	55	465	381	446	700	400	827	336	614	126	240	105
7	79	777	346	417	600	402	768	326	587	167	228	103
8	312	1,050	318	391	520	356	584	310	510	90	161	117
9	186	704	325	372	498	330	477	299	388	*118	129	120
10	139	483	348	*360	468	335	428	272	297	128	298	106
11	126	404	318	352	485	617	402	274	301	210	408	114
12	*164	398	*293	332	457	1,090	369	485	283	160	249	101
13	126	359	276	320	384	326	352	449	261	120	212	97
14	108	381	258	324	*360	782	496	400	235	131	163	117
15	121	*470	263	321	335	653	510	368	218	131	136	115
16	118	449	256	368	318	551	464	355	215	126	138	123
17	118	504	230	374	327	512	417	315	275	117	635	100
18	107	438	285	350	367	493	318	352	318	111	397	89
19	110	387	400	560	346	507	349	339	259	101	291	148
20	94	376	400	560	334	580	327	319	233	89	232	146
21	89	341	700	575	346	638	300	422	192	92	*198	108
22	96	320	1,200	462	333	*638	289	394	183	80	246	110
23	101	341	800	867	322	668	*281	344	180	73	182	118
24	129	355	550	792	308	782	276	308	174	62	161	111
25	257	349	440	581	311	715	292	334	177	81	163	*105
26	165	421	430	714	298	641	379	396	172	79	*149	98
27	148	411	400	966	298	621	372	372	170	79	141	86
28	141	355	370	998	297	591	689	*333	166	96	143	70
29	172	313	350	971	295	530	866	355	202	106	135	80
30	161	289	370	800	-	481	698	442	232	98	122	84
31	159	-	480	600	-	443	-	399	-	116	108	-
Total	3,909	14,550	12,105	17,017	12,197	16,716	13,671	11,447	11,924	3,602	6,210	3,559
Mean	126	485	390	549	421	539	456	369	397	116	200	119
(†)	638.0	82.2	183.4	67.0	134.4	240.0	194.9	357.8	394.4	523.0	517.3	712.6

Adjusted for diversion

	94.3	461	381	546	413	527	446	551	377	90.1	175	81.9
Mean	0.678	3.46	2.74	3.95	2.97	3.79	3.21	2.53	2.71	0.648	1.26	0.589
In.	0.78	3.86	3.16	4.53	3.21	4.37	3.58	2.91	3.03	0.75	1.45	0.66

	Observed						Adjusted					
Calendar year 1951:	Max	1,910	Min	6.6	Mean	302	Mean	284	Cfs	2.04	In.	27.75
Water year 1951-52:	Max	1,590	Min	55	Mean	347	Mean	330	Cfs	2.37	In.	32.29

\* Discharge measurement made on this day.

† Diversion from Nashua River basin to Blackstone River basin for municipal supply of Worcester, in millions of gallons. Records furnished by city of Worcester.

Note.--No gage-height record Dec. 17 to Jan. 1, Jan. 30 to Feb. 8; discharge estimated on basis of recorded range in stage, weather records, and records for Blackstone River at Woonsocket, R. I., and Kettle Brook at Worcester. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Branch River at Forestdale, R. I.

Location.--Lat 41°59'47", long. 71°33'47", on left bank 20 ft upstream from abandoned bridge, 600 ft downstream from milldam at Forestdale, Providence County, 1 mile east of Slatersville, and 1.6 miles upstream from mouth.

Drainage area.--93.3 sq mi.

Records available.--September to December 1909, January 1912 to July 1913 (gage heights only), January 1940 to September 1952. Published as "at Branch Village" 1909, 1912-13.

Gage.--Water-stage recorder. Altitude of gage is 180 ft (from topographic map). Prior to July 28, 1913, staff gage at site 1 mile downstream at different datum.

Average discharge.--12 years, 149 cfs.

Extremes.--Maximum discharge during year, 1,310 cfs Nov. 8 (gage height, 6.02 ft); minimum daily, 9.4 cfs Aug. 9.

1940-52: Maximum discharge, 2,120 cfs Dec. 2, 1942 (gage height, 7.69 ft); minimum daily, 5.2 cfs Oct. 7, 1948.

Discharge of flood in March 1936 was about 5,800 cfs, by computation of flow over dam 1 mile above station.

Remarks.--Records excellent except those for period of backwater from scum, which are good, and those for periods of no gage-height record, which are fair. Flow regulated by mills and reservoirs above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Stage-discharge relation affected by ice Feb. 2)

1.7	7.4	3.0	183
1.8	12	3.5	320
1.9	17	4.0	490
2.0	24	5.0	870
2.3	55	6.0	1,300
2.6	100		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	172	168	320	263	96	231	424	167	24	14	26
2	23	134	208	*352	235	115	218	316	580	23	14	28
3	24	405	257	304	355	211	215	198	595	23	15	85
4	24	858	*205	275	370	191	205	213	396	22	16	82
5	24	532	200	215	497	201	172	253	348	22	19	23
6	35	*355	258	284	430	257	424	199	241	22	20	22
7	49	485	275	319	*339	327	396	190	213	77	143	21
8	163	1,130	180	252	300	243	294	156	183	78	147	75
9	*178	694	206	240	284	246	257	72	232	51	9.4	76
10	146	458	264	233	257	282	229	133	193	11	19	78
11	111	410	205	228	263	443	210	129	187	12	119	19
12	22	330	202	182	318	1,130	137	390	180	24	119	15
13	24	312	172	194	255	830	174	399	146	14	85	18
14	22	261	150	243	231	658	280	292	15	38	14	20
15	74	329	130	203	206	536	*316	223	24	13	113	86
16	74	365	140	246	194	455	303	*203	98	21	84	*75
17	71	462	150	266	213	385	248	107	71	*14	20	81
18	24	420	200	358	277	344	211	154	97	19	52	24
19	19	379	300	376	249	*338	129	232	114	18	19	15
20	17	303	350	327	239	382	160	198	120	17	18	20
21	16	248	600	410	224	424	216	241	22	20	17	20
22	88	244	1,100	297	208	355	191	298	26	19	17	31
23	19	257	600	468	197	399	189	186	100	20	14	25
24	18	275	400	539	195	539	187	190	71	18	15	24
25	37	300	300	379	230	441	189	178	90	15	17	20
26	26	376	310	354	203	379	94	279	110	16	*19	12
27	38	375	320	638	195	338	198	222	117	13	19	1
28	71	284	330	598	190	308	602	196	17	32	88	19
29	180	240	270	508	190	220	846	160	24	15	82	88
30	175	227	290	376	-	241	567	39	26	14	19	84
31	165	-	310	300	-	286	-	121	-	15	22	-
Total	1,959	11,620	9,050	10,280	7,597	11,600	8,088	6,589	4,803	742	1,388.4	1,245
Mean	62.5	387	292	332	262	374	270	213	160	23.9	44.8	41.5
Cfs/m	0.670	4.15	3.13	3.56	2.81	4.01	2.89	2.28	1.71	0.256	0.460	0.445
In.	0.77	4.63	3.61	4.10	3.03	4.62	3.22	2.63	1.91	0.30	0.55	0.50

Calendar year 1951: Max 1,200 Min 14 Mean 204 Cfs/m 2.19 In. 29.65  
Water year 1951-52: Max 1,130 Min 9.4 Mean 205 Cfs/m 2.20 In. 29.87

Peak discharge (base, 880 cfs).--Nov. 4 (2:30 a.m.) 1,040 cfs (5.42 ft); Nov. 8 (6:30 a.m.) 1,310 cfs (6.02 ft); Dec. 22 (time unknown) about 1,300 cfs; Mar. 12 (7 a.m.) 1,300 cfs (5.99 ft); Apr. 29 (6 a.m.) 994 cfs (5.31 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 14 to Jan. 1, July 15-17; discharge estimated on basis of recorded range in stage, 2 discharge measurements, weather records, mill-operation records, and records for Blackstone River at Woonsocket. Backwater from scum June 29 to Aug. 15. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.



## Blackstone River at Woonsocket, R. I.

Location.--Lat 42°00'22", long. 71°30'13", on right bank at Woonsocket, Providence County, 50 ft downstream from Peters Rivers.

Drainage area.--416 sq mi.

Records available.--February 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 107.42 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 681 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 4,090 cfs Nov. 8 (gage height, 6.87 ft); minimum daily, 100 cfs July 26.

1929-52: Maximum discharge, 15,100 cfs July 24, 1938 (gage height, 14.43 ft); minimum daily, 21 cfs Aug. 11, 1934, flow diverted around station in Hamlet Trench not included.

Remarks.--Records good. Flow regulated by powerplants and reservoirs above station.

Extremes and figures of daily discharge include flow diverted from Nashua River basin to Blackstone River basin for supply of city of Worcester, Mass., and flow diverted around station in Hamlet Trench.

Revisions (water years).--W 756: Drainage area. W 781: 1931(M). W 1051: 1931.

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)  
(Backwater from aquatic vegetation June 14-16,  
June 21 to Sept. 9)

1.3	83	3.0	660
1.5	122	5.0	2,230
2.0	240	6.6	3,770
2.5	411		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	185	608	753	1,530	1,500	618	1,100	1,870	968	352	165	157
2	192	835	917	*1,580	1,440	648	1,070	1,560	1,950	334	122	241
3	204	1,670	892	1,530	1,620	757	1,060	1,300	3,040	308	130	370
4	206	3,350	*760	1,440	1,700	721	997	1,180	2,350	240	145	257
5	220	2,520	794	1,270	2,040	929	924	1,040	1,950	286	175	223
6				1,340	1,940	1,200	1,660	905	1,630	262	230	147
7	220	1,890	1,150	1,300	*1,660	1,370	1,830	880	1,260	291	465	156
8	511	3,700	963	1,110	1,520	1,140	1,580	823	1,300	297	452	258
9	648	2,840	1,020	1,010	1,370	1,090	1,300	678	1,220	262	184	217
10	*509	2,080	1,100	953	1,320	1,080	1,170	685	916	223	230	210
11	489	1,690	960	944	1,310	1,510	989	724	848	277	535	159
12	322	1,440	909	888	1,450	3,500	898	1,300	806	279	632	155
13	348	1,320	891	782	1,230	3,170	888	1,560	747	251	395	131
14	280	1,200	710	872	965	2,610	1,120	1,360	457	311	224	128
15	372	1,420	742	823	976	2,020	*1,380	1,070	397	236	321	238
16	365	1,520	557	979	788	1,900	1,390	*989	484	189	211	*227
17	373	1,720	757	1,090	930	1,680	1,250	740	553	186	240	214
18	277	1,860	847	1,340	1,110	1,470	1,040	874	731	187	610	166
19	273	1,460	1,350	1,600	1,080	*1,430	786	947	615	147	436	158
20	210	1,220	1,390	1,590	1,050	1,550	895	887	602	149	309	154
21	218	1,140	2,430	1,720	930	1,700	849	1,080	384	185	253	183
22	326	1,100	3,740	1,400	956	1,660	761	1,200	391	192	239	209
23	226	969	2,870	1,830	808	1,820	734	995	539	171	192	188
24	244	1,020	2,040	2,280	821	2,090	699	814	395	178	193	183
25	445	1,180	1,680	1,740	916	2,000	755	821	410	149	234	179
26	503	1,270	1,630	1,690	874	1,820	834	1,110	361	100	202	168
27	344	1,400	1,470	2,400	835	1,690	1,150	1,040	462	118	166	128
28	369	1,210	1,240	2,550	780	1,560	1,680	917	217	149	206	137
29	485	1,030	1,060	2,450	774	1,380	2,690	811	301	160	212	*218
30	540	979	1,220	2,050	-	1,380	2,310	674	*391	161	132	220
31	490	-	1,410	1,680	-	1,260	-	769	-	*150	135	-
Total	10,601	47,231	39,272	45,761	34,693	48,753	35,979	31,603	26,675	6,780	8,375	5,779
Mean	342	1,574	1,267	1,476	1,196	1,573	1,199	1,019	889	219	270	193
Mean (†)	638.0	82.2	183.4	67.0	154.4	240.0	194.9	357.8	394.4	523.0	517.3	712.6

## Adjusted for diversion

Mean	310	1,570	1,258	1,473	1,189	1,561	1,189	1,002	869	193	244	156
Cfsm	0.745	3.77	3.02	3.54	2.86	3.75	2.86	2.41	2.09	0.464	0.587	0.375
In.	0.86	4.21	3.49	4.08	3.08	4.33	3.19	2.78	2.33	0.53	0.68	0.42

		Observed				Adjusted						
Calendar year 1951:	Max	4,040	Min	123	Mean	897	Mean	880	Cfsm	2.12	In.	28.70
Water year 1951-52:	Max	3,740	Min	100	Mean	933	Mean	916	Cfsm	2.20	In.	29.98

Peak discharge (base, 3,400 cfs).--Nov. 4 (10 a.m.) 3,740 cfs (6.54 ft); Nov. 8 (11:30 a.m.) 4,090 cfs (6.87 ft); Dec. 22 (8 a.m.) 3,990 cfs (6.76 ft); Mar. 12 (7 a.m.) 3,690 cfs (6.49 ft).

\* Discharge measurement made on this day.

† Diversion, in millions of gallons, from Nashua River basin for municipal supply of Worcester, Mass. Records furnished by city of Worcester.

## Woonasquatucket River at Centerdale, R. I.

Location.--Lat 41°51'32", long. 71°29'16", on right bank 75 ft downstream from bridge on U. S. Highway 44, at Centerdale, Providence County, and 6½ miles upstream from mouth.

Drainage area.--38.3 sq mi.

Records available.--July 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 95 ft (from topographic map).

Average discharge.--11 years, 62.1 cfs.

Extremes.--Maximum discharge during year, 496 cfs Mar. 11 (gage height, 4.55 ft); minimum daily, 9.3 cfs Oct. 1.

1941-52: Maximum discharge, 543 cfs Mar. 17, 1948 (gage height, 4.88 ft); minimum daily, 3.4 cfs Oct. 13, 19, 1941.

Flood in March 1936 reached a discharge of 1,000 cfs, by computation of flow over dam three-quarters of a mile below station.

Remarks.--Records good. Flow regulated by mills and reservoirs above station. Discharge includes leakage through bypass canal.

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)  
(Backwater from aquatic vegetation Oct. 1-21, Aug. 23  
to Sept. 13)

1.2	7.9	2.5	108
1.3	12	3.0	176
1.5	23	4.0	353
2.0	57	4.5	464

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.3	38	60	124	129	86	103	177	87	42	30	a29
2	*14	44	71	125	133	84	99	147	115	42	25	a31
3	16	124	82	126	137	92	91	123	96	42	19	28
4	*17	79	69	117	167	85	78	114	86	26	32	28
5	16	70	72	117	212	135	90	107	84	28	46	28
6	12	*59	*95	121	196	147	136	99	78	22	50	28
7	11	128	85	*115	171	154	133	91	66	*40	47	27
8	39	148	65	101	*150	148	117	84	62	35	42	27
9	41	95	80	96	139	139	109	77	68	30	40	27
10	38	67	94	94	130	141	102	61	58	32	46	27
11	22	48	77	90	141	255	96	73	53	33	42	28
12	14	41	70	80	137	414	81	146	50	21	39	28
13	13	67	71	86	119	382	78	122	48	17	41	28
14	12	72	70	93	110	313	108	111	36	31	39	28
15	18	92	68	89	96	258	103	102	43	30	41	28
16	21	95	76	100	89	216	101	95	54	28	40	30
17	24	110	80	94	106	194	98	76	46	29	60	28
18	22	78	98	121	158	170	90	85	46	30	43	*31
19	23	84	147	106	140	161	79	94	41	20	38	30
20	17	75	97	121	128	*177	73	85	40	15	35	28
21	16	72	272	127	122	169	85	106	29	30	34	28
22	39	64	329	116	116	158	*73	115	40	30	35	28
23	15	78	298	184	107	161	69	102	49	28	32	28
24	14	69	212	170	100	193	66	92	39	*25	31	28
25	27	62	184	148	106	168	65	95	39	24	30	28
26	24	107	174	164	97	155	68	*115	38	19	30	28
27	24	94	151	194	96	139	84	101	38	17	a30	28
28	18	78	130	198	96	127	213	91	26	24	a29	27
29	24	72	115	201	90	113	235	82	28	35	a29	28
30	24	74	119	171	-	107	210	64	50	32	a28	28
31	25	-	134	149	-	114	-	71	-	*30	a28	-
Total	649.3	2,382	3,745	3,936	3,718	5,335	3,133	3,101	1,633	887	1,131	846
Mean	20.9	79.4	121	127	128	172	104	100	54.4	28.6	36.5	28.2
Cfsm	0.546	2.07	3.16	3.32	3.34	4.49	2.72	2.61	1.42	0.747	0.953	0.736
In.	0.63	2.31	3.64	3.82	3.61	5.18	3.04	3.01	1.59	0.86	1.10	0.82
Calendar year 1951: Max	374				Min 7.9		Mean 82.2	Cfsm 2.15	In. 29.14			
Water year 1951-52: Max	414				Min 9.3		Mean 83.3	Cfsm 2.17	In. 29.61			

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Branch River at Forestdale, R. I., and Wading River near Norton, Mass.

Note.--Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## South Branch Pawtuxet River at Washington, R. I.

Location.--Lat 41°41'24", long. 71°33'59", at Washington, Kent County, on right bank 150 ft downstream from highway bridge and 0.9 mile upstream from outlet of Tiogue Lake.

Drainage area.--63.8 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 230 ft (from topographic map).

Average discharge.--12 years, 117 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 746 cfs Mar. 12 (gage height, 2.87 ft); minimum daily, 13 cfs Oct. 21.

1940-52: Maximum discharge, 959 cfs June 1, 1948, from rating curve extended above 440 cfs by logarithmic plotting; maximum gage height, that of Mar. 12, 1952; minimum daily discharge, 2.8 cfs Aug. 27, 1944.

Flood in March 1936 reached a discharge of 1,810 cfs, by computation of flow over dam just above gage.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Flat River Reservoir (usable capacity, 250,000,000 cu ft) and smaller reservoirs. Diversion above station from Carr Pond for municipal supply of Coventry, Warwick, and West Warwick.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	12	2.0	158
1.4	20	2.3	320
1.6	49	2.8	690
1.8	93		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	a80	102	249	223	196	183	272	142	22	85	18
2	62	a77	117	233	192	196	176	217	215	20	30	86
3	62	a105	157	228	249	201	168	148	189	20	28	83
4	*62	a93	139	183	341	196	157	154	160	20	91	81
5	62	a80	131	*148	376	196	117	190	136	20	96	78
6	*14	a76	150	206	376	228	177	164	117	24	100	17
7	15	a150	156	284	*327	258	222	150	65	90	105	17
8	66	*a120	*120	233	255	222	192	143	77	94	105	77
9	64	99	137	201	211	238	171	126	127	95	29	81
10	64	*38	194	192	233	302	161	74	108	100	37	80
11	68	87	161	124	302	320	150	104	102	99	107	79
12	66	126	148	71	290	666	91	216	102	22	104	74
13	17	164	139	175	249	*618	108	222	92	23	114	15
14	17	151	116	228	b170	474	171	198	28	87	36	17
15	63	174	93	211	b150	363	172	171	43	96	100	73
16	67	194	b115	206	115	327	166	150	115	95	30	90
17	64	192	b170	206	172	296	157	96	100	93	27	80
18	65	217	162	150	334	272	*140	116	97	*91	84	76
19	63	227	240	141	314	260	88	162	95	21	90	75
20	15	184	253	210	284	278	108	152	91	20	88	20
21	13	151	452	308	260	238	142	191	26	*91	90	19
22	61	97	674	260	249	211	124	208	27	88	95	74
23	63	150	474	302	228	238	114	160	90	90	24	76
24	65	99	355	362	217	320	104	117	97	86	21	*74
25	65	120	290	272	206	296	103	130	103	86	87	76
26	69	194	278	281	206	272	77	*197	99	18	88	70
27	18	202	255	460	201	249	122	190	93	17	*85	15
28	a18	182	195	432	201	185	168	222	22	86	86	15
29	a65	159	151	411	196	137	365	143	27	86	80	71
30	a65	149	188	348	-	158	338	81	96	89	17	71
31	a65	-	266	296	-	210	-	93	-	88	14	-
Total	1,603	4,137	6,578	7,551	7,127	8,621	4,832	4,921	2,881	1,983	2,173	1,778
Mean	51.7	138	212	244	246	278	161	159	96.0	64.0	70.1	59.3
(f)	-6.90	+72.8	+3.35	-0.71	-3.68	+7.06	+5.73	-4.10	-12.3	-30.0	+1.00	-27.4

Adjusted for diversion and change in reservoir contents

Mean	44.8	211	215	243	242	285	167	155	83.7	34.0	71.1	31.9
Cfsm	0.702	3.31	3.37	3.81	3.79	4.47	2.62	2.43	1.31	0.533	1.11	0.500
In.	0.81	3.69	3.89	4.39	4.09	5.15	2.92	2.79	1.46	0.61	1.28	0.56

	Observed					Adjusted						
Calendar year 1951:	Max	674	Min	11	Mean	143	Mean	144	Cfsm	2.26	In.	30.61
Water year 1951-52:	Max	674	Min	13	Mean	148	Mean	148	Cfsm	2.32	In.	31.64

\* Discharge measurement made on this day.

† Diversion above station from Carr Pond for municipal supply of Coventry, Warwick, and West Warwick, and change in contents in Flat River Reservoir, equivalent in cubic feet per second. Records furnished by Kent County Water Authority and Quidnick Reservoir Co.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, records of elevation and gate operation at Flat River Reservoir, and records for Pawtuxet River at Cranston.

b Stage-discharge relation affected by ice.

## Pawtuxet River at Cranston, R. I.

Location.--Lat 41°45'03", long. 71°26'44", on left bank at Cranston, Providence County, 0.7 mile upstream from Pocasset River.

Drainage area.--200 sq mi.

Records available.--December 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Average discharge.--12 years (1940-52), 358 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 1,600 cfs Dec. 21 (gage height, 7.95 ft), from rating curve extended above 1,200 cfs; minimum daily, 25 cfs Oct. 21.  
1939-52: Maximum discharge, 2,150 cfs Jan. 15, 1940, Feb. 8, 1941, from rating curve extended above 800 cfs; maximum gage height, 8.25 ft Jan. 15, 1940; minimum daily discharge, 22 cfs Sept. 4, 1944.

Remarks.--Records excellent except those for periods of backwater from aquatic vegetation, which are good. Flow regulated by powerplants, and by Scituate, Flat River, and other reservoirs (combined usable capacity, about 5 1/3 billion cu ft). Diversion above station from Scituate Reservoir for municipal supply of Providence, North Providence, Cranston, Johnston, Smithfield, and Warwick.

Revisions (water years).--W 971: 1940-42.

Rating tables, water year 1951-52, except periods of backwater from aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20

Dec. 21 to Sept. 30

3.3	22	4.5	385	3.5	49	5.0	618
3.5	49	5.0	635	3.7	91	6.0	1,020
3.7	91	6.0	1,060	4.0	181	8.0	1,620
4.0	181			4.5	385		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	218	240	834	801	578	625	537	243	183	169	73
2	179	206	206	858	668	356	606	512	521	146	141	164
3	169	295	450	791	746	478	538	312	523	145	145	*206
4	*175	227	449	744	969	589	578	270	485	113	168	205
5	179	235	423	*583	*1,070	917	312	421	418	105	267	163
6	105	219	*518	703	1,000	898	338	344	430	51	244	117
7	57	*395	507	853	878	947	528	332	248	139	239	73
8	134	*650	266	768	854	528	642	275	148	218	200	131
9	176	313	262	693	737	460	597	297	353	217	138	195
10	177	144	528	663	737	676	518	168	334	198	115	194
11	206	86	500	631	875	851	553	184	324	236	263	190
12	136	151	467	450	832	1,320	257	550	223	146	239	171
13	107	342	429	496	736	1,200	206	480	223	94	267	135
14	70	365	411	705	590	1,140	448	421	124	179	175	77
15	162	436	322	702	648	987	468	354	91	209	122	132
16	180	462	269	709	509	842	445	407	235	206	138	325
17	182	352	446	694	624	702	401	224	252	180	99	227
18	180	323	545	784	1,010	*791	*413	216	248	197	203	203
19	180	518	906	573	916	774	241	429	201	132	218	195
20	117	434	678	683	830	810	202	404	197	73	194	141
21	25	348	1,260	895	704	830	374	506	130	150	194	62
22	142	157	1,400	811	723	698	301	450	80	200	242	157
23	166	298	1,140	1,080	658	742	278	519	192	*197	158	221
24	167	216	922	987	643	858	228	327	222	175	80	218
25	252	206	987	918	727	882	258	235	216	172	189	204
26	178	549	993	833	627	801	198	*524	192	131	243	180
27	97	553	874	1,090	643	742	216	530	212	60	*237	134
28	31	490	791	1,120	579	698	739	496	131	136	208	80
29	105	398	558	1,080	613	543	810	429	82	188	213	138
30	157	411	678	978	-	578	688	277	162	192	137	*216
31	154	-	830	807	-	722	-	202	-	169	82	-
Total	4,430	9,997	19,255	24,516	21,947	23,738	13,006	11,632	7,442	4,937	5,724	4,947
Mean	143	333	621	791	757	766	434	375	248	159	185	165
(+)	-37.6	+371	+176	+27.2	-27.9	+165	+112	+94.0	-15.2	-84.7	-1.48	-82.3

Adjusted for diversion and change in reservoir contents

Mean	105	704	797	818	729	931	546	469	233	74.5	183	82.6
Cfs	0.525	3.52	3.98	4.09	3.64	4.66	2.73	2.34	1.16	0.372	0.915	0.413
In.	0.61	3.93	4.60	4.72	3.93	5.37	3.04	2.70	1.30	0.43	1.06	0.46

Observed

Adjusted

Calendar year 1951:	Max	1,400	Min	25	Mean	378	Mean	465	Cfs	2.32	In.	31.58
Water year 1951-52:	Max	1,400	Min	25	Mean	414	Mean	472	Cfs	2.36	In.	32.15

\* Discharge measurement made on this day.

† Diversion above station from Scituate Reservoir for municipal supply and change in contents in Scituate and Flat River Reservoirs, equivalent in cubic feet per second. Records furnished by Providence Water Supply Board and Quinick Reservoir Co.

Note.--Backwater from aquatic vegetation oct. 1 to Dec. 3, June 2 to Sept. 30.

## Potowomut River near East Greenwich, R. I.

Location.--Lat 41°38'28", long. 71°26'45", on right bank 45 ft upstream from Old Forge Dam in North Kingstown, Washington County, 1½ miles south of village of East Greenwich, Kent County, and 2½ miles upstream from mouth.

Drainage area.--23.0 sq mi.

Records available.--August 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Average discharge.--12 years, 38.8 cfs (unadjusted).

Extremes.--Maximum discharge during year, 328 cfs Dec. 21 (gage height, 2.325 ft); minimum, 3.4 cfs July 31.

1940-52: Maximum discharge, 392 cfs Aug. 8, 1946 (gage height, 2.48 ft); maximum gage height, 2.70 ft Sept. 14, 1944 (backwater from hurricane tidal wave); no flow Oct. 24-26, 1947 (due to closing of gate at Old Forge Dam).

Maximum stage known, about 8.5 ft Sept. 21, 1938, from information by local resident (backwater from hurricane tidal wave).

Remarks.--Records good. Diversions above station for supply of East Greenwich, North Kingstown, Warwick, and United States Naval establishments.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	3.4	1.5	66
1.2	13	2.0	213
1.3	26	2.5	400

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	23	39	76	89	71	74	82	53	21	4.1	9.6
2	*4.7	29	38	71	101	66	71	69	66	18	9.9	11
3	4.2	77	36	82	103	64	74	64	55	17	19	11
4	4.6	103	34	76	121	62	71	59	44	17	17	9.0
5	4.9	65	35	*63	*168	158	71	56	42	17	13	9.0
6	4.9	42	*52	87	137	168	92	53	39	16	14	9.0
7	5.7	78	53	74	112	155	82	53	36	16	21	8.0
8	9.0	*132	45	67	98	129	71	51	33	15	19	7.0
9	8.5	87	44	61	95	114	66	47	33	13	15	7.0
10	7.5	59	43	56	89	109	63	46	35	14	39	7.0
11	7.5	47	38	54	90	157	60	48	38	15	74	7.5
12	9.6	40	37	52	95	261	57	102	34	17	46	7.5
13	9.6	36	34	51	79	187	56	98	31	15	43	7.0
14	8.5	35	31	52	71	*152	65	74	28	13	32	7.5
15	8.0	60	41	56	66	132	74	63	28	12	23	7.5
16	7.5	63	40	68	65	120	69	58	25	*10	18	13
17	7.0	71	34	84	85	109	62	52	25	10	15	13
18	6.6	58	47	91	168	103	*55	52	31	9.0	14	11
19	6.6	47	119	92	134	98	52	51	28	9.6	12	9.6
20	6.6	41	82	83	109	132	50	60	25	9.0	10	11
21	6.1	37	231	82	98	126	46	126	22	9.0	9.0	10
22	6.6	35	240	69	92	109	44	103	22	8.0	29	9.0
23	7.0	36	155	145	84	109	43	71	24	8.0	28	8.5
24	8.0	40	114	143	76	120	42	58	22	7.8	24	*8.5
25	17	44	98	98	76	129	43	55	22	7.5	17	8.5
26	22	55	92	118	71	109	60	*86	20	7.5	14	8.0
27	19	65	87	183	71	98	63	82	19	7.0	*12	7.5
28	16	53	71	155	71	87	153	63	19	6.6	10	7.5
29	15	45	66	153	71	82	161	53	20	5.6	9.6	7.0
30	14	42	71	117	-	79	109	48	23	7.0	9.0	6.6
31	12	-	82	94	-	76	-	46	-	5.6	9.0	-
Total	279.1	1,645	2,229	2,753	2,785	3,651	2,099	2,029	942	363.2	628.6	262.3
Mean	9.00	54.8	71.9	88.8	96.0	118	70.0	65.5	31.4	11.7	20.3	8.74
(†)	96.8	91.6	94.7	88.8	88.3	83.6	80.7	87.0	102.4	137.9	100.5	92.7

Calendar year 1951: Max 240 Min 4.2 Mean 49.1  
Water year 1951-52: Max 261 Min 4.1 Mean 53.7

Peak discharge (base, 190 cfs).--Dec. 21 (5:30 to 7:30 p.m.) 328 cfs (2.325 ft); Jan. 27 (4 to 7 a.m.) 193 cfs (1.945 ft); Mar. 12 (1:30 to 3:30 p.m.) 294 cfs (2.23 ft); Apr. 28 (5 to 8 p.m.) 200 cfs (1.96 ft).

\* Discharge measurement made on this day.

† Diversions, in millions of gallons, for supply of East Greenwich, North Kingston, Warwick, and U. S. Naval establishments. Diversion for calendar year 1951 was 1,066.7 and for water year 1952 was 1,144.9 millions of gallons. Records furnished by U. S. Navy and Kent County Water Authority.

## Pawcatuck River at Wood River Junction, R. I.

Location.--Lat 41°26'42", long. 71°40'53", on right bank at downstream side of bridge on Alton-Carolina road, 0.8 mile northeast of Wood River Junction, 1½ miles southwest of Carolina, Washington County, and 2.9 miles upstream from Wood River.

Drainage area.--100 sq mi.

Records available.--December 1940 to September 1952. Prior to October 1943, published as Charles River at Wood River Junction.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 40 ft (from topographic map).

Average discharge.--12 years, 168 cfs.

Extremes.--Maximum discharge during year, 686 cfs Mar. 14 (gage height, 4.69 ft); minimum, 29 cfs Oct. 4-7, 19; minimum daily, 30 cfs Oct. 6.  
1940-52: Maximum discharge, 786 cfs Mar. 22, 1948 (gage height, 5.12 ft); minimum, 7.4 cfs Oct. 10, 1947; minimum daily, 15 cfs Oct. 11, 1947.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow regulated by powerplant and mills above station.

Revisions (water years).--W 1051: Drainage area. W 1201: 1948.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	29	3.0	266
2.1	64	4.0	486
2.5	138	4.7	690

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	67	140	305	a390	276	310	325	229	106	41	112
2	49	77	140	305	a380	263	300	289	236	92	45	105
3	38	160	145	310	a385	263	295	261	226	80	88	113
4	34	192	129	*302	a400	258	284	239	216	88	101	95
5	39	205	127	313	a460	344	284	226	203	85	83	78
6	30	a195	145	325	a520	406	292	216	192	82	178	85
7	35	a190	150	300	484	486	287	210	174	80	252	85
8	54	a200	152	274	458	494	284	205	170	78	205	82
9	47	*a220	155	266	404	460	276	195	174	77	182	80
10	54	218	160	252	376	426	263	187	157	83	250	80
11	46	205	148	242	364	438	255	192	155	88	395	78
12	44	182	143	231	353	542	244	229	150	83	362	78
13	49	164	134	226	306	649	236	244	148	80	393	77
14	48	150	129	221	297	*672	242	250	123	87	362	75
15	56	157	123	223	283	587	255	247	129	76	297	74
16	48	162	131	229	274	502	263	231	125	72	247	92
17	47	170	136	223	282	444	261	213	143	68	221	103
18	44	174	131	250	351	413	252	206	125	62	197	90
19	32	172	172	261	362	398	239	205	129	53	174	84
20	39	160	177	274	397	416	223	208	127	63	160	77
21	40	148	319	282	404	418	213	269	106	74	150	85
22	50	138	467	269	372	416	205	282	116	*54	174	96
23	41	145	531	308	351	407	200	284	116	50	192	80
24	41	125	499	323	330	409	192	269	114	48	195	73
25	63	138	418	330	313	430	190	255	106	50	184	78
26	53	162	398	366	297	428	200	295	106	37	162	*74
27	69	167	562	426	289	411	210	292	105	41	131	47
28	70	164	315	507	279	386	276	279	92	59	131	53
29	81	164	302	559	284	360	313	266	95	47	118	77
30	64	160	302	a500	-	340	337	244	123	42	112	61
31	59	-	310	a450	-	323	-	231	-	42	112	-
Total	1,497	4,931	7,090	9,652	10,434	13,065	7,691	7,548	4,410	2,127	5,87	2,477
Mean	48.3	164	229	311	360	421	256	243	147	68.6	189	82.6
Cfsm	0.483	1.64	2.29	3.11	3.60	4.21	2.56	2.43	1.47	0.686	1.89	0.826
In.	0.56	1.85	2.64	3.59	3.88	4.86	2.86	2.81	1.64	0.79	2.18	0.82
Calendar year 1951: Max	531			Min 30		Mean 176	Cfsm 1.76	In. 23.94				
Water year 1951-52: Max	672			Min 30		Mean 210	Cfsm 2.10	In. 28.56				

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for Wood River at Hope Valley and other stations on nearby streams.

## Wood River at Hope Valley, R. I.

Location.--Lat 41°29'58", long. 71°42'57", on right bank 0.2 mile downstream from highway bridge at Hope Valley, Washington County, and 6.6 miles upstream from mouth.

Drainage area.--72.4 sq mi.

Records available.--August to December 1909, March 1941 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 65 ft (from topographic map). August to December 1909, staff gage at site 1,000 ft upstream at different datum.

Average discharge.--11 years, 136 cfs.

Extremes.--Maximum discharge during year, 972 cfs Dec. 22 (gage height, 6.29 ft); minimum, 28 cfs Oct. 7, Sept. 15; minimum daily, 28 cfs Sept. 15.  
1941-52: Maximum discharge, that of Dec. 22, 1951; minimum, 4.4 cfs Oct. 18, 1941; minimum daily, 10 cfs Oct. 13, 1941.

Flood in March 1936 reached a discharge of 1,540 cfs, by computation of flow over dam a quarter of a mile upstream from station.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Some regulation at low flow by mills and ponds above station; regulation greater prior to 1948.

Revisions (water years).--W 1201: 1948(P).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.8	23	3.0	252
2.0	43	4.0	444
2.2	70	5.0	624
2.5	128	6.0	885

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a33	68	159	a250	306	196	213	234	165	76	32	40
2	a45	101	151	a250	303	186	211	206	228	66	31	50
3	*33	294	144	a260	318	194	204	191	220	60	57	52
4	35	406	144	a260	341	184	196	178	198	55	50	47
5	35	295	146	259	446	273	196	168	181	55	46	42
6	31	234	178	261	*417	324	230	154	159	53	62	38
7	30	243	*201	239	355	299	223	149	144	50	80	33
8	36	364	186	213	316	278	211	141	131	50	70	31
9	42	324	178	213	297	261	201	125	121	51	56	32
10	42	250	176	201	280	256	191	126	123	59	77	34
11	46	206	170	191	291	366	181	128	128	67	121	34
12	46	178	162	178	282	679	176	172	121	66	92	32
13	44	159	154	176	248	*644	168	213	105	56	101	30
14	40	162	144	176	239	495	200	204	96	51	86	29
15	36	206	149	186	232	413	241	186	90	46	64	28
16	38	213	146	201	223	342	208	173	84	47	55	54
17	40	241	138	201	237	314	198	151	83	43	59	62
18	39	228	155	246	314	287	188	146	94	40	72	51
19	35	201	270	265	278	270	170	146	94	39	67	46
20	32	186	252	248	250	332	159	162	84	38	63	44
21	30	170	579	252	241	312	*151	248	78	35	59	39
22	29	154	883	237	234	299	144	245	78	36	138	36
23	30	144	593	398	225	278	141	198	83	39	90	38
24	36	146	a450	454	213	310	136	181	84	38	67	39
25	69	159	a370	351	211	318	136	170	83	33	59	38
26	80	191	a350	399	213	282	151	223	78	32	56	34
27	80	241	a300	601	198	261	165	211	47	30	53	32
28	52	211	a260	550	198	245	268	173	35	30	*52	51
29	50	191	a250	498	194	234	325	159	56	32	50	32
30	48	-	a250	413	-	223	265	144	80	33	44	35
31	48	-	a280	332	-	213	-	133	-	33	41	-
Total	1,290	6,342	7,928	8,939	7,900	9,558	5,848	5,436	3,351	1,438	2,050	1,163
Mean	41.6	211	256	288	272	308	195	175	112	46.4	66.1	36.8
Cfsm	0.575	2.91	3.54	3.98	3.76	4.25	2.69	2.42	1.55	0.641	0.913	0.536
In.	0.66	3.26	4.07	4.59	4.06	4.91	3.00	2.79	1.72	0.74	1.05	0.60

Calendar year 1951: Max 883 Min 29 Mean 165 Cfsm 2.28 In. 30.91  
Water year 1951-52: Max 883 Min 28 Mean 167 Cfsm 2.31 In. 31.45

Peak discharge (base, 550 cfs).--Dec. 22 (3 to 3:30 a.m.) 972 cfs (6.29 ft); Jan. 27 (10 to 11 a.m.) 646 cfs (5.10 ft); Mar. 12 (2 to 3 p.m.) 739 cfs (5.48 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Pawcatuck River at Wood River Junction.

## Pawcatuck River at Westerly, R. I.

Location.--Lat 41°23'01", long. 71°50'01", on left bank at Westerly, Washington County, 2.1 miles downstream from Shunock River.

Drainage area.--295 sq mi.

Records available.--November 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is at mean sea level (from topographic map).

Average discharge.--12 years, 501 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 1,960 cfs Dec. 22 (gage height, 6.85 ft); maximum gage height, 7.74 ft Nov. 3 (backwater from tide); minimum daily discharge, 74 cfs July 26.

1940-52: Maximum discharge, 2,560 cfs Mar. 20, 1948 (gage height, 7.35 ft); maximum gage height, 9.32 ft Sept. 14, 1944 (backwater from tide); minimum daily discharge, 25 cfs Aug. 17, 1941.

Flood in March 1936 reached a discharge of 3,150 cfs, by computation of flow over dam 1½ miles upstream from station. Maximum stage known, 15.0 ft Sept. 21, 1938 (due to hurricane tidal wave), from information by local residents.

Remarks.--Records good. Regulation at low flow by mills above station. Diversion above station for municipal supply of Westerly.

Revisions.--W 1051: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	233	540	960	1,350	697	830	954	641	310	104	215
2	114	248	490	940	1,200	683	802	889	753	275	77	300
3	*116	716	470	980	1,250	683	795	767	774	229	128	225
4	112	<u>1,100</u>	450	*1,010	1,400	855	767	690	<u>725</u>	233	195	225
5	114	<u>992</u>	<u>440</u>	1,020	1,450	<u>888</u>	732	648	683	207	237	198
6	87	760	520	1,080	*1,500	1,170	774	592	641	192	346	128
7	77	669	*600	1,050	<u>1,440</u>	1,330	802	564	564	180	613	140
8	138	934	571	895	1,320	1,290	767	544	518	188	578	225
9	139	*928	544	862	1,190	1,230	725	518	530	192	466	184
10	176	830	564	823	1,120	1,180	697	<u>472</u>	504	184	478	158
11	165	697	537	767	1,070	1,260	648	492	472	192	862	154
12	119	610	511	697	1,030	1,820	620	620	466	207	895	148
13	107	520	485	662	966	<u>1,860</u>	592	732	446	215	973	86
14	113	500	446	<u>869</u>	809	*1,850	648	718	378	184	<u>940</u>	<u>131</u>
15	154	606	485	662	836	1,730	711	683	327	199	816	165
16	203	660	524	683	788	1,540	746	641	378	158	669	199
17	195	730	495	693	795	1,590	697	571	366	182	518	215
18	122	700	518	781	973	1,220	648	550	384	154	504	215
19	120	660	830	882	1,040	1,130	606	564	360	116	440	192
20	99	600	875	902	999	1,190	571	557	366	97	402	176
21	84	540	1,380	914	986	1,240	*550	788	332	134	332	172
22	106	480	1,930	869	973	1,170	530	869	305	*151	511	195
23	117	480	<u>1,910</u>	1,020	895	1,170	504	830	305	125	550	168
24	131	450	1,770	1,200	843	1,200	492	725	354	113	482	168
25	148	500	1,540	1,190	816	1,270	<u>478</u>	683	327	122	472	151
26	172	620	1,450	1,210	781	1,230	511	843	295	74	408	*151
27	211	710	1,310	1,740	760	1,150	550	*908	275	<u>113</u>	338	131
28	211	660	1,130	1,850	732	1,060	874	830	211	109	*290	113
29	255	620	1,020	<u>1,890</u>	718	980	<u>1,100</u>	732	184	116	275	158
30	<u>232</u>	580	947	<u>1,750</u>	-	821	<u>1,060</u>	648	<u>280</u>	120	233	151
31	154	-	973	1,550	-	882	-	613	-	109	211	-
Total	4,397	19,331	26,255	32,171	30,030	37,069	20,827	21,215	13,144	5,160	14,353	5,250
Mean	142	644	847	1,038	1,036	1,196	694	684	438	166	463	175
(†)	45.8	43.4	47.1	47.3	45.9	46.3	43.1	48.2	55.4	78.0	58.9	48.9

Adjusted for diversion

Mean	144	647	849	1,040	1,038	1,198	696	687	441	170	466	176
Cfs/m	0.488	2.19	2.88	3.53	3.52	4.06	2.38	2.33	1.49	0.576	1.58	0.603
In.	0.56	2.45	3.32	4.07	3.79	4.68	2.63	2.68	1.67	0.67	1.82	0.67

	Observed				Adjusted			
Calendar year 1951:	Max	1,930	Min	70	Mean	558	Mean	560
Water year 1951-52:	Max	1,930	Min	74	Mean	628	Mean	629
							Cfs/m	1.90
							Cfs/m	2.13
							In.	25.77
							In.	29.01

\* Discharge measurement made on this day.

† Diversion for municipal supply of Westerly, in millions of gallons. Records furnished by Westerly Board of Water Commissioners.

Note.--No gage-height record Nov. 12-14, Nov. 16 to Dec. 7, Jan. 30 to Feb. 6; discharge estimated on basis of 2 discharge measurements, weather records, recorded range in stage, and records for Pawcatuck River at Wood River Junction and Wood River at Hope Valley.



## Great Brook at Poquonock Bridge, Conn.

Location.--Lat 41°20'57", long. 72°02'17", in midchannel on upstream side of weir-gate structure, 800 ft downstream from Groton Reservoir dam, a quarter of a mile upstream from highway bridge on U. S. Highway 1 at head of Poquonock River, a quarter of a mile northwest of Poquonock Bridge, New London County, and 2.3 miles east of Groton.

Drainage area.--14.3 sq mi.

Records available.--January 1946 to September 1952.

Gage.--Point gage above three sharp-crested weirs; gage read three times daily. Venturi meters at filter plant to measure diversion and wash water. Staff gages on Groton and Pohegnut Reservoirs and Smith Lake to determine changes in contents. Datum of point gage is 2.78 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 23.9 cfs.

Remarks.--Records adjusted for change in contents in Groton and Pohegnut Reservoirs and Smith Lake, and for diversion for water supply of the borough of Groton.

Cooperation.--Venturi-meter records and gage readings furnished by the borough of Groton, Department of Utilities.

Monthly discharge, of water year October 1951 to September 1952

Month	Runoff (millions of gallons)	Mean		Discharge per square mile		Runoff in inches
		Millions of gallons per day	Cubic feet per second	Millions of gallons per day	Cubic feet per second	
October.....	113.1	3.65	5.65	0.255	0.395	0.46
November.....	848.4	21.6	33.4	1.51	2.34	2.61
December.....	841.0	27.1	41.9	1.90	2.94	3.39
Calendar year 1951....	6,167.1	16.9	26.1	1.18	1.83	24.84
January.....	1,108.7	35.8	55.4	2.50	3.87	4.46
February.....	932.4	32.2	49.8	2.25	3.48	3.75
March.....	1,133.1	36.6	56.6	2.56	3.96	4.56
April.....	609.9	20.3	31.4	1.42	2.20	2.46
May.....	891.3	28.8	44.6	2.01	3.11	3.58
June.....	453.9	15.1	23.4	1.06	1.64	1.83
July.....	119.8	3.86	5.97	.270	.418	.48
August.....	335.0	10.8	16.7	.755	1.17	1.35
September.....	89.3	2.98	4.61	.208	.322	.36
Water year 1951-52....	7,275.9	19.9	30.8	1.39	2.15	29.29

## Willimantic River near South Coventry, Conn.

Location.--Lat 41°45'02", long. 72°15'58", on left bank 700 ft upstream from highway bridge, 1 mile downstream from Mill Brook, 2.4 miles southeast of South Coventry, Tolland County, 2.8 miles upstream from Hop River, and at mile 6.3.

Drainage area.--121 sq mi.

Records available.--September 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 239.05 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--21 years, 206 cfs.

Extremes.--Maximum discharge during year, 1,800 cfs Dec. 21 (gage height, 7.56 ft); minimum, 5.2 cfs Oct. 7 (gage height, 1.74 ft); minimum daily, 7.1 cfs Oct. 7.  
1931-52: Maximum discharge, 15,500 cfs Sept. 21, 1938 (gage height, 18.08 ft, from floodmarks), by computation of peak flow over dam at Eagleville, 3 miles above station, prior to its failure, adjusted for flow from intervening area; minimum, 2.0 cfs Aug. 21, 22, 1949 (gage height, 1.60 ft); minimum daily, 2.5 cfs Sept. 18, 1949.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by mills and reservoirs upstream from station.

Revisions (water years).--W 781: 1934(m), drainage area. W 851: 1935-36. W 1201: 1932(M,m), 1933-34, 1937, 1939-42.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 11

Mar. 12 to Sept. 30

1.8	6.6	3.0	115	1.9	11	4.0	300
1.9	9.6	3.5	204	2.2	25	5.0	580
2.0	14	4.0	315	2.5	49	7.0	1,360
2.2	25	5.0	610	3.0	109		
2.5	50	6.5	1,190				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	109	200	410	410	182	288	430	642	131	*44	72
2	46	209	185	410	500	163	285	350	1,160	109	17	306
3	38	647	204	410	530	196	282	312	738	102	13	230
4	47	855	192	340	592	191	261	285	460	78	16	144
5	20	500	202	300	645	229	397	282	375	70	39	112
6	8.5	315	322	281	500	254	790	260	338	64	126	97
7	7.1	368	310	273	425	285	565	251	325	99	181	46
8	97	592	254	b230	365	252	415	236	275	124	118	82
9	141	425	249	237	365	222	350	216	251	36	77	52
10	111	292	328	229	352	252	325	223	195	103	363	78
11	93	243	*256	b210	380	793	298	199	200	628	698	68
12	44	236	225	b195	380	1,340	255	490	176	285	294	67
13	61	221	208	b195	275	895	249	480	159	158	206	56
14	63	226	170	*228	b255	668	446	358	123	122	150	16
15	108	345	172	234	b230	505	550	*288	115	111	119	64
16	89	340	b160	352	b200	430	505	257	134	77	99	70
17	49	365	b150	328	238	368	375	227	141	86	322	65
18	45	290	b220	491	288	362	325	227	349	83	284	66
19	47	258	b440	485	b270	375	274	263	325	62	172	71
20	75	225	365	440	259	430	251	253	205	18	124	76
21	19	204	864	515	250	505	251	350	141	63	113	56
22	46	166	1,190	365	241	490	233	312	102	62	124	85
23	55	192	645	869	217	520	230	245	*145	51	113	75
24	45	255	470	645	201	632	*210	200	127	53	77	70
25	145	260	395	410	232	535	238	227	113	51	95	70
26	194	352	395	708	219	460	375	375	100	55	93	68
27	125	360	328	1,030	*214	*430	415	312	104	15	76	52
28	94	280	b285	910	209	368	770	242	89	47	71	18
29	117	242	277	715	200	358	842	212	59	50	84	73
30	98	214	302	485	-	312	580	215	120	53	67	67
31	93	-	425	b395	-	300	-	261	-	44	23	-
Total	2,282.6	9,606	10,386	13,325	9,442	13,322	11,630	8,768	7,816	3,090	4,398	2,486
Mean	73.6	320	335	430	325	430	368	263	261	99.7	142	82.9
Cfs/m	0.608	2.64	2.77	3.55	2.69	3.55	3.21	2.34	2.16	0.824	1.17	0.685
In.	0.70	2.94	3.19	4.09	2.90	4.09	3.58	2.70	2.41	0.95	1.35	0.76

Calendar year 1951: Max 1,870 Min 5.4 Mean 255 Cfs/m 2.11 In. 28.57  
Water year 1951-52: Max 1,340 Min 7.1 Mean 264 Cfs/m 2.18 In. 29.66

Peak discharge (base, 900 cfs).--Nov. 3 (9 p.m.) 1,160 cfs (6.46 ft); Dec. 21 (5:30 p.m.) 1,800 cfs (7.56 ft); Jan. 23 (7 a.m.) 970 cfs (5.98 ft); Jan. 27 (9:30 a.m.) 1,070 cfs (6.27 ft); Mar. 11 (10:30 p.m.) 1,670 cfs (7.35 ft); Apr. 28 (9 p.m.) 990 cfs (6.15 ft); June 2 (11 a.m.) 1,240 cfs (6.76 ft); Aug. 11 (11 p.m.) 1,170 cfs (6.60 ft).

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

## Hop River near Columbia, Conn.

Location.--Lat 41°43'39", long. 72°18'10", on right bank 1,500 ft downstream from abandoned mill and dam at village of Hop River, 2 miles north of Columbia, Tolland County, and 4.2 miles upstream from mouth.

Drainage area.--76.2 sq mi.

Records available.--September 1932 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 249.25 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--20 years, 125 cfs.

Extremes.--Maximum discharge during year, 1,860 cfs Mar. 12 (gage height, 10.20 ft); minimum, 5.6 cfs Aug. 1 (gage height, 2.62 ft); minimum daily, 6.0 cfs Oct. 1, July 30, Aug. 1.

1932-52: Maximum discharge, 6,450 cfs Sept. 21, 1938 (gage height, 16.25 ft, from floodmarks), by computation of peak flow over dam a quarter of a mile upstream from station; minimum, 2.4 cfs Aug. 19, 1939 (gage height, 2.55 ft); minimum daily, 2.6 cfs Aug. 28, 1949; minimum gage height, 2.49 ft Aug. 3, 1936.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Infrequent regulation at low flow.

Revisions (water years).--W 781: 1933(M), drainage area. W 1111: 1947(m). W 1301: 1935-36(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 2)

Oct. 1 to June 1

June 2 to Sept. 30

2.6	4.7	5.0	286	2.6	4.7	4.0	137
2.8	15	7.0	750	2.8	15	5.0	314
3.2	40	8.2	1,110	3.0	27	7.1	825
3.8	100			3.5	72		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	97	125	224	242	110	140	286	492	30	6.0	23
2	6.5	160	120	216	290	105	137	233	817	26	6.9	140
3	6.5	424	110	216	340	100	139	195	458	23	8.4	82
4	6.9	624	103	187	380	95	127	169	324	21	7.9	53
5	6.5	345	120	174	380	140	286	150	264	20	6.9	40
6	7.4	242	208	164	340	170	*675	137	218	17	26	32
7	18	306	176	147	300	190	365	133	173	15	56	26
8	42	*438	157	b133	240	170	277	122	127	14	40	22
9	36	268	166	129	230	160	233	110	105	14	30	20
10	27	200	178	118	220	170	194	103	99	73	173	17
11	26	170	*133	110	210	550	170	109	82	246	414	15
12	32	144	118	110	250	1,600	150	377	70	110	149	14
13	30	*127	103	105	170	700	136	305	61	79	137	13
14	26	126	89	*100	160	450	325	224	53	58	90	12
15	22	224	100	127	140	300	402	*192	46	40	59	12
16	21	200	b90	233	130	240	432	174	41	29	49	14
17	18	250	b80	187	140	200	286	136	36	23	136	14
18	17	195	b180	337	180	180	224	137	61	19	99	12
19	15	158	625	305	*170	190	190	134	51	17	62	15
20	15	137	513	277	b155	240	163	133	45	14	48	35
21	12	120	1,090	296	141	310	133	250	38	12	40	24
22	12	104	928	200	135	300	121	189	36	12	49	19
23	12	106	450	704	125	290	116	153	*41	11	40	17
24	14	148	325	475	120	360	*106	129	34	9.5	31	16
25	*98	174	250	296	130	330	133	144	30	8.4	26	15
26	82	224	233	472	125	*268	286	224	27	7.9	22	14
27	55	242	b190	725	120	224	277	180	27	7.9	20	14
28	52	164	174	562	120	200	690	137	26	7.9	18	14
29	65	148	154	450	115	178	652	123	27	7.9	17	13
30	58	134	170	b305	-	162	395	172	36	6.0	15	12
31	51	-	242	b260	-	147	-	172	-	6.5	14	-
Total	885.8	6,399	7,700	8,344	5,778	8,829	7,938	5,432	3,945	985.0	1,896.1	769
Mean	28.6	213	249	269	199	285	255	175	132	31.8	61.2	25.6
Cfs/m	0.375	2.80	3.25	3.53	2.61	3.74	3.48	2.30	1.73	0.417	0.803	0.336
In.	0.43	3.12	3.75	4.07	2.82	4.31	3.88	2.65	1.93	0.48	0.93	0.37

Calendar year 1951: Max 1,390 Min 5.6 Mean 149 Cfs/m 1.96 In. 26.60  
Water year 1951-52: Max 1,600 Min 6.0 Mean 161 Cfs/m 2.11 In. 28.74

Peak discharge (base, 900 cfs).--Nov. 4 (12:30 a.m.) 900 cfs (7.47 ft); Dec. 21 (5 p.m.) 1,740 cfs (9.92 ft); Jan. 23 (2 p.m.) 990 cfs (7.77 ft); Mar. 12 (time unknown) 1,860 cfs (10.20 ft); Apr. 28 (7:30 p.m.) 990 cfs (7.81 ft); June 2 (9 a.m.) 935 cfs (7.46 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Feb. 2-19, Feb. 22 to Mar. 25; discharge estimated on basis of recorded range in stage, weather records, engineer's notes, and records for nearby streams.

## Safford Brook near Woodstock Valley, Conn.

Location.--Lat 41°55'35", long. 72°03'37", on right bank at downstream side of town road bridge, 0.3 mile downstream from Bradford Brook, 0.3 mile upstream from mouth, 1.2 miles southeast of Woodstock Valley, Windham County, and 2 miles southwest of West Woodstock.

Drainage area.--4.08 sq mi.

Records available.--June 1950 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 522.92 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 360 cfs Nov. 7 (gage height, 5.14 ft); minimum, 0.06 cfs July 30, 31 (gage height, 1.21 ft).  
1950-52: Maximum discharge, 390 cfs Feb. 7, 1951 (gage height, 5.31 ft); minimum, that of July 30, 31, 1952.

Remarks.--Records good.

Rating tables, water year 1951-52, except periods of ice effect and backwater from log (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20					Dec. 21 to Sept. 30				
1.2	0.2	1.7	4.1		1.2	0.05	2.0	10	
1.3	.55	2.0	10		1.3	.2	2.5	28	
1.5	1.8				1.4	.6	3.0	58	
					1.5	1.2	3.5	103	
					1.6	2.1	4.1	175	
					1.7	3.4			

Note.--Same as following table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	13	5.8	15	b12	b4.4	7.4	12	65	1.2	0.4	2.7
2	.45	11	5.6	14	22	b4.0	7.6	9.5	81	.8	.15	7.6
3	.45	84	5.1	12	20	b3.4	7.8	8.3	22	.5	.2	2.2
4	.45	39	4.8	b9.8	32	5.4	6.9	7.1	12	.45	.15	1.2
5	.5	16	7.2	8.6	b28	8.1	34	6.2	9.5	.35	.8	.8
6	.5	9.6	24	8.3	17	10	44	6.0	7.8	.3	5.2	.6
7	1.0	c116	12	b7.4	12	11	18	5.8	7.1	.2	13	.5
8	9.6	c50	9.1	b6.9	b11	9.5	12	4.9	4.7	.2	3.4	.45
9	3.8	c21	11	6.4	12	8.3	10	4.4	3.4	.2	1.6	.4
10	2.0	12	11	6.0	9.8	8.3	8.8	4.0	3.0	13	24	.35
11	1.8	9.3	7.6	5.8	14	79	7.6	4.7	2.5	21	19	.3
12	3.8	7.6	6.6	b5.1	b12	82	6.9	30	2.5	3.3	4.4	.3
13	2.6	*6.8	*5.8	5.3	b8.3	39	6.4	12	1.9	1.5	4.5	.25
14	1.7	9.8	4.8	5.3	b6.2	27	31	8.1	1.5	.9	2.4	.2
15	1.5	21	5.3	8.9	4.9	b18	25	*6.9	1.2	.55	1.5	.25
16	1.4	15	b4.9	*19	4.4	b13	21	6.4	1.1	.4	2.6	.6
17	1.2	21	b4.4	b13	4.9	b11	*12	4.9	6.2	.3	.31	.4
18	1.2	12	b15	40	b7.1	b11	9.5	6.7	17	.25	6.8	.3
19	1.1	8.5	48	21	6.0	12	8.1	6.0	*3.8	.2	2.8	3.2
20	1.0	6.8	b40	24	b5.5	19	7.1	8.0	2.0	.15	1.6	4.5
21	1.0	*5.5	166	22	5.3	26	5.8	19	1.4	.15	1.2	1.6
22	.95	5.1	48	21	5.3	25	5.3	11	1.4	.15	1.8	1.0
23	.95	6.0	b21	*64	b4.9	35	5.1	6.9	1.4	.15	1.3	.8
24	1.0	11	12	b23	b4.7	32	4.7	5.1	1.1	.1	1.0	.8
25	9.3	8.7	b9.8	b16	b4.5	*21	9.2	8.3	.8	.1	.8	.7
26	4.6	18	9.3	56	*b4.4	16	16	14	.65	.1	.6	.6
27	2.7	14	b8.3	54	4.4	14	14	8.3	.55	.1	.5	.6
28	2.5	b7.2	b7.1	36	4.4	11	76	5.1	.5	.1	.5	.55
29	2.8	6.4	6.4	b24	4.4	9.5	34	4.7	2.3	.1	.45	.5
30	2.2	6.0	10	b15	-	8.3	18	6.9	3.1	.1	.4	.45
31	2.0	-	18	b12	-	7.6	-	6.2	-	.1	.4	-
Total	66.45	577.3	551.9	584.8	291.4	586.8	479.2	257.4	268.40	47.00	134.45	34.70
Mean	2.14	19.2	17.8	18.9	10.0	18.9	16.0	8.30	8.95	1.52	4.34	1.16
Cfsm	0.525	4.71	4.36	4.63	2.45	4.63	3.92	2.03	2.19	0.373	1.06	0.284
In.	0.61	5.26	5.03	5.34	2.64	5.34	4.37	2.34	2.44	0.43	1.22	0.32

Calendar year 1951: Max 166 Min 0.3 Mean 10.2 Cfsm 2.50 In. 33.78  
Water year 1951-52: Max 166 Min 0.1 Mean 10.6 Cfsm 2.60 In. 35.34

Peak discharge (base, 120 cfs).--Nov. 3 (1 to 2:30 p.m.) 150 cfs (3.92 ft); Nov. 7 (1 p.m.) 360 cfs (5.14 ft); Dec. 21 (8 a.m.) 320 cfs (4.96 ft); Mar. 11 (8 p.m.) 196 cfs (4.24 ft); Apr. 28 (11 a.m.) 121 cfs (3.67 ft); June 1 (11:30 p.m.) 170 cfs (4.07 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

c Backwater from log on control.

## Mount Hope River near Warrenville, Conn.

Location.--Lat 41°50'37", long. 72°10'10", on left bank 250 ft downstream from Knowlton Brook, 700 ft upstream from bridge on State Highway 89, 1½ miles south of Warrenville, Windham County, and 3¼ miles southwest of Ashford.

Drainage area.--29.1 sq mi.

Records available.--July 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 335.57 ft above mean sea level, datum of 1929.

Average discharge.--12 years, 46.8 cfs.

Extremes.--Maximum discharge during year, 990 cfs Dec. 21 (gage height, 7.15 ft), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 2.8 cfs Oct. 1; minimum gage height, 1.13 ft July 30, 31, Aug. 1.  
1940-52: Maximum discharge, 1,170 cfs Feb. 7, 1951 (gage height, 7.79 ft), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 0.8 cfs Sept. 27, 28, 1943.

Flood of September 1938 reached a stage of about 14.5 ft, from floodmarks.

Remarks.--Records good.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5,  
Aug. 11 to Sept. 30

Apr. 6 to Aug. 10

1.1	2.6	2.0	59	1.1	2.6	2.0	64
1.2	5.4	3.0	186	1.2	5.3	3.0	198
1.4	14	5.7	646	1.3	9.6	5.3	573
1.6	25			1.5	21		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	65	43	96	102	b38	52	106	348	20	4.4	24
2	3.1	67	42	104	136	b38	54	87	570	14	4.4	67
3	3.6	366	38	98	b125	b36	53	77	228	12	5.0	33
4	4.4	244	36	b85	161	33	48	70	138	9.6	4.7	21
5	4.4	110	52	b75	163	56	145	63	120	9.1	8.7	16
6	5.4	69	120	b70	110	67	224	59	96	8.1	43	14
7	4.4	228	82	b62	88	72	118	57	97	6.8	80	11
8	4.2	229	64	b60	b78	61	88	52	70	6.4	32	9.9
9	21	110	72	b55	83	56	76	49	55	6.4	20	9.0
10	13	77	76	b52	72	59	70	45	48	113	173	8.7
11	12	64	58	b49	84	314	64	51	42	188	167	8.3
12	23	54	b45	b45	b80	436	58	193	38	53	54	7.9
13	15	*49	*b38	b43	b62	215	55	115	54	27	51	7.2
14	12	57	b34	b43	b52	160	183	77	29	19	30	7.2
15	10	102	b37	57	46	119	174	*66	26	14	21	7.5
16	9.4	89	b34	*86	44	b92	150	62	23	11	23	13
17	8.7	116	b31	b67	52	82	*103	51	39	9.1	189	9.0
18	8.3	78	b70	148	63	79	85	59	128	8.1	62	7.9
19	7.9	61	194	110	b60	80	73	54	*50	7.2	32	20
20	7.5	50	136	116	b56	115	65	62	34	6.4	24	32
21	7.2	b44	636	113	53	130	57	114	26	5.6	20	17
22	6.9	b42	351	113	49	110	54	91	28	5.6	27	13
23	6.9	44	b160	336	46	129	52	62	28	5.3	20	12
24	7.9	70	113	151	b48	135	49	50	22	4.7	16	11
25	74	62	b93	b110	b48	*103	72	67	18	3.8	13	10
26	34	92	89	276	*b44	87	127	107	16	3.8	11	9.4
27	21	64	b85	320	b39	77	111	72	17	3.8	10	9.9
28	18	b68	b75	225	b38	68	344	51	14	3.8	9.0	8.7
29	18	49	b70	157	b38	62	248	47	28	3.8	9.0	7.9
30	15	b44	76	115	-	57	145	53	39	3.6	8.7	7.5
31	14	-	106	105	-	54	-	73	-	3.3	8.3	-
Total	440.8	2,874	3,156	3,542	2,120	3,220	3,197	2,242	2,447	595.3	1,180.2	460.0
Mean	14.2	95.8	102	114	73.1	104	107	72.3	81.6	19.2	38.1	15.3
Cfs/m	0.488	3.29	3.51	3.92	2.51	3.57	3.68	2.48	2.80	0.660	1.31	0.526
In.	0.56	3.67	4.05	4.52	2.71	4.12	4.11	2.86	3.12	0.76	1.51	0.59

Calendar year 1951: Max 636 Min 2.8 Mean 63.1 Cfs/m 2.17 In. 29.44  
Water year 1951-52: Max 636 Min 2.8 Mean 69.6 Cfs/m 2.39 In. 32.58

Peak discharge (base, 400 cfs).--Nov. 3 (2 p.m.) 684 cfs (5.94 ft); Nov. 8 (4:30 p.m.) 486 cfs (4.84 ft); Dec. 21 (11:30 a.m.) 990 cfs (7.15 ft); Jan. 23 (6:45 a.m.) 452 cfs (4.64 ft); Jan. 28 (3:30 p.m.) 452 cfs (4.65 ft); Mar. 11 (8:30 p.m.) 704 cfs (6.04 ft); Apr. 28 (12:30 p.m.) 486 cfs (4.75 ft); June 1 (11 p.m.) 865 cfs (6.73 ft); July 10 (9:30 p.m.) 520 cfs (5.00 ft); Aug. 10 (7:45 p.m.) 555 cfs (5.15 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## THAMES RIVER BASIN

Mansfield Hollow Reservoir at Mansfield Hollow, Conn.

Location.--Lat 41°45'22", long. 72°10'57", on Natchaug River at Mansfield Hollow, 0.2 mile downstream from Mount Hope River, 3½ miles northeast of Willimantic, Windham County, and at mile 5.2.

Drainage area.--159 sq mi.

Records available.--March to September 1952.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Remarks.--Reservoir completed in March 1952 for flood control, has usable capacity of 2,260,000,000 cu ft.

Cooperation.--Records furnished by Corps of Engineers.

Monthly elevation and contents, March to September 1952

Date	Elevation (feet)†	Contents (millions of cubic feet)	Change in contents during month (millions of cubic feet)
Feb. 28.....	-	0	-
Mar. 31.....	200.6	1.8	+1.8
Apr. 30.....	202.4	7.9	+6.1
May 31.....	200.4	1.5	-6.4
June 30.....	200.1	1.0	-0.5
July 31.....	199.2	.2	-0.8
Aug. 30.....	199.5	.4	+0.2
Sept. 30.....	199.5	.4	0

† Elevation at 12 p.m.

## Natchaug River at Willimantic, Conn.

Location.--Lat 41°43'14", long. 72°11'52", on right bank 200 ft downstream from New York, New Haven & Hartford Railroad bridge, 500 ft upstream from bridge on U. S. Highway 6, 1 mile northeast of Willimantic, Windham County, 1.7 miles upstream from mouth, and 4 miles downstream from Mount Hope River.

Drainage area.--169 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 150.31 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--22 years, 294 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,950 cfs June 2 (gage height, 8.17 ft); minimum, 3.9 cfs Oct. 1 (gage height, 2.03 ft); minimum daily, 3.9 cfs Oct. 1.  
1930-52: Maximum discharge, 32,000 cfs Sept. 21, 1938 (gage height, 16.39 ft, from floodmarks), by computation of peak flow over dam 2 miles upstream from station; minimum, about 0.3 cfs Aug. 6, 1937; minimum daily, 2.3 cfs Sept. 11, 12, 1943.

Remarks.--Records excellent. City of Willimantic diverts an average of about 1,000,000 gal of water a day for municipal supply from reservoir 2 miles above station. Operation of water wheels at this location cause diurnal fluctuation at low flow. Since March 1952, flow regulated by Mansfield Hollow Reservoir (see preceding page).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1				June 2 to Sept. 3	
2.0	2.4	2.6	91	2.0	4.0
2.1	8.8	3.0	212	2.1	10
2.2	19	5.0	1,130	2.2	19
2.4	48	7.5	2,510		

Note.--Same as preceding table above 2.2 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	144	266	600	590	235	371	740	776	146	*45	53
2	4.5	458	254	574	695	208	362	596	2,440	105	8.1	261
3	25	698	242	560	850	235	368	524	2,210	90	35	283
4	20	1,710	231	488	808	223	348	466	1,120	72	36	164
5	59	1,060	250	461	1,000	308	434	416	762	72	38	114
6	21	592	515	438	800	443	*1,200	380	641	67	77	93
7	60	596	564	371	718	488	905	362	578	72	284	79
8	94	*1,650	434	290	546	434	636	335	484	41	254	73
9	159	1,120	389	330	533	380	533	308	384	16	135	78
10	112	650	461	308	515	376	470	278	350	80	220	77
11	93	497	*389	280	497	746	425	282	286	825	1,130	31
12	94	398	335	270	578	2,360	380	700	254	540	627	57
13	118	335	290	280	360	1,640	353	785	227	244	359	30
14	95	308	205	286	335	1,100	542	*533	194	150	258	51
15	78	488	242	299	290	830	930	420	174	105	165	41
16	75	515	225	*484	278	650	880	384	161	89	125	43
17	77	614	185	448	304	569	672	330	142	74	447	70
18	80	538	208	618	358	520	542	312	448	71	524	35
19	81	416	618	762	380	515	466	348	425	74	278	81
20	17	335	630	610	*353	*592	412	322	258	19	175	133
21	68	278	1,360	740	353	785	358	551	180	67	130	145
22	79	250	2,510	488	322	718	328	546	158	23	140	108
23	16	258	1,100	288	672	*308	402	*187	37	139	96	
24	*62	312	860	1,290	255	880	290	312	142	42	112	88
25	125	412	650	695	282	740	299	290	123	6.9	95	81
26	258	425	582	830	274	632	628	510	109	52	81	77
27	164	569	490	1,680	270	556	623	461	102	26	76	75
28	125	376	355	1,480	254	502	1,070	340	95	31	74	75
29	129	344	402	1,200	254	452	1,680	268	87	27	77	77
30	107	286	443	762	-	416	1,080	278	180	27	22	41
31	94	-	592	592	-	384	-	312	-	29	64	-
Total	2,593.4	16,612	16,757	19,602	13,331	19,589	17,869	13,089	13,637	3,319.9	6,230.1	2,710
Mean	83.7	554	541	632	460	632	596	422	455	107	201	90.3
(f)	0	0	0	0	0	+0.7	+2.4	-2.4	-0.2	-0.3	-0.1	0

Adjusted for change in reservoir contents

	Observed				Adjusted			
Calendar year 1951:	Max	2,590	Min	3.9	Mean	365	Mean	365
Water year 1951-52:	Max	2,510	Min	3.9	Mean	397	Cfsm	2.16
							In.	29.32
							Cfsm	2.35
							In.	32.00

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Mansfield Hollow Reservoir, furnished by Corps of Engineers.

## Shetucket River near Willimantic, Conn.

Location.--Lat 41°42'01", long. 72°10'57", on right bank at downstream side of Bingham Bridge, 500 ft upstream from New York, New Haven & Hartford Railroad bridge, 500 ft downstream from Potash Brook, 1.3 miles downstream from confluence of Willimantic and Natchaug Rivers, 1½ miles southeast of Willimantic, Windham County, and at mile 16.5.

Drainage area.--401 sq mi.

Records available.--April 1904 to December 1905 (monthly discharge only, in Water-Supply Paper 1301), October 1919 to September 1921 and September 1928 to September 1933 (published as "at South Windham"), and October 1933 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 131.40 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Apr. 4, 1904, to Dec. 31, 1905, chain gage at about same site at different datum. October 1919 to Sept. 30, 1921, and Sept. 1, 1928, to Sept. 30, 1933, water-stage recorder at site 1½ miles downstream at different datum.

Average discharge.--27 years (1905, 1919-21, 1928-52), 689 cfs.

Extremes.--Maximum discharge during year, 6,080 cfs Dec. 22 (gage height, 9.30 ft); minimum, 28 cfs Oct. 1, 7 (gage height, 1.40 ft); minimum daily, 38 cfs Oct. 1.

1904-5, 1919-21, 1928-52: Maximum discharge, 52,200 cfs Sept. 21, 1938 (gage height, 27.6 ft, from floodmarks), from rating curve extended above 11,000 cfs on basis of computation of peak flow over Scotland and Baltic Dams, 5 and 9 miles downstream, respectively, adjusted for flow from intervening area; minimum, 15 cfs Aug. 29, 1949 (gage height, 1.34 ft); minimum daily, 19 cfs Aug. 22, Oct. 24, 1949; minimum gage height, 1.32 ft Oct. 20, 1935.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow regulated by mills on Willimantic River and on Natchaug River by pumping for municipal supply of city of Willimantic, and by Mansfield Hollow Reservoir (see p. 202).

Revisions (water years).--W 781: 1934(m). W 801: 1935. W 1201: 1905(M), 1920-21, 1931-32, 1934-35(M), 1937(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	360	615	1,300	1,300	570	a870	1,620	1,980	356	*108	144
2	72	880	570	1,270	1,580	493	a860	1,270	4,730	272	58	740
3	78	1,610	565	1,240	1,880	560	a850	1,090	3,850	236	75	685
4	86	3,670	535	1,090	1,880	545	a800	970	2,120	202	71	418
5	105	2,110	580	970	2,300	700	a950	880	1,540	189	90	311
6	61	1,210	1,060	940	1,790	880	a2,750	820	1,300	172	212	252
7	77	1,250	1,080	820	1,510	1,000	2,080	795	1,180	195	524	174
8	214	*2,940	880	690	1,240	910	1,440	740	1,000	222	461	197
9	352	1,940	820	740	1,180	795	1,210	680	820	92	282	179
10	269	1,210	970	695	1,150	820	1,060	620	750	251	606	196
11	228	940	795	645	1,120	2,020	940	620	665	1,770	2,520	138
12	195	795	695	625	1,300	5,450	850	1,630	580	1,040	1,200	161
13	252	700	615	625	838	3,540	795	1,800	520	550	795	119
14	203	660	*484	650	820	2,480	1,500	*1,240	434	395	596	101
15	199	1,030	506	695	710	1,800	2,040	970	399	290	404	127
16	189	1,090	470	*1,120	655	1,440	1,960	880	395	226	312	139
17	164	1,240	430	1,060	705	*1,240	1,440	750	378	206	899	163
18	154	1,090	525	1,480	850	1,120	1,150	720	822	196	1,000	136
19	150	880	1,440	1,720	880	1,120	1,000	795	910	178	580	206
20	127	735	1,300	1,400	795	1,270	850	745	805	82	401	a270
21	120	620	3,400	1,680	820	1,680	770	1,210	435	144	326	a240
22	128	545	5,210	1,120	765	1,580	710	1,150	344	120	359	a225
23	95	560	3,040	2,790	705	1,510	680	880	*406	118	345	a210
24	123	705	1,840	2,860	615	1,960	*645	700	364	120	252	a190
25	301	880	1,370	1,540	*670	1,760	670	670	314	81	247	a180
26	580	970	1,270	1,970	665	1,480	1,300	1,180	280	134	224	a170
27	382	1,440	1,060	3,740	645	1,300	1,400	1,060	79	194	a155	
28	291	680	850	3,240	815	1,180	2,470	795	246	58	185	a135
29	317	770	880	2,660	610	1,060	3,640	645	208	97	194	a185
30	280	660	940	1,720	-	940	2,390	720	357	100	139	a140
31	254	-	1,300	1,300	-	880	-	795	-	94	116	-
Total	6,084	34,170	36,105	44,395	30,593	44,083	39,870	29,440	28,196	8,295	13,775	6,686
Mean	.196	1,139	1,165	1,432	1,055	1,422	1,294	950	940	268	444	223
In.	0	0	0	0	0	+0.7	+2.4	-2.4	-0.2	-0.3	-0.1	0

Adjusted for change in reservoir contents

	Mean	Cfsm	In.	Mean	Cfsm	In.	Mean	Cfsm	In.	Mean	Cfsm	In.
196	196	1,139	1,165	1,432	1,055	1,423	1,331	948	940	268	444	223
0.489	0.489	2.84	2.91	3.57	2.63	3.55	3.32	2.36	2.34	0.668	1.11	0.556
0.56	0.56	3.17	3.36	4.12	2.84	4.09	3.70	2.72	2.61	0.77	1.28	0.62
				Observed				Adjusted				
Calendar year 1951: Max 6,060				Min 38				Mean 841				
Water year 1951-52: Max 5,450				Min 38				Mean 879				
								Mean 841 Cfsm 2.10 In. 28.50				
								Mean 879 Cfsm 2.19 In. 29.84				

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Mansfield Hollow Reservoir, furnished by Corps of Engineers.

‡ No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for tributary streams.



## Little River near Hanover, Conn.

Location.--Lat 41°40'18", long. 72°03'10", in Windham County, on left bank 800 ft upstream from bridge on town road, 0.7 mile downstream from Peck Brook, 2.3 miles northeast of Hanover, New London County, and 6.5 miles upstream from mouth.

Drainage area.--29.8 sq mi.

Records available.--July 1951 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 221.19 ft above mean sea level, datum of 1929.

Extremes.--1951: Maximum discharge during period July to September, 90 cfs Aug. 21 (gage height, 2.11 ft); minimum, 7.9 cfs Sept. 23 (gage height, 1.13 ft).  
1951-52: Maximum discharge during water year, 865 cfs Dec. 21 (gage height, 5.08 ft); minimum, 7.9 cfs Oct. 5-7; minimum gage height, 1.12 ft Aug. 2.

Remarks.--Records good.

Discharge, in cubic feet per second, 1951-52

1951											
Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	14	11	9	-	12	12	17	-	51	9.4
2	-	*16	15	10	-	12	10	18	-	42	8.8
3	-	15	15	11	-	35	9.7	19	-	29	8.8
4	-	13	14	12	-	33	9.7	20	-	22	8.5
5	-	12	12	13	-	26	9.4	21	-	62	8.2
6	-	12	12	14	-	21	9.1	22	-	39	8.2
7	-	10	16	15	-	17	9.4	23	-	27	10
8	-	10	15	16	-	24	10	24	-	21	15
Total											668
Mean											21.5
Cfsm											0.721
In.											0.85
The period:	Max 62			Min 8.2			Mean 16.3			Cfsm 0.547	
										In. 1.28	

Peak discharge (base, 250 cfs).--No peak above base.

\* Discharge measurement made on this day.

1951-52												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	42	56	93	b90	54	58	107	177	25	9.6	13
2	c8.2	*70	53	88	120	b51	57	88	560	22	10	26
3	c8.2	242	50	86	136	48	56	77	224	20	12	18
4	c8.2	*354	48	77	162	47	53	70	127	20	11	16
5	c7.9	132	51	76	197	35	79	64	97	18	12	14
6	c8.2	78	100	82	140	117	147	60	86	18	21	13
7	c8.5	234	85	67	109	125	100	58	78	17	26	12
8	33	513	74	b48	93	98	80	58	66	16	18	11
9	25	178	76	a60	94	89	71	51	59	18	18	11
10	18	117	80	a55	88	90	65	48	58	29	50	11
11	15	90	66	a50	101	303	62	51	53	90	136	11
12	20	76	58	a50	109	*572	56	178	48	37	40	11
13	18	68	53	a45	b77	235	53	129	42	25	45	10
14	16	69	*b44	a45	b66	175	110	*89	38	20	28	10
15	14	125	b50	*65	b84	138	118	75	37	18	21	10
16	14	114	b45	107	b58	109	107	89	36	17	19	12
17	13	140	b40	84	67	94	83	59	34	16	55	12
18	12	97	b75	144	89	88	70	64	57	14	31	11
19	c12	76	b170	117	b79	86	63	64	39	14	22	18
20	c11	65	b150	109	*b72	138	56	72	*34	13	18	33
21	c10	56	571	117	72	147	51	143	31	12	18	c18
22	c10	51	380	b84	89	114	48	94	33	13	26	c16
23	c8.7	54	b160	*331	65	109	*47	71	35	12	20	c14
24	c10	75	115	186	b59	120	45	60	31	12	17	c13
25	38	77	94	b112	b58	103	54	64	29	11	15	c12
26	31	118	b90	205	58	*88	107	90	26	11	14	c12
27	22	109	b80	292	57	78	104	75	26	11	14	c11
28	19	b72	b75	205	55	71	309	59	24	11	13	c11
29	20	85	70	171	54	67	260	50	26	11	13	c11
30	18	80	78	b105	-	63	151	48	34	10	12	c11
31	16	-	106	b90	-	59	-	51	-	9.6	12	-
Total	482.4	3,615	3,223	3,448	2,556	3,771	2,720	2,355	2,243	588.6	774.6	412
Mean	15.6	120	104	111	88.1	122	90.7	75.3	74.8	19.0	25.0	13.7
Cfsm	0.523	4.03	3.49	3.72	2.96	4.09	3.04	2.53	2.51	0.638	0.839	0.460
In.	0.60	4.50	4.02	4.29	3.19	4.72	3.39	2.92	2.80	0.74	0.97	0.51

Calendar year 1951: Max - Min - Mean - Cfsm - In. -  
Water year 1951-52: Max 572 Min 7.9 Mean 71.5 Cfsm 2.40 In. 32.65

Peak discharge (base, 250 cfs).--Nov. 4 (4 a.m.) 515 cfs (3.99 ft); Nov. 8 (4 a.m.) 780 cfs (4.82 ft); Dec. 21 (8:30 p.m.) 885 cfs (5.08 ft); Jan. 23 (12 m.) 405 cfs (3.60 ft); Jan. 26 (11:30 p.m.) 355 cfs (3.40 ft); Mar. 12 (2 a.m.) 795 cfs (4.90 ft); Apr. 28 (6 p.m.) 418 cfs (3.67 ft); June 2 (9 a.m.) 695 cfs (4.60 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

c Backwater from leaves or rocks on control.

## Quinebaug River at Westville, Mass.

Location.--Lat 42°04'23", long. 72°04'28", on right bank 350 ft upstream from highway bridge, 0.45 mile downstream from Breakneck Brook, 0.6 mile west of Westville, Worcester County, and 1¼ miles west of Southbridge.

Drainage area.--93.8 sq mi.

Records available.--July 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 537.66 ft above mean sea level, unadjusted (levels by Corps of Engineers).

Average discharge.--13 years, 150 cfs.

Extremes.--Maximum discharge during year, 827 cfs June 2, 3 (gage height, 5.66 ft); minimum daily, 22 cfs Sept. 20.  
1939-52: Maximum discharge, 1,500 cfs Mar. 22, 1948 (gage height, 6.93 ft); minimum daily, 2.2 cfs June 26, 1949.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by mills and reservoirs above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	17	3.5	170
2.2	23	4.0	266
2.5	47	5.0	563
3.0	100	5.7	845

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	111	165	308	363	125	280	449	353	144	76	62
2	55	138	159	340	351	125	276	357	788	128	56	185
3	55	334	175	340	371	170	273	306	804	78	35	165
4	29	483	196	319	409	168	259	268	676	58	36	150
5	*38	424	209	285	474	191	268	240	617	53	47	102
6	39	332	273	266	461	213	386	209	503	56	62	55
7	38	380	268	244	406	222	391	198	403	76	63	76
8	96	490	232	230	360	189	365	191	321	107	61	82
9	105	409	220	*215	325	191	330	170	268	82	55	62
10	118	338	*244	205	303	200	295	157	226	84	156	62
11	91	303	255	190	298	284	264	154	196	*106	244	62
12	88	271	240	185	*293	503	240	245	178	67	154	58
13	75	*255	218	175	225	552	224	280	157	74	136	50
14	74	266	172	175	230	503	264	271	140	66	108	32
15	69	298	115	182	210	433	316	238	152	39	82	85
16	57	283	205	232	185	380	327	213	178	39	64	116
17	66	321	250	242	182	358	295	185	162	34	160	114
18	44	308	250	319	165	313	259	184	224	70	162	102
19	52	276	238	343	200	306	228	185	194	30	135	56
20	44	240	225	363	190	*316	203	178	164	34	*105	22
21	42	207	422	380	187	346	182	195	138	38	72	50
22	54	184	582	327	178	363	165	*216	139	58	79	96
23	48	191	583	474	173	397	*173	198	144	57	78	*66
24	26	198	487	493	165	433	157	172	145	51	75	89
25	115	214	403	410	165	427	157	165	133	26	69	73
26	135	248	345	501	167	415	207	200	131	29	73	58
27	122	295	300	716	191	400	242	200	114	28	37	26
28	102	264	285	772	175	380	375	177	82	52	59	42
29	88	223	250	728	140	349	571	157	109	26	45	78
30	89	207	238	590	-	321	582	175	148	38	47	90
31	99	-	285	470	-	300	-	196	-	41	30	-
Total	2,217	8,491	8,469	11,019	7,542	9,853	8,552	6,729	7,987	1,867	2,661	2,366
Mean	71.5	283	273	355	260	318	285	217	266	60.2	85.8	78.9
Cfs/m	0.762	3.02	2.91	3.78	2.77	3.39	3.04	2.31	2.84	0.642	0.915	0.841
In.	0.88	3.37	3.36	4.37	2.99	3.91	3.39	2.67	3.17	0.74	1.06	0.94

Calendar year 1951: Max 985 Min 26 Mean 203 Cfs/m 2.16 In. 29.31  
Water year 1951-52: Max 804 Min 22 Mean 212 Cfs/m 2.26 In. 30.85

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 15-18, 20, 26-29, Jan. 8, 9, 11-13, 25, 30, 31, Feb. 9, 13-16, 18-20, 24, 25, Mar. 1-3. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Little River at Buffumville, Mass.

Location.--Lat 42°06'57", long. 71°53'26", on left bank 0.6 mile upstream from Boston & Albany Railroad bridge, 0.6 mile upstream from mouth, 0.8 mile east of Buffumville, Worcester County, and 1.5 miles west of Oxford.

Drainage area.--27.7 sq mi.

Records available.--July 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 457.00 ft above mean sea level, unadjusted (levels by Corps of Engineers).

Average discharge.--13 years, 42.6 cfs.

Extremes.--Maximum discharge during year, 356 cfs June 2 (gage height, 4.70 ft); minimum, 0.9 cfs Oct. 1; minimum daily, 1.1 cfs Oct. 20, 21, Aug. 3, 4.  
1939-52: Maximum discharge, 520 cfs Feb. 8, 1951 (gage height, 5.37 ft); minimum, 0.5 cfs Nov. 28, 29, 1949, July 30, 1950; minimum daily, 0.5 cfs Nov. 28, 1949.

Remarks.--Records good. Flow regulated by mill above station.

Revisions (water years).--W 1201: 1940, 1948.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.9	0.5	3.0	42
2.0	1.3	3.5	108
2.2	4.3	4.0	198
2.4	8.6	4.5	309
2.7	20	5.0	428

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	58	43	105	100	53	80	103	90	25	27	1.5
2	2.2	59	48	117	96	50	78	82	298	22	1.2	1.8
3	2.7	121	56	121	110	59	78	63	274	18	1.1	1.5
4	1.5	277	50	110	125	54	75	61	185	16	1.1	1.7
5	3.3	192	50	96	151	63	90	62	154	13	1.4	31
6	1.2	125	65	85	138	72	171	51	135	11	27	19
7	1.4	125	89	78	122	75	174	52	98	25	2.1	1.2
8	20	188	76	65	98	76	129	53	78	*28	28	1.3
9	1.4	169	75	*61	95	67	100	53	74	32	29	10
10	1.7	125	80	60	87	75	86	23	59	37	4.8	6.0
11	8.0	99	*69	53	*97	104	76	27	54	9.8	27	1.4
12	16	82	63	52	89	*215	75	85	38	1.4	40	13
13	18	73	57	52	78	194	71	98	31	*1.3	40	3.0
14	17	69	53	59	71	151	100	87	33	3.8	19	1.4
15	23	83	33	57	63	120	118	72	32	1.4	1.4	3.1
16	31	*90	45	58	53	106	117	63	27	1.8	3.1	32
17	50	97	52	64	68	100	*94	42	31	1.7	63	17
18	37	99	53	90	71	91	84	52	43	5.3	105	*1.4
19	1.2	83	57	104	60	94	75	*60	44	2.9	83	27
20	1.1	67	62	111	66	104	65	58	36	8.0	*46	11
21	1.3	57	185	122	64	112	70	61	24	8.2	39	6.6
22	2.8	50	320	101	63	120	51	71	25	7.0	44	11
23	4.4	51	223	167	80	129	48	61	26	16	12	8.0
24	4.0	59	150	198	56	149	48	44	15	4.4	1.5	20
25	8.7	63	116	138	67	133	50	50	18	1.8	19	4.9
26	22	73	105	147	59	118	26	72	17	5.6	30	22
27	22	85	87	252	59	112	36	71	16	6.2	7.7	32
28	32	61	75	261	58	108	107	60	15	16	27	1.4
29	39	65	63	211	57	100	138	58	20	1.3	46	5.0
30	30	58	71	154	-	85	125	32	24	9.5	19	1.3
31	40	-	92	117	-	90	-	54	-	32	1.3	-
Total	447.1	2,903	2,663	3,468	2,377	3,179	2,635	1,881	1,994	385.7	789.3	297.8
Mean	14.4	96.8	85.9	112	82.0	103	87.8	60.7	66.5	12.4	25.5	9.93
Cfsm	0.520	3.49	3.10	4.04	2.96	3.72	3.17	2.19	2.40	0.448	0.921	0.358
In.	0.60	3.90	3.58	4.65	3.19	4.27	3.54	2.53	2.68	0.52	1.06	0.40
Calendar year 1951: Max	470			Min	0.9	Mean	59.1	Cfsm	2.13	In.	28.96	
Water year 1951-52: Max	320			Min	1.1	Mean	62.9	Cfsm	2.27	In.	30.92	

\* Discharge measurement made on this day.

## French River at Webster, Mass.

Location.--Lat 42°03'03", long. 71°53'08", on right bank 50 ft upstream from Pleasant Street Bridge at Webster, Worcester County, and 1.1 miles upstream from Potash Brook.

Drainage area.--85.3 sq mi.

Records available.--December 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 406.74 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 841 cfs June 3 (gage height, 8.12 ft); minimum daily, 4.1 cfs July 27.

1949-52: Maximum discharge, 942 cfs Feb. 8, 1951 (gage height, 8.71 ft), from rating curve extended above 560 cfs by logarithmic plotting; minimum daily, 2.9 cfs Sept. 30, 1951.

Maximum discharge known, 4,700 cfs Mar. 19, 1936, by computation of flow over dam about half a mile upstream.

Remarks.--Records good except those below 20 cfs, which are fair. Flow regulated by mills and by Lake Chaubunagungamaug (estimated usable capacity, 207,000,000 cu ft) and other smaller reservoirs above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

3.9	3.2	5.0	112	3.9	2.2	5.0	104
4.0	6.9	6.0	306	4.0	5.1	6.0	314
4.2	18	7.0	534	4.1	9.3	7.0	539
4.5	45	8.0	770	4.3	21	8.0	506
				4.6	49		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	98	166	287	335	175	225	373	237	60	51	45
2	55	134	139	317	319	159	215	305	560	54	7.8	80
3	57	278	168	335	328	172	215	254	771	48	5.1	63
4	54	495	180	315	364	165	204	227	579	43	48	60
5	42	495	178	285	412	202	226	220	496	40	58	58
6	7.9	359	219	266	417	226	350	203	443	33	62	19
7	7.2	306	262	247	371	237	467	195	367	69	58	29
8	59	408	262	223	326	225	410	189	299	59	57	68
9	56	440	201	211	304	213	325	181	271	57	23	60
10	55	366	*233	*201	287	217	275	151	236	*61	76	58
11	56	298	241	197	293	332	251	102	204	63	116	57
12	*53	247	217	175	300	*552	233	202	195	11	110	54
13	8.4	227	203	177	*262	587	227	256	163	21	98	13
14	6.5	227	187	189	236	500	280	250	151	66	87	9.8
15	57	241	164	190	221	424	337	214	145	59	67	54
16	59	258	138	208	198	357	349	194	128	55	16	56
17	63	*274	158	216	211	318	*310	155	120	45	147	54
18	62	283	193	267	245	300	273	157	148	44	193	56
19	64	277	229	304	235	301	245	*172	138	10	186	65
20	11	233	225	317	234	319	223	172	122	4.4	125	28
21	27	205	405	339	229	346	211	198	85	46	109	53
22	70	168	655	317	229	357	180	206	78	49	113	71
23	61	185	608	394	213	357	152	194	92	45	80	*61
24	60	189	458	509	205	405	147	162	83	45	44	61
25	69	207	359	444	218	398	154	153	85	48	*71	61
26	60	239	319	412	212	348	180	197	82	9.8	67	57
27	10	258	270	555	209	332	160	211	72	4.1	76	24
28	13	233	233	638	202	313	302	185	67	46	62	40
29	84	211	213	598	197	283	444	164	64	53	83	66
30	72	188	223	488	-	233	447	144	73	50	79	58
31	74	-	266	389	-	228	-	166	-	53	42	-
Total	1,485.0	8,027	7,972	10,010	7,812	9,581	8,017	6,152	6,554	1,351.3	2,416.9	1,538.8
Mean	47.9	268	257	323	269	309	267	198	218	43.6	78.0	51.3
Cfsm	0.562	3.14	3.01	3.79	3.15	3.62	3.13	2.32	2.56	0.511	0.914	0.601
In.	0.65	3.50	3.48	4.36	3.41	4.18	3.50	2.68	2.86	0.59	1.05	0.67

Calendar year 1951: Max 813 Min 2.9 Mean 176 Cfsm 2.06 In. 28.01  
 Water year 1951-52: Max 771 Min 4.1 Mean 194 Cfsm 2.27 In. 30.93

\* Discharge measurement made on this day.

## Quinebaug River at Quinebaug, Conn.

Location.--Lat 42°01'20", long. 71°57'22", on right bank at Quinebaug, Windham County, 500 ft upstream from bridge on State Highway 197, 0.25 mile downstream from Massachusetts-Connecticut State line, 7.8 miles upstream from French River, and at mile 46.

Drainage area.--157 sq mi.

Records available.--September 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 341.52 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 265 cfs.

Extremes.--Maximum discharge during year, 1,990 cfs June 2 (gage height, 5.81 ft); minimum, about 3 cfs Oct. 1; minimum daily, 8 cfs Aug. 3.

1931-52: Maximum discharge, 14,100 cfs Sept. 21, 1938 (gage height, 16.21 ft, from floodmark), by computation of flow through bridge opening and over roadway 500 ft downstream; minimum, about 1 cfs Sept. 9, 1943, July 12, 1949, Sept. 17, 18, 1950, July 9, 1951; minimum gage height, 1.74 ft Aug. 12, 1940; minimum daily discharge, 2 cfs Aug. 21, 28, Sept. 4, 1932.

Remarks.--Records good except those for periods of no gage-height record, ice effect, and backwater from aquatic vegetation, which are fair. Flow regulated by mills above station.

Revisions (water years).--W 851: 1936(M). W 1201: 1939-43, 1947, 1949.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	263	250	498	*a650	223	*450	*677	710	*194	89	59
2	74	277	260	553	641	188	445	542	1,840	178	68	308
3	90	786	302	536	665	304	430	476	*1,360	148	8	240
4	90	1,010	277	487	767	252	415	430	1,040	74	76	187
5	56	797	302	430	848	320	545	400	1,070	43	66	163
6	56	605	452	410	773	366	880	353	815	49	97	50
7	37	927	436	415	677	393	743	324	647	151	82	68
8	205	1,140	365	a380	a600	327	635	302	498	128	*82	136
9	175	828	359	a350	a550	316	564	261	445	*101	59	99
10	181	635	395	a320	a520	378	498	218	349	128	240	76
11	169	553	379	a300	a520	683	450	242	342	285	414	59
12	165	492	356	a300	487	1,100	392	508	290	214	247	83
13	100	*435	*316	a250	426	*1,010	377	*488	280	133	179	35
14	122	445	281	a300	387	880	548	436	152	104	127	42
15	194	536	252	a320	387	743	599	379	194	72	104	*133
16	110	504	b185	a380	285	641	587	344	270	68	74	126
17	68	570	b280	a380	336	587	*514	283	236	58	381	142
18	130	520	b350	*a500	a360	531	455	308	306	31	325	96
19	95	470	446	375	a350	526	392	354	*293	27	205	130
20	100	409	421	623	a330	553	359	290	221	25	155	71
21	70	353	1,090	665	a340	623	366	373	135	38	105	46
22	98	272	1,200	542	a300	629	309	344	171	42	127	99
23	98	328	945	1,010	a280	713	274	339	235	77	81	123
24	50	336	755	912	a290	803	286	238	173	62	103	64
25	218	350	617	755	a300	*725	259	272	160	61	149	122
26	235	441	536	a850	a300	699	375	398	154	47	89	78
27	183	480	465	a1,200	282	653	430	329	164	36	66	36
28	188	407	415	a1,250	294	617	749	298	70	35	53	66
29	222	368	355	a1,100	268	548	912	232	127	62	91	69
30	147	316	368	a900	-	515	860	233	270	45	55	110
31	175	-	470	a750	-	504	-	295	-	38	55	-
Total	3,939	15,853	13,880	18,241	13,213	17,320	15,098	10,966	13,017	2,758	4,050	3,120
Mean	127	528	448	588	456	559	503	354	434	89.0	131	104
Cfs/m	0.809	3.36	2.85	3.75	2.90	3.56	3.20	2.25	2.76	0.567	0.834	0.662
In.	0.93	3.75	3.29	4.32	3.13	4.10	3.57	2.59	3.08	0.65	0.96	0.74

Calendar year 1951: Max 1,890 Min 20 Mean 344 Cfs/m 2.19 In. 29.74  
 Water year 1951-52: Max 1,840 Min 8 Mean 359 Cfs/m 2.29 In. 31.11

Peak discharge (base, 1,000 cfs).--Nov. 3 (9:30 p.m.) 1,240 cfs (4.94 ft); Nov. 7 (6 p.m.) 1,620 cfs (5.53 ft); Dec. 21 (5 p.m.) 1,460 cfs (5.20 ft); Jan. 23 (9:30 a.m.) 1,140 cfs (4.47 ft); Jan. 28 (time unknown) 1,460 cfs (4.90 ft); Mar. 12 (1 a.m.) 1,330 cfs (4.70 ft); June 2 (8:30 a.m.) 1,990 cfs (5.81 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations at Westville and Putnam.

b Stage-discharge relation affected by ice.

Note.--Backwater from aquatic vegetation Oct. 1 to Jan. 25, Apr. 20 to Sept. 30.

## Quinebaug River at Putnam, Conn.

Location.--Lat 41°54'34", long. 71°54'48", on left bank at Putnam, Windham County, 0.15 mile downstream from Little River, 0.3 mile upstream from New York, New Haven & Hartford Railroad bridge, 2.8 miles downstream from French River, and at mile 35.7.

Drainage area.--331 sq mi.

Records available.--December 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 216.76 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 548 cfs.

Extremes.--Maximum discharge during year, 4,040 cfs Dec. 21 (gage height, 8.67 ft); minimum, 14 cfs Oct. 7 (gage height, 1.65 ft); minimum daily, 20 cfs July 19.  
1929-52: Maximum discharge, 20,900 cfs Sept. 21, 1938 (gage height, 19.45 ft, from floodmarks), by computation of peak flow over dam 1 mile upstream and over dam on Little River 2 miles upstream from its mouth; minimum, 8.5 cfs Oct. 26, 1935; minimum daily, 11 cfs Oct. 5, 12, 1930.

Remarks.--Records excellent. City of Putnam diverts an average of less than 1 mgd from Little River for municipal supply. Large diurnal fluctuation, particularly during low flow, caused by many dams and reservoirs above station, largest of which is Lake Chaubunagungamaug with an estimated usable capacity of 207,000,000 cu ft.

Revisions (water years).--W 781: Drainage area, 1934(M). W 1301: 1931-33(M), 1935(M).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	18	3.0	291
1.9	38	4.0	690
2.1	66	5.0	1,230
2.5	146	8.0	3,590

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	448	640	1,150	1,320	544	890	1,470	1,020	308	106	96
2	106	576	517	1,280	1,320	411	890	1,200	3,280	283	111	422
3	108	1,440	666	1,260	1,380	577	890	965	3,000	222	63	386
4	134	2,320	635	1,170	1,530	551	715	890	2,240	162	78	309
5	154	1,920	647	1,050	1,710	655	894	842	1,970	120	145	255
6	82	1,470	948	940	1,650	838	1,650	736	1,650	123	249	134
7	*32	1,450	994	958	1,470	926	1,590	671	1,350	202	318	80
8	267	2,410	944	809	1,290	804	1,410	652	1,080	223	210	190
9	313	1,940	781	784	1,200	679	1,230	568	963	230	136	171
10	284	1,500	944	741	1,110	838	1,020	480	844	198	262	147
11	262	1,280	879	693	1,150	1,280	940	483	684	428	965	143
12	268	1,080	818	684	1,110	2,680	840	898	641	419	636	114
13	193	990	*722	643	935	*2,410	790	*994	592	227	483	70
14	122	927	663	665	814	2,020	1,060	942	419	236	375	63
15	245	1,110	596	654	790	1,650	1,260	836	384	212	267	*136
16	209	1,160	361	777	648	1,410	1,290	665	536	166	174	208
17	166	1,180	559	823	586	1,290	*1,140	595	466	158	568	206
18	173	1,140	657	*1,150	810	*1,150	990	595	621	107	765	224
19	215	1,110	972	1,260	748	1,140	840	725	569	20	574	192
20	122	969	951	1,320	728	1,170	765	612	*499	30	417	195
21	102	*814	2,350	1,410	745	1,350	792	797	311	75	342	113
22	111	636	3,210	1,230	688	1,350	648	770	321	80	326	173
23	152	736	2,380	1,910	623	1,410	585	656	400	94	240	229
24	128	771	1,850	1,990	623	1,650	510	568	344	120	164	228
25	286	715	1,500	1,620	756	1,530	524	574	306	78	261	170
26	398	956	1,350	1,770	642	1,410	740	827	256	64	210	196
27	274	1,060	1,160	2,560	629	1,290	820	748	266	58	158	78
28	203	940	1,000	2,640	*631	1,230	1,350	696	248	91	154	57
29	299	841	902	2,430	637	1,110	1,850	563	176	87	111	179
30	286	733	786	1,920	-	990	1,710	475	447	103	165	194
31	224	-	1,140	1,530	-	990	-	527	-	94	121	-
Total	6,030	34,602	32,500	39,721	28,253	37,333	30,623	23,020	25,903	5,018	9,154	5,358
Mean	195	1,153	1,048	1,281	974	1,204	1,021	743	863	162	295	179
Cfs/m	0.589	3.48	3.17	3.87	2.94	3.64	3.08	2.24	2.61	0.489	0.891	0.541
In.	0.68	3.88	3.66	4.46	3.17	4.20	3.44	2.58	2.91	0.56	1.03	0.60
Calendar year 1951: Max			4,560	Min	32	Mean	733	Cfs/m	2.21	In.	30.04	
Water year 1951-52: Max			3,280	Min	20	Mean	758	Cfs/m	2.29	In.	31.17	

Peak discharge (base, 2,000 cfs).--Nov. 4 (12:30 a.m.) 2,480 cfs (6.88 ft); Nov. 8 (2 a.m.) 2,560 cfs (8.96 ft); Dec. 21 (5 p.m.) 4,040 cfs (8.67 ft); Jan. 23 (7:30 p.m.) 2,200 cfs (6.49 ft); Jan. 28 (3 p.m.) 2,720 cfs (7.22 ft); Mar. 12 (6:30 a.m.) 2,880 cfs (7.38 ft); June 2 (7 p.m.) 3,570 cfs (8.19 ft).

\* Discharge measurement made on this day.

## Five Mile River at Killingly, Conn.

Location.--Lat 41°50'14", long. 71°53'09", at upstream left abutment of New York, New Haven & Hartford Railroad bridge, 0.5 mile upstream from Whetstone Brook, 0.6 mile south of Killingly, Windham County, and 3.2 miles upstream from mouth.

Drainage area.--58.2 sq mi.

Records available.--November 1937 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 222.22 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 101 cfs.

Extremes.--Maximum discharge during year, 512 cfs June 2 (gage height, 3.63 ft); minimum, 5.9 cfs several times during shutdowns in July, August and September (gage height, 0.66 ft); minimum daily, 6.3 cfs July 26, Sept. 27.  
1937-52: Maximum discharge, 2,840 cfs July 24, 1938 (gage height, 8.52 ft); minimum, 3.8 cfs Aug. 24, 1941 (gage height, 0.44 ft); minimum daily, 5.6 cfs Aug. 13, 1939, Aug. 24, 1941, Nov. 24, 1949.

Peak discharge of Mar. 12, 1936, 1,600 cfs, by computation of peak flow over dam at Danielson.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow regulated by dams and reservoirs above station.

Revisions (water years).--W 921: 1938-40. W 951: 1938-41.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	4.5	1.6	92
.7	6.8	2.0	171
.8	10	2.5	286
1.0	21	3.4	465
1.2	37		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	50	138	196	240	107	172	236	158	68	53	a40
2	38	95	130	182	245	102	165	210	434	60	*8.1	56
3	36	242	125	182	252	103	160	192	434	46	10	47
4	37	364	118	176	257	100	152	176	347	49	37	a43
5	34	277	122	173	297	119	169	164	315	35	57	a41
6	12	245	160	173	281	136	224	154	268	29	46	a20
7	32	279	164	154	256	148	205	145	233	30	74	a25
8	69	395	153	145	238	143	190	139	201	41	58	a35
9	69	352	156	136	228	138	178	136	177	41	47	a34
10	58	298	163	136	212	133	168	126	160	51	58	a33
11	54	252	149	136	213	209	160	120	148	103	78	a31
12	54	201	139	124	220	358	158	190	137	54	58	a30
13	50	191	134	120	198	324	153	194	128	35	53	a12
14	54	181	*129	114	181	304	192	171	115	32	50	a15
15	60	202	128	122	168	279	208	154	106	37	44	a37
16	50	203	120	148	160	252	201	145	98	35	15	33
17	50	228	105	148	167	230	186	136	99	36	29	32
18	51	222	130	*199	182	216	*172	134	146	25	45	31
19	45	192	190	203	176	206	160	132	112	24	40	37
20	32	178	170	205	163	*227	147	132	*99	18	a37	38
21	48	*164	350	212	162	235	134	164	84	39	a40	36
22	*59	149	447	195	153	233	131	176	82	36	a42	44
23	37	142	364	279	149	240	124	157	77	36	a20	34
24	36	145	320	284	143	266	111	143	63	33	a25	38
25	44	153	277	244	141	262	115	141	56	30	a40	40
26	68	170	258	286	138	245	158	153	43	6.3	a39	34
27	42	176	235	385	132	229	158	147	50	9.4	a36	6.3
28	47	164	205	372	*122	214	232	131	43	34	a34	14
29	60	153	199	347	115	201	283	121	44	34	a32	41
30	40	145	196	294	-	189	269	118	70	32	a17	33
31	41	-	206	255	-	178	-	118	-	31	a35	-
Total	1,461	6,208	5,880	6,323	5,589	6,326	5,235	4,755	4,527	1,169.7	1,217.1	990.3
Mean	47.1	207	190	204	193	204	174	153	151	37.7	39.3	33.0
Cfsm	0.809	3.56	3.26	3.51	3.32	3.51	2.99	2.63	2.59	0.648	0.675	0.567
In.	0.93	3.97	3.76	4.05	3.58	4.05	3.34	3.03	2.89	0.75	0.78	0.63
Calendar year 1951: Max			476									
Water year 1951-52: Max			447									
Min	8.1											
Mean	126											
Cfsm	2.16											
In.	29.37											
Cfsm	2.34											
In.	31.76											

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Moosup River at Moosup and Quinebaug River at Putnam.

## Moosup River at Moosup, Conn.

Location.--Lat 41°42'37", long. 71°53'11", on right bank at outlet of tailrace from Majestic Metal Specialties, Inc. (formerly Aldrich Bros.) mill at Moosup, Windham County, 100 ft upstream from New York, New Haven & Hartford Railroad bridge, 0.5 mile downstream from Ekonk Brook, and 3.8 miles upstream from mouth.

Drainage area.--83.5 sq mi.

Records available.--October 1932 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 196.64 ft above mean sea level, datum of 1929.

Average discharge.--20 years, 158 cfs.

Extremes.--Maximum discharge during year, 1,350 cfs Mar. 11 (gage height, 4.90 ft); minimum, 1.4 cfs (gage height, 0.56 ft); minimum daily, 6.0 cfs Aug. 31, Sept. 13. 1932-52: Maximum discharge, 4,260 cfs Mar. 12, 1936 (gage height, 8.35 ft), from sharp, short rise of unknown origin; maximum natural discharge, 4,100 cfs July 24, 1938 (gage height, 8.20 ft), from rating curve extended above 1,500 cfs on basis of computation of flow over dam a quarter of a mile above station at gage heights 6.9 and 8.2 ft; minimum, 0.1 cfs Feb. 8, 1934; minimum gage height, 0.36 ft Oct. 17, 1947; minimum daily discharge, 1.1 cfs Aug. 24, 1949.

Remarks.--Records excellent. Low flow completely regulated by mills above station.

Revisions (water years).--W 781: Drainage area. W 851: 1933, 1934(M), 1935-37.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.8	5.2	2.0	137
.9	8.0	2.5	260
1.1	17	3.0	425
1.3	31	4.0	640
1.5	53	4.7	1,230

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	72	224	306	269	145	181	309	261	42	15	9.6
2	32	134	184	272	300	87	167	240	655	61	14	36
3	29	584	113	266	338	187	176	183	450	32	15	37
4	23	815	144	246	390	130	176	135	296	8.4	23	41
5	22	591	174	235	527	206	170	161	214	22	20	42
6	7.4	355	296	249	488	308	312	148	191	27	38	32
7	15	490	309	188	335	284	152	214	64	36	8.4	36
8	59	768	266	194	312	300	232	143	113	42	55	27
9	52	635	272	189	281	260	196	153	154	44	18	18
10	49	411	269	129	260	246	186	66	118	39	23	34
11	44	303	238	182	266	691	179	126	131	74	105	32
12	48	246	227	172	290	*1,230	141	487	122	76	83	27
13	12	224	134	75	238	915	71	*450	105	50	66	6.0
14	33	204	160	172	186	603	204	329	91	83	72	7.2
15	62	362	201	*173	170	453	222	249	19	62	72	20
16	49	450	95	260	174	366	209	201	103	33	20	17
17	49	591	170	246	153	312	201	171	95	27	170	16
18	39	492	183	332	247	*281	*157	138	131	35	188	21
19	67	380	484	348	238	269	102	191	81	17	133	27
20	8.9	290	397	342	201	342	131	189	*101	11	92	19
21	6.6	*252	1,030	335	201	348	170	297	72	21	50	12
22	22	219	1,050	269	219	316	107	284	16	20	64	45
23	33	206	655	575	140	293	93	224	86	21	26	28
24	46	201	453	571	154	306	123	173	80	26	33	27
25	61	249	355	400	194	306	112	128	62	24	82	28
26	86	335	332	464	178	272	183	254	56	10	54	32
27	90	348	296	635	*131	240	177	220	35	13	41	17
28	56	296	239	603	183	224	508	143	11	27	34	8.1
29	70	243	235	515	183	201	567	159	30	24	28	26
30	68	227	243	380	-	143	442	125	94	14	17	16
31	63	-	290	300	-	204	-	115	-	13	6.0	-
Total	1,328.9	10,973	9,717	9,623	7,294	10,515	6,179	6,343	4,185	1,062.4	1,693.0	716.3
Mean	42.9	366	313	310	252	339	206	205	140	34.3	54.6	23.9
Cfsm	0.514	4.38	3.75	3.71	3.02	4.08	2.47	2.46	1.68	0.411	0.654	0.288
In.	0.59	4.89	4.32	4.28	3.26	4.68	2.76	2.84	1.87	0.47	0.75	0.32

Calendar year 1951: Max 1,080 Min 6.6 Mean 199 Cfsm 2.38 In. 32.39  
 Water year 1951-52: Max 1,230 Min 6.0 Mean 190 Cfsm 2.28 In. 31.03

\* Discharge measurement made on this day.



## Quinebaug River at Jewett City, Conn.

Location.--Lat 41°35'52", long. 71°59'05", on left bank in rear of high school on Slater Avenue at Jewett City, New London County, 570 ft downstream from outlet of canal from Fisk Mills, Inc., at mouth of Pachaug River, 1,000 ft downstream from railroad bridge, and at mile 6.1.

Drainage area.--711 sq mi.

Records available.--July 1918 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 63.07 ft above mean sea level, datum of 1929.

Average discharge.--34 years, 1,218 cfs.

Extremes.--Maximum discharge during year, 8,080 cfs Dec. 22 (gage height, 13.35 ft); minimum, 30 cfs Oct. 24 (gage height, 3.62 ft); minimum daily, 55 cfs Aug. 1.  
1918-52: Maximum discharge, 29,200 cfs Mar. 19, 1936 (gage height, 24.0 ft, from floodmarks), by computation of peak flow over three nearby dams; minimum daily, 18 cfs Aug. 28, Dec. 11, 1949.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. Flow regulated by many ponds and reservoirs above station, the largest of which are Lake Chaubunagungamaug and Pachaug Pond.

Revisions (water years).--W 781: Drainage area. W 1301: 1919-29(M,m), 1935(M,m).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.8	52	7.0	1,470
4.0	84	8.0	2,200
4.5	200	10.0	4,080
5.0	370	13.0	7,580
6.0	860		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	350	743	1,580	2,360	2,790	1,540	1,880	3,060	1,580	722	55	203
2	292	*1,190	1,400	2,440	2,700	1,090	1,720	2,440	5,240	615	*168	550
3	283	2,540	1,340	2,440	2,970	1,250	1,750	2,040	5,850	575	218	663
4	285	5,390	1,340	2,380	3,180	1,280	1,840	1,820	4,390	446	261	695
5	56	4,260	*1,370	2,200	3,880	1,470	1,540	1,750	3,460	270	279	567
6	208	3,080	1,720	2,160	3,780	2,000	2,700	1,610	2,970	337	310	139
7	189	2,770	2,080	2,040	3,260	2,280	3,080	1,500	2,520	396	650	286
8	431	4,940	2,040	1,830	2,790	2,160	2,700	1,400	2,120	422	600	415
9	489	4,500	1,860	1,780	2,520	1,890	2,280	1,310	1,820	392	300	299
10	504	3,380	1,920	1,640	2,360	1,890	2,040	1,180	1,680	455	400	403
11	502	2,610	1,890	1,540	2,440	2,720	1,750	1,100	1,500	933	1,200	372
12	344	2,280	1,750	1,500	2,520	6,690	1,680	2,170	1,400	980	1,500	346
13	438	1,980	1,580	1,340	2,160	6,090	1,500	*2,700	1,180	640	1,100	80
14	315	1,860	1,340	1,370	1,890	4,830	1,880	2,280	1,130	477	850	103
15	542	2,200	1,470	*1,500	1,720	3,880	2,440	2,000	860	572	700	440
16	406	2,570	1,180	1,750	1,680	3,280	2,440	1,720	960	321	350	331
17	418	2,880	1,040	1,820	1,540	2,880	2,200	1,440	1,010	380	650	327
18	483	2,700	1,310	2,200	1,820	*2,520	1,920	1,340	*1,250	258	1,500	428
19	159	2,400	2,440	2,700	1,890	2,360	1,680	1,580	1,310	192	1,200	480
20	362	2,100	2,360	2,520	1,780	2,610	1,540	1,540	1,070	156	950	124
21	274	1,820	4,510	2,880	1,720	2,790	*1,540	1,820	890	270	750	311
22	352	1,610	7,580	2,520	1,680	2,700	1,440	2,080	597	299	695	444
23	271	1,470	5,730	3,880	1,540	2,700	1,280	1,750	832	258	585	403
24	376	1,610	4,280	4,500	1,400	3,180	1,220	1,540	722	210	345	421
25	517	1,680	3,260	3,580	1,580	3,080	1,130	1,250	770	213	590	532
26	456	1,970	2,970	3,460	1,500	2,790	1,470	1,720	590	73	575	282
27	664	2,360	2,610	5,270	*1,440	2,520	1,720	1,780	555	153	449	105
28	490	2,100	2,120	5,490	1,440	2,360	2,920	1,540	421	241	189	192
29	566	1,820	2,080	5,050	1,370	2,120	4,170	1,400	410	280	211	410
30	533	1,680	1,960	4,080	-	1,960	3,760	1,100	565	292	267	294
31	522	-	2,200	3,160	-	1,920	-	1,190	-	202	261	-
Total	12,055	74,343	72,270	82,820	63,280	82,550	60,950	53,130	49,832	12,030	18,156	10,635
Mean	389	2,478	2,331	2,675	2,182	2,663	2,032	1,714	1,654	388	586	354
Cfsm	0.547	3.49	3.28	3.78	3.07	3.75	2.86	2.41	2.33	0.546	0.824	0.498
In.	0.63	3.89	3.78	4.34	3.31	4.32	3.19	2.78	2.60	0.63	0.95	0.56

Calendar year 1951: Max 8,480 Min 56 Mean 1,598 Cfsm 2.25 In. 30.51  
Water year 1951-52: Max 7,560 Min 55 Mean 1,617 Cfsm 2.27 In. 30.98

Peak discharge (base, 4,500 cfs).--Nov. 4 (10:30 a.m.) 5,730 cfs (11.53 ft); Nov. 8 (3:30 p.m.) 5,490 cfs (11.29 ft); Dec. 22 (8:30 a.m.) 8,080 cfs (13.35 ft); Jan. 24 (7:30 a.m.) 4,830 cfs (10.6 ft); Jan. 28 (8:30 a.m.) 5,610 cfs (11.36 ft); Mar. 12 (4 p.m.) 7,170 cfs (12.70 ft); June 2 (10:30 p.m.) 6,570 cfs (12.20 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Aug. 6-21; discharge estimated on basis of summation of discharges from stations at Putnam, on Five Mile River at Killingly, and on Moosup River at Moosup.

## Yantic River at Yantic, Conn.

Location.--Lat 41°33'31", long. 72°07'19", on left bank at Yantic, New London County, 700 ft downstream from stone-arch highway bridge, 1 mile downstream from Susquetonscut Brook, and 4.8 miles upstream from mouth.

Drainage area.--88.6 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 94.46 ft above mean sea level, datum of 1929.

Average discharge.--22 years, 155 cfs.

Extremes.--Maximum discharge during year, 2,830 cfs Mar. 11 (gage height, 8.58 ft); minimum, 11 cfs Aug. 2, 4, 5 (gage height, 0.98 ft); minimum daily, 12 cfs Oct. 22, 23, Aug. 2-5, Sept. 13-15.

1930-52: Maximum discharge, 13,500 cfs Sept. 21, 1938 (gage height, 14.66 ft, from floodmark), by computation of flow over two dams  $2\frac{1}{2}$  miles upstream and 3 miles downstream from station, respectively; minimum, 2.3 cfs sometime during period July 21 to Aug. 11, 1949; minimum gage height, 0.41 ft Oct. 13, 1930; minimum daily discharge, 3.3 cfs Oct. 13, 1930.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Low flow completely regulated by mills above station.

Revisions (water years).--W 781: Drainage area. W 1051: 1931-36.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	12	3.0	263
1.2	23	4.0	495
1.5	46	5.0	795
2.0	98	6.0	1,200
2.5	169	7.6	2,070

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	82	130	270	330	155	178	330	832	38	60	34
2	41	153	120	260	450	142	169	270	1,190	29	12	130
3	41	521	110	260	500	141	176	220	605	79	12	114
4	41	605	110	230	600	134	161	190	372	15	12	71
5	41	323	130	210	650	236	244	170	284	14	12	53
6	22	*178	250	200	500	294	495	160	233	14	22	42
7	14	392	210	180	370	349	395	160	195	15	57	36
8	65	482	180	170	320	316	294	150	152	13	88	46
9	66	305	190	160	340	284	241	130	124	13	18	17
10	56	210	200	150	300	294	212	120	134	31	132	49
11	52	146	170	140	330	1,210	186	150	118	184	432	14
12	32	120	140	140	360	2,040	163	550	102	119	267	81
13	23	108	120	130	280	984	150	450	87	57	473	12
14	19	124	100	*140	230	635	297	*305	70	55	275	12
15	16	227	120	191	210	482	372	219	70	17	147	12
16	15	308	110	327	190	384	349	190	*99	15	76	14
17	14	349	*100	274	220	*327	274	156	106	15	530	14
18	14	247	230	438	280	294	*219	166	99	16	332	19
19	14	181	500	395	270	284	190	181	101	16	175	84
20	13	142	350	349	240	482	170	210	89	14	97	66
21	13	112	1,700	327	230	520	150	445	19	14	70	125
22	12	102	1,100	245	210	432	140	338	20	14	146	98
23	12	120	600	1,220	200	395	130	237	102	21	152	90
24	13	200	400	768	190	395	130	174	103	42	104	88
25	42	190	330	408	*180	372	150	174	92	39	104	82
26	65	280	280	903	172	316	330	263	17	32	53	84
27	36	250	250	1,200	172	274	300	223	23	29	73	66
28	36	180	200	778	166	239	800	163	22	19	52	73
29	28	150	180	605	163	214	700	131	27	15	78	67
30	25	130	210	395	-	197	450	121	67	14	16	65
31	24	-	300	316	-	183	-	179	-	14	19	-
Total	937	6,917	9,090	11,779	8,653	13,004	8,215	6,925	5,552	1,020	4,096	1,758
Mean	30.2	231	293	380	298	419	274	223	185	32.9	132	58.6
Cfsm	0.341	2.61	3.31	4.29	3.36	4.73	3.09	2.52	2.09	0.371	1.49	0.661
In.	0.39	2.91	3.82	4.95	3.62	5.45	3.45	2.90	2.33	0.43	1.72	0.74
Calendar year 1951: Max	1,700			Min	10	Mean	195	Cfsm	2.18	In.	29.53	
Water year 1951-52: Max	2,040			Min	12	Mean	213	Cfsm	2.40	In.	32.71	

Peak discharge (base, 1,000 cfs).--Dec. 21 (time unknown) about 2,200 cfs (about 7.8 ft); Jan. 23 (7:30 a.m.) 1,500 cfs (6.57 ft); Jan. 26 (6 p.m.) 1,550 cfs (6.69 ft); Mar. 11 (10 p.m.) 2,830 cfs (8.58 ft); June 2 (12:30 a.m.) 1,550 cfs (6.71 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 23 to Dec. 16, Dec. 18 to Jan. 13, Feb. 1-25, Apr. 19 to May 13; discharge estimated on basis of recorded range in stage where available, weather records, and records for stations on nearby streams.

Connecticut River at First Connecticut Lake, near Pittsburg, N. H.

Location.--Lat 45°05'15", long. 71°17'35", on right bank a quarter of a mile downstream from dam at First Connecticut Lake and 6 miles northeast of Pittsburg, Coos County.

Drainage area.--83.0 sq mi.

Records available.--April 1917 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,560 ft (from topographic map). Prior to Jan. 1, 1918, discharge computed from flow through gates at dam a quarter of a mile upstream. Jan. 1 to July 28, 1918, staff gage at present site and datum.

Average discharge.--35 years, 196 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 602 cfs Feb. 18 (gage height, 3.24 ft); minimum, 10 cfs Mar. 25 to Apr. 8.

1917-52: Maximum discharge, 7,200 cfs June 16, 1943 (gage height, 6.25 ft), from rating curve extended above 1,900 cfs on basis of computation of flow over dam at gage height 6.12 ft; maximum gage height, 6.35 ft May 5, 1925 (backwater from logging operations); minimum discharge, 2.8 cfs Mar. 16, 1929.

Revisions.--The figures of maximum discharge for the water years 1918-23, 1925-26, some of which have been revised, superseding those published in water-supply papers indicated, are contained in the following table:

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
-	1918	Oct. 18, 1917	+586	-
-	1919	July 5, 1919	+1,090	-
-	1920	May 31, 1920	+1,140	3.55
521.....	1921	Apr. 9, 1921	1,810	4.02
541.....	1922	June 20, 1922	1,640	3.91
561.....	1923	Apr. 27, 1923	940	3.38
601, 661....	1925	May 13, 1925	1,990	4.13
621.....	1926	Mar. 14, 1926	1,370	3.73

† Not previously published.

Remarks.--Records good except those below 20 cfs, which are fair. Flow regulated by First Connecticut and Second Connecticut Lakes (see p. 302).

Revisions (water years).--W 756: Drainage area. W 1001: 1931-39. Revised figures of discharge, in cubic feet per second, for the water years 1918 and 1926, superseding those published in Water-Supply Papers 601 and 621, are given herewith:

Date	Discharge	Date	Discharge
1925		1926	
Apr. 30.....	291	Mar. 1.....	890
May 1.....	424	2.....	940
2.....	344	3.....	960
3.....	412	4.....	1,070
4.....	312	5.....	1,030
5.....	312	6.....	1,080
6.....	39	7.....	960
7.....	41	8.....	984
8.....	42	9.....	1,080
9.....	543	10.....	1,160
10.....	448	11.....	1,130
11.....	305	12.....	960
12.....	805	13.....	1,280
13.....	838	14.....	1,260
14.....	782	15.....	1,160
15.....	623	16.....	1,080
16.....	646	17.....	1,010
17.....	661	18.....	930
18.....	455	19.....	860
		20.....	790

Month	Observed			Change in contents (millions of cubic feet)†	Adjusted‡		
	Maximum	Minimum	Mean		Mean	Per square mile	Runoff in inches
April 1925.....	291	16	46.2	+1,228.6	520	6.27	6.99
May.....	838	35	278	-97.0	242	2.92	3.36
Water year 1924-25..	838	6	196	-367.6	184	2.22	30.12
March 1926.....	1,280	110	727	-1,952.9	-2.19	-.026	-.03
Water year 1925-26..	1,280	7	272	-1,432.5	226	2.72	36.98

† Change in contents in First Connecticut and Second Connecticut Lakes.

‡ Negative figures of adjusted discharge and runoff indicate that evaporation and seepage from reservoirs exceeded inflow.

## Connecticut River at First Connecticut Lake, near Pittsburg, N. H.--Continued

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)

1.43	10	2.5	221
1.5	16	3.0	440
1.7	38	3.5	830
2.0	87		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	392	193	295	287	494	295	10	15	18	64	167	170
2	398	127	200	199	488	291	10	15	24	60	167	170
3	398	*14	17	199	482	291	10	15	21	40	167	170
4	392	14	17	199	250	287	10	15	18	42	164	*170
5	392	14	17	196	96	236	10	15	256	42	164	170
6	*392	14	18	196	96	145	10	15	404	42	*167	170
7	381	14	18	275	96	148	10	15	358	31	170	170
8	17	14	18	387	96	150	10	15	358	98	170	167
9	17	14	18	392	357	150	11	15	314	199	170	167
10	17	14	18	392	494	150	12	15	264	196	170	167
11	17	14	18	387	488	127	12	16	175	86	170	170
12	17	14	18	387	488	94	12	16	139	18	170	170
13	136	14	18	387	482	94	12	16	139	110	167	173
14	398	15	178	387	482	110	12	16	139	187	167	170
15	398	15	392	392	476	126	12	16	139	245	167	167
16	398	15	398	179	470	83	12	16	139	295	167	167
17	398	15	398	16	464	83	12	16	86	295	167	170
18	403	15	349	16	511	349	12	16	29	295	167	173
19	403	15	308	16	586	488	12	16	18	295	167	173
20	403	16	308	16	484	488	*13	16	18	295	164	173
21	403	103	136	113	313	488	12	*16	18	291	164	173
22	392	291	18	299	313	488	12	16	18	291	164	173
23	392	291	18	299	308	488	14	16	18	291	164	173
24	387	154	18	299	308	330	14	16	18	291	164	173
25	206	17	18	388	304	10	14	16	18	291	161	170
26	14	17	188	331	299	10	14	18	*18	287	161	170
27	14	17	398	148	299	10	14	18	18	287	161	170
28	264	117	398	148	295	10	14	19	18	287	166	170
29	290	295	392	148	295	10	15	18	18	385	173	170
30	193	295	387	257	-	10	15	17	18	292	173	167
31	193	-	387	500	-	10	-	17	-	162	173	-
Total	8,515	2,177	5,379	7,835	10,614	6,049	362	497	3,236	6,090	5,173	5,106
Mean	275	72.6	174	253	366	195	12.1	16.0	198	196	167	170
(†)	-650	+451	-86	-569	-878	-466	+1,657	+1,107	+410	-546	-417	-499

Adjusted for change in reservoir contents

Mean	32.0	247	141	40.3	15.6	21.1	651	429	266	-7.39	11.2	-22.3
Cfsm	0.386	2.98	1.70	0.486	0.188	0.254	7.84	5.17	3.20	-0.089	0.135	-0.269
In.	0.44	3.31	1.96	0.56	0.20	0.29	8.76	5.96	3.58	-0.10	0.16	-0.30

Observed

Adjusted

Calendar year 1951:	Max 749	Min 12	Mean 182	Mean 163	Cfsm 1.96	In. 26.67
Water year 1951-52:	Max 586	Min 10	Mean 167	Mean 151	Cfsm 1.82	In. 24.82

\* Discharge measurement made on this day.

† Change in contents, in millions of cubic feet, in First Connecticut and Second Connecticut Lakes.

Note.--Negative figures of adjusted discharge and runoff indicate that evaporation and seepage from reservoirs exceeded inflow.

## Connecticut River at North Stratford, N. H.

Location.--Lat 44°44'55", long. 71°37'55", on left bank at North Stratford, Coos County, 400 ft downstream from Nulhegan River.

Drainage area.--799 sq mi.

Records available.--August 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 880.17 ft above mean sea level, datum of 1929.

Average discharge.--22 years, 1,562 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 11,700 cfs Apr. 20 (gage height, 9.41 ft); minimum daily, 290 cfs July 8.

1930-52: Maximum discharge, 28,700 cfs June 16, 1943 (gage height, 14.67 ft), from rating curve extended above 15,000 cfs; maximum gage height, 16.66 ft Mar. 13, 1936 (ice jam); minimum daily discharge, 112 cfs Aug. 28, 1948.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes and Lake Francis (see p. 302).

Revisions (water years).--W 781: 1934(M). W 891: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.2	272	6.0	3,960
3.6	500	7.0	5,850
4.0	885	9.0	10,600
5.0	2,270		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	1,050	1,010	1,500	1,400	1,400	1,200	750	2,750	1,370	571	486		
2	985	1,395	1,395	1,400	1,500	1,200	1,490	2,120	7,640	546	464	702	
3	1,010	2,140	1,150	1,300	1,600	1,200	2,450	1,780	5,510	423	472	862	
4	1,010	*4,050	793	1,100	1,700	1,200	2,270	1,600	2,920	380	472	*882	
5	998	2,200	874	1,000	1,200	1,200	2,090	1,780	2,700	352	*486	660	
6		972	1,360	2,020	900	1,200	1,100	3,290	1,790	2,000	332	479	571
7		*960	1,100	2,530	800	1,100	1,050	3,670	2,530	2,400	298	464	532
8		896	2,200	2,650	950	950	1,000	3,210	2,690	2,380	290	450	486
9		532	2,140	2,020	*1,100	1,200	950	3,410	2,210	1,780	373	436	486
10		436	1,440	1,530	1,150	1,400	900	4,210	1,910	1,430	486	429	479
11		368	1,140	998	1,150	1,450	900	6,430	1,640	1,220	579	443	472
12		337	972	800	1,150	1,400	1,000	5,110	2,180	1,260	560	472	464
13		316	804	650	1,150	1,300	1,100	4,180	3,730	1,280	352	493	464
14		584	782	530	1,150	1,350	1,150	5,150	3,120	948	374	486	436
15		948	1,850	*850	1,250	1,400	1,150	7,650	2,450	793	651	450	443
16		960	1,900	1,100	1,500	1,400	1,100	5,810	2,540	689	804	443	457
17		960	2,100	1,150	1,100	1,400	1,050	5,710	2,430	750	804	571	493
18		960	1,700	1,200	1,250	1,400	1,000	6,830	1,680	1,790	782	588	493
19		972	1,260	1,200	1,450	1,500	*960	*7,820	1,560	1,220	782	508	486
20		948	860	1,200	1,300	1,750	950	9,920	1,370	1,340	804	486	571
21		948	730	1,250	1,200	1,600	980	10,400	*1,850	1,130	760	464	547
22		835	1,100	1,260	1,500	1,500	1,150	6,980	*2,950	793	740	508	532
23		935	1,640	1,250	1,600	1,400	1,350	7,300	2,530	624	730	547	500
24		948	2,320	1,150	1,650	1,350	1,300	7,720	1,860	563	730	500	500
25		1,280	1,480	1,050	1,700	1,350	870	5,090	1,540	1,710	720	493	500
26		1,110	960	900	1,750	1,300	642	4,300	1,790	*1,560	720	479	508
27		699	700	1,150	1,400	1,300	569	4,300	2,240	1,800	720	436	571
28		532	600	1,300	1,200	1,300	669	4,280	1,790	1,260	720	436	571
29		1,160	1,060	1,350	950	1,250	660	4,300	1,410	850	740	436	493
30		910	1,550	1,350	850	-	939	3,850	1,320	660	985	464	486
31		804	-	1,350	1,050	-	828	-	1,100	-	551	443	-
Total	26,498	44,113	39,485	38,400	39,950	31,417	149,970	64,440	52,370	18,759	14,784	16,008	
Mean	855	1,470	1,274	1,239	1,378	1,013	4,999	2,079	1,746	605	477	534	
(†)	-1,156	+846	-188	-1,251	-1,997	-1,245	+3,590	+1,930	+1,298	-938	-867	-868	

Adjusted for change in reservoir contents

Mean	423	1,797	1,204	772	581	549	6,384	2,799	2,243	255	153	199
Cfsm	0.529	2.25	1.51	0.966	0.727	0.687	7.99	3.50	2.81	0.319	0.191	0.249
In.	0.61	2.51	1.74	1.11	0.78	0.79	8.91	4.04	3.13	0.37	0.22	0.28

		Observed			Adjusted			
Calendar year 1951:	Max	8,300	Min	273	Mean	1,419	Mean	1,385
Water year 1951-52:	Max	10,400	Min	290	Mean	1,465	Mean	1,438
							Cfsm	1.73
							In.	23.54
							Cfsm	1.80
							In.	24.49

Peak discharge (base, 10,000 cfs).--Apr. 20 (9:30 to 12 p.m.) 11,700 cfs (9.41 ft).

\* Discharge measurement made on this day.

† Change in contents in First Connecticut and Second Connecticut Lakes and Lake Francis, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Nov. 20, 21, Nov. 27 to Dec. 1, Dec. 12 to Mar. 25.

## CONNECTICUT RIVER BASIN

Upper Ammonoosuc River near Groveton, N. H.

Location.--Lat 44°37'30", long. 71°28'10", on left bank 75 ft upstream from highway bridge, 0.2 mile downstream from Nash Stream, and 2½ miles northeast of Groveton, Coos County.

Drainage area.--232 sq mi.

Records available.--August 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 920 ft (from topographic map).

Average discharge.--12 years, 463 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 4,910 cfs Apr. 21 (gage height, 7.32 ft); minimum, 39 cfs Aug. 29.

1940-52: Maximum discharge, 7,580 cfs June 3, 1947 (gage height, 8.49 ft); minimum, 32 cfs Sept. 14, 1948.

Flood in March 1936 reached a stage of about 10.6 ft, from information by local residents.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some regulation by pond on Nash Stream. Small diversion above station for municipal supply of Berlin.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	34	5.0	1,380
2.8	66	6.0	2,590
3.1	140	7.0	4,280
3.5	290	7.5	5,290
4.0	550		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	350	310	310	220	160	200	1,720	796	219	53	132
2	184	399	310	380	230	160	350	1,270	3,070	193	74	119
3	204	775	290	380	240	160	750	1,030	2,410	172	50	172
4	137	*1,810	270	320	230	155	680	920	1,350	159	114	143
5	129	1,120	295	290	280	160	620	856	1,480	156	62	*100
6	*123	643	498	280	320	165	920	768	1,110	140	68	76
7	123	550	840	250	290	170	1,100	984	1,090	178	*64	64
8	270	896	768	*225	250	165	1,040	1,040	976	155	57	117
9	384	944	602	220	240	160	1,050	992	760	147	52	122
10	258	664	479	220	220	155	1,170	1,020	615	162	50	50
11	219	544	355	210	210	150	1,550	976	570	118	117	114
12	196	496	330	200	200	240	1,440	1,570	645	129	76	47
13	179	526	290	200	190	300	1,220	2,970	622	118	79	85
14	162	514	230	200	190	290	1,600	2,260	474	150	68	44
15	156	888	260	230	200	220	2,220	1,470	410	97	57	94
16	153	808	250	280	200	200	1,970	1,410	355	128	55	50
17	143	824	220	290	190	190	1,920	1,220	358	115	162	102
18	137	708	250	300	190	*180	2,220	952	715	120	196	94
19	129	532	270	320	*190	170	*2,650	816	490	104	107	97
20	196	379	280	290	190	165	3,660	*730	479	118	79	104
21	256	340	290	240	185	160	4,570	1,140	399	94	106	83
22	215	330	400	200	180	190	3,260	1,560	336	85	64	68
23	172	417	420	250	175	230	3,310	1,250	281	76	61	59
24	156	657	340	270	170	210	3,870	976	251	70	76	57
25	215	540	300	240	170	190	2,620	832	*331	68	136	55
26	322	390	280	260	170	180	2,120	976	399	62	130	57
27	243	340	260	300	165	230	2,190	1,070	514	59	123	79
28	207	290	250	330	165	260	2,370	824	389	59	44	79
29	204	320	240	280	160	230	2,320	671	299	64	120	64
30	204	290	230	240	-	210	2,270	629	256	99	56	57
31	313	-	270	210	-	200	-	544	-	59	46	-
Total	6,161	18,284	10,677	8,215	6,010	6,005	57,230	35,446	22,228	3,671	2,602	2,584
Mean	199	609	344	265	207	194	1,908	1,143	741	118	83.9	86.1
(t)	57.2	48.1	51.9	52.5	49.9	52.5	54.2	56.0	50.8	59.4	60.2	62.7

Adjusted for diversion

Mean	202	612	347	268	210	196	1,910	1,146	744	121	86.9	89.4
Cfsm	0.871	2.64	1.50	1.16	0.905	0.845	8.23	4.94	3.21	0.522	0.375	0.385
In.	1.00	2.94	1.72	1.33	0.98	0.98	9.19	5.70	3.58	0.60	0.43	0.45

Observed						Adjusted					
Calendar year 1951: Max		3,880	Min		83	Mean		464	Mean		466
water year 1951-52: Max		4,570	Min		44	Mean		489	Cfsm		2.01
									In.		27.28
									Cfsm		2.12
									In.		28.88

Peak discharge (base, 2,900 cfs).--Apr. 21 (8 to 9 a.m.) 4,910 cfs (7.32 ft); Apr. 24 (6 to 7:30 a.m.) 4,200 cfs (6.36 ft); May 13 (5 to 6:30 p.m.) 3,210 cfs (6.40 ft); June 2 (2:30 to 3 a.m.) 3,500 cfs (6.45 ft).

\* Discharge measurement made on this day.

† Diversion, in millions of gallons, for municipal supply of Berlin. Records furnished by city of Berlin.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 25 to Dec. 4, Dec. 12 to Apr. 7.

## Connecticut River near Dalton, N. H.

Location.--Lat 44°24'35", long. 71°43'00", on left bank 250 ft upstream from highway bridge, 1,200 ft downstream from dam of Gilman Paper Co., and 1½ miles downstream from Dalton, Coos County.

Drainage area.--1,514 sq mi.

Records available.--March 1927 to September 1952. Published as "at Waterford, Vt." 1927-35. Records published for both sites January to September 1935.

Gage.--Water-stage recorder. Datum of gage is 799.89 ft above mean sea level, datum of 1929. Prior to Sept. 30, 1935, chain gage at bridge 10½ miles downstream at mean sea level, Jan. 1, 1935, to June 29, 1937, chain gage at bridge 250 ft downstream at present datum.

Average discharge.--25 years, 2,881 cfs (adjusted to drainage area at present site and for storage).

Extremes.--Maximum discharge during year, 18,300 cfs Apr. 22 (gage height, 17.22 ft); minimum daily, 322 cfs Aug. 4.

1927-52: Maximum discharge, 48,300 cfs Mar. 20, 1936 (gage height, 25.6 ft); minimum daily, 115 cfs Oct. 3, 1937.

Revisions.--The daily discharge for Sept. 2, 1935, as published in Water-Supply Paper 781 and as revised in Water-Supply Paper 821, is considered to be in error and should not be used. No new figures of discharge for that day has been determined.

Remarks.--Records good except those based on chain-gage readings and powerplant records, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes and Lake Francis (see p. 302), and other reservoirs. These reservoirs have a combined capacity of about 8 1/3 billion cu ft.

Revisions.--W 891: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Backwater from aquatic vegetation Oct. 1-19, July 18 to Sept. 30)

6.8	305	12.0	6,130
7.0	420	14.0	10,300
8.0	1,140	16.0	15,100
10.0	3,220	18.0	20,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,510	1,540	2,200	2,400	1,650	1,750	2,180	7,400	3,030	1,560	1,180	466
2	1,670	1,840	2,210	2,600	2,000	1,300	2,720	5,510	11,500	1,320	778	675
3	1,320	2,500	2,310	2,780	2,310	1,950	5,000	4,350	14,100	1,210	539	1,140
4	1,470	*8,030	2,320	2,460	2,520	1,800	5,680	3,780	10,700	1,040	322	1,430
5	1,500	7,340	1,540	2,050	2,560	1,800	5,390	3,720	7,480	916	873	*1,320
6	1,460	4,480	2,500	1,900	2,460	1,800	6,920	3,620	5,970	645	750	985
7	*796	3,220	4,110	1,750	2,320	1,700	8,720	4,060	5,030	743	*799	555
8	1,510	3,420	4,460	*1,730	2,100	1,600	7,840	5,050	5,270	750	799	549
9	1,960	4,820	4,300	1,700	1,950	1,100	7,580	4,680	4,520	659	764	680
10	1,350	4,160	3,590	1,740	1,800	1,500	7,860	4,170	3,670	628	571	610
11	1,090	3,200	2,800	1,900	2,100	1,500	10,000	3,830	3,120	1,000	617	680
12	1,090	2,640	2,180	1,850	2,300	1,450	11,200	4,170	2,970	1,010	750	680
13	988	2,400	*1,750	1,750	2,000	1,850	9,360	6,980	3,040	820	743	645
14	632	2,100	1,300	1,800	1,800	2,050	8,950	8,030	2,760	715	736	511
15	584	2,240	1,150	1,850	2,000	1,900	12,500	6,420	2,140	876	743	569
16	1,510	3,630	900	2,300	2,100	1,700	12,800	5,320	1,950	1,030	736	668
17	1,340	3,900	1,500	2,800	2,000	1,780	11,500	5,230	1,710	1,090	610	610
18	1,410	3,960	1,650	2,610	2,100	*1,820	*11,300	4,460	2,290	1,270	1,190	645
19	1,360	3,380	1,650	2,810	2,100	1,750	12,700	3,800	3,090	1,500	1,240	645
20	1,380	2,710	1,700	2,750	*2,100	1,600	14,300	*3,300	2,630	1,150	908	940
21	1,080	2,170	1,900	2,400	2,300	1,400	17,000	3,410	2,490	836	792	581
22	1,430	1,480	2,250	2,000	2,100	1,690	17,800	5,270	1,810	1,170	680	490
23	1,510	1,670	2,600	2,000	2,000	2,060	15,500	5,750	2,000	1,210	799	668
24	1,240	3,290	2,450	2,600	1,800	2,550	14,800	4,600	1,430	1,190	656	700
25	1,590	3,670	2,290	2,600	1,850	2,430	14,100	3,740	*1,180	1,190	526	645
26	2,060	2,900	2,000	2,400	1,950	2,200	10,900	3,830	2,650	1,160	597	700
27	2,110	2,260	1,900	2,500	1,900	1,910	8,970	4,670	3,250	746	659	781
28	1,100	1,530	1,850	2,600	1,850	2,140	8,800	4,380	3,180	785	708	480
29	1,470	1,380	2,000	2,500	1,850	2,070	8,780	3,570	2,290	1,070	673	619
30	1,830	1,920	1,950	1,900	-	1,380	8,660	3,090	2,030	1,040	856	680
31	1,680	-	2,000	1,700	-	2,250	-	2,780	-	1,350	673	-
Total	43,050	93,980	69,270	68,710	59,870	55,780	299,810	142,970	119,280	31,879	23,047	21,367
Mean	1,389	3,153	2,235	2,216	2,064	1,799	9,994	4,612	3,976	1,028	743	712
(t)	1,156	+846	-188	-1,251	-1,997	-1,245	+3,590	+1,930	+1,288	-938	-867	-868

## Adjusted for change in reservoir contents

Mean Cfsm In.	957 0.632 0.73	3,459 2.28 2.55	2,164 1.43 1.65	1,749 1.16 1.33	1,267 0.837 0.90	1,335 0.882 1.02	11,379 7.52 8.39	5,333 3.52 4.06	4,473 2.95 3.30	678 0.448 0.52	420 0.277 0.32	377 0.249 0.28
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Observed				Adjusted			
Calendar year 1951: Max	15,600	Min	275	Mean	2,664	Mean	2,630
Water year 1951-52: Max	17,800	Min	322	Mean	2,812	Mean	2,784
						Cfsm	1.74
						In.	23.59
						Cfsm	1.84
						In.	25.05

Peak discharge (base, 18,500 cfs).--Apr. 22 (6:30 a.m.) 18,300 cfs (17.22 ft).

\* Discharge measurement made on this day.

+ Change in contents in First Connecticut and Second Connecticut Lakes and Lake Francis, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Dec. 13 to Jan. 2, Jan. 5-17, Jan. 21 to Feb. 2, Feb. 8-17, Feb. 20 to Mar. 21.

Note.--Discharge for periods Feb. 8-19, Sept. 2-4, 7-30 computed from twice-daily chain-gage readings and powerplant records.

## CONNECTICUT RIVER BASIN

East Branch Passumpsic River near East Haven, Vt.  
(Formerly published as Passumpsic River near East Haven)

Location.--Lat 44°38'02", long. 71°53'53", on right bank in Burke, Caledonia County, 2.1 miles south of East Haven, Essex County.

Drainage area.--53.8 sq mi.

Records available.--July 1939 to October 1945, October 1948 to September 1952. Prior to October 1951, published as Passumpsic River near East Haven.

Gage.--Water-stage recorder. Datum of gage is 945.88 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--10 years, 98.8 cfs.

Extremes.--Maximum discharge during year, 1,790 cfs June 1 (gage height, 5.60 ft); minimum, 20 cfs Aug. 28, 29.  
1939-45, 1948-52: Maximum discharge, 2,180 cfs May 28, 1940 (gage height, 6.21 ft); minimum, 14 cfs Oct. 1, 1948, Aug. 27, 1949.  
Maximum stage known, about 12.6 ft sometime in November 1927, from information by local resident.

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

Revisions.--W 1141: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3

Nov. 4 to Sept. 30

0.82 20  
1.1 38  
1.4 72

0.8 20 2.0 179  
1.1 41 3.0 470  
1.4 72 4.0 900  
1.7 119

Note.--Same as following table above 1.4 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	*55	58	80	56	38	68	224	454	71	27	27
2	30	44	61	90	59	37	190	190	860	65	25	117
3	*30	257	59	80	62	37	224	188	318	60	24	119
4	30	254	58	72	59	38	177	160	247	57	24	82
5	28	117	110	67	30	39	182	166	231	55	30	49
6	27	79	197	64	78	39	387	168	177	51	30	39
7	26	84	175	62	69	38	328	219	315	48	26	35
8	65	266	221	59	63	36	266	190	207	46	*24	*30
9	51	148	146	57	59	35	292	160	179	45	23	27
10	38	99	112	57	57	35	370	140	144	40	23	28
11	34	83	90	55	54	35	487	132	140	113	24	30
12	31	73	*83	53	53	90	334	208	148	72	41	27
13	29	67	60	*52	50	75	283	274	127	55	39	26
14	27	81	47	49	*49	57	495	216	107	48	30	25
15	27	184	50	60	48	52	552	175	94	45	26	24
16	27	138	48	80	47	51	390	193	83	42	27	26
17	26	162	46	62	47	49	*453	158	127	39	86	29
18	26	110	54	90	50	48	585	136	208	36	51	28
19	26	88	60	80	51	48	576	121	130	80	35	31
20	24	72	58	66	47	47	827	110	116	65	30	38
21	24	66	74	52	46	49	634	213	92	46	27	32
22	23	58	90	54	45	64	484	229	80	44	39	30
23	24	79	78	76	43	*65	596	166	72	39	35	28
24	24	94	70	66	43	67	453	136	66	37	30	29
25	100	71	66	59	41	62	368	142	397	35	27	37
26	64	84	60	56	40	61	340	*234	190	32	24	34
27	44	59	54	84	39	75	343	202	*164	51	23	42
28	37	54	53	75	38	68	343	148	114	44	22	32
29	38	60	54	65	38	62	356	128	94	40	21	28
30	36	54	56	56	-	80	283	116	83	33	45	27
31	43	-	60	54	-	67	-	102	-	30	30	-
Total	1,090	3,120	2,510	2,032	1,521	1,623	11,626	5,320	5,764	1,564	968	1,156
Mean	35.2	104	81.0	65.5	52.4	52.4	388	172	192	50.5	31.2	38.5
Cfsm	0.654	1.93	1.51	1.22	0.974	0.974	7.21	3.20	3.57	0.939	0.580	0.716
In.	0.75	2.16	1.74	1.40	1.05	1.12	8.04	3.68	3.98	1.08	0.67	0.80
Calendar year 1951: Max	896				Min 21		Mean 97.7		Cfsm 1.82		In. 24.65	
Water year 1951-52: Max	860				Min 21		Mean 105		Cfsm 1.95		In. 26.47	

Peak discharge (base, 800 cfs).--Apr. 20 (8 p.m.) 1,100 cfs (4.41 ft); June 1 (12 p.m.) 1,790 cfs (5.80 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 7, 20-23, Nov. 25 to Dec. 3, Dec. 11 to Mar. 17, Mar. 21-23, 30, Apr. 2.



## Moose River at Victory, Vt.

Location.--Lat 44°30'40", long. 71°50'15", on right bank at Victory, Essex County, 2.7 miles upstream from highway bridge.

Drainage area.--75 sq mi, approximately.

Records available.--January 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,103.99 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--5 years, 133 cfs.

Extremes.--Maximum discharge during year, 2,380 cfs June 2 (gage height, 10.15 ft), from rating curve extended above 1,400 cfs by logarithmic plotting; minimum not determined. 1947-52: Maximum discharge, 2,940 cfs Apr. 21, 1950 (gage height, 10.89 ft), from rating curve extended above 1,400 cfs by logarithmic plotting; minimum, 3.7 cfs Sept. 16, 17, 1948.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or backwater from beaver dams, which are fair.

Rating tables, water year 1951-52, except periods of ice effect and backwater from beaver dams (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 20

Apr. 21 to Sept. 30

3.0	24	4.5	151	2.5	5.3	6.0	443
3.5	52	5.0	224	3.0	21	7.0	760
4.0	94	6.0	443	3.5	52	8.0	1,170
				4.0	98	9.0	1,680
				5.0	229	10.0	2,280

Note.--Same as following table above 6.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	106	84	130	72	52	99	295	250	42	8.9	6.2
2	38	87	89	150	75	52	190	228	1,860	34	7.9	10
3	36	246	84	120	85	53	375	196	1,000	30	7.4	54
4	*36	820	77	100	79	54	443	181	480	27	7.3	60
5	*33	528	99	94	105	54	393	182	440	26	8.2	28
6	30	215	296	88	130	54	476	177	303	22	7.8	*17
7	28	167	321	81	115	53	630	240	336	19	7.2	13
8	115	417	331	75	100	51	587	240	286	17	6.8	11
9	136	432	240	72	94	49	557	199	216	16	*6.4	9.2
10	80	232	181	70	90	45	599	178	174	16	6.4	8.4
11	58	177	135	66	84	47	815	163	159	41	7.0	8.4
12	52	150	120	64	80	82	792	270	174	55	11	8.9
13	48	131	90	63	*74	120	624	440	152	28	17	8.4
14	42	133	64	*62	72	91	605	355	116	20	14	7.6
15	40	312	70	70	71	75	1,080	256	94	16	11	7.6
16	38	266	67	130	70	68	863	267	77	14	9.5	8.6
17	36	324	64	120	70	63	*781	224	87	12	27	10
18	34	238	82	125	75	57	935	184	285	11	25	9.9
19	33	171	90	150	75	55	1,160	159	148	34	15	15
20	32	137	88	110	70	54	1,300	141	104	54	11	90
21	31	115	130	85	67	56	1,570	247	82	29	10	37
22	30	97	165	70	65	84	983	393	64	21	10	25
23	31	122	135	74	62	*96	907	281	54	17	11	20
24	31	179	115	105	60	99	1,010	200	47	14	12	17
25	110	145	100	91	58	96	694	175	95	13	11	15
26	147	115	90	76	56	93	539	315	96	11	9.2	16
27	88	105	84	105	54	108	524	360	*177	9.9	7.4	37
28	65	85	74	120	53	110	530	*232	90	21	7.0	28
29	69	88	80	95	53	101	530	185	58	14	6.6	20
30	69	82	85	80	-	93	454	178	52	13	7.0	15
31	*68	-	92	74	-	99	-	145	-	10	6.0	-
Total	1,727	6,422	3,822	2,915	2,214	2,264	21,045	7,286	7,556	706.9	317.0	621.2
Mean	55.7	214	123	94.0	76.3	73.0	702	235	252	22.8	10.2	20.7
Cfsm	0.743	2.85	1.64	1.25	1.02	0.973	9.36	3.13	3.36	0.304	0.136	0.276
In.	0.86	3.18	1.90	1.45	1.10	1.12	10.44	3.61	3.75	0.35	0.16	0.31

Calendar year 1951: Max 1,130 Min 16 Mean 145 Cfsm 1.93 In. 26.19  
 Water year 1951-52: Max 1,860 Min 6.0 Mean 155 Cfsm 2.07 In. 28.23

Peak discharge (base, 1,000 cfs).--Apr. 15 (3:30 to 4:30 p.m.), 1,240 cfs (8.15 ft); Apr. 21 (3:30 to 4:30 a.m.), 1,880 cfs (9.33 ft); June 2 (10 a.m. to 12 m.), 2,380 cfs (10.15 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 25 to Dec. 1, Dec. 3, Dec. 11 to Mar. 26, Mar. 28, 30, Apr. 2, 3 (no gage-height record Dec. 17 to Jan. 13; discharge estimated on basis of weather records, recorded range in stage, and records for Moose River at St. Johnsbury, Passumpsic River near East Haven, and Ammonoosuc River at Bethlehem Junction, N. H. Backwater from beaver dams Aug. 4 to Sept. 6.

## Moose River at St. Johnsbury, Vt.

Location.--Lat 44°25'20", long. 72°00'05", on left bank at St. Johnsbury, Caledonia County, half a mile upstream from mouth.

Drainage area.--126 sq mi.

Records available.--August 1928 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 585 ft (from topographic map). Prior to Nov. 16, 1934, chain gage at site a quarter of a mile upstream at different datum.

Average discharge.--24 years, 221 cfs.

Extremes.--Maximum discharge during year, 3,140 cfs June 2 (gage height, 4.35 ft); maximum gage height, 5.62 ft Jan. 31 (ice jam); minimum discharge, 8.8 cfs Sept. 1.

1928-52: Maximum discharge, 5,800 cfs (revised) Apr. 30, 1929 (gage height, 8.3 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 3,400 cfs; minimum, 6.2 cfs Sept. 17, 18, 1948, Aug. 27, 28, 1949.

Revisions.--The figures of maximum discharge for the water years 1929-34, 1941, 1946, some of which have been revised, superseding those published in the water-supply papers indicated, are contained in the following table:

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
681, 726....	1929	Apr. 30, 1929	5,800	+8.3
696.....	1930	Apr. 8, 1930	1,450	+6.1
711.....	1931	Apr. 11, 1931	2,360	+5.15
726.....	1932	Apr. 12, 1932	1,900	+6.6
741.....	1933	Apr. 18, 1933	4,670	+7.9
756.....	1934	Apr. 25, 1934	5,660	+8.25
-	1941	Apr. 17, 1941	+1,520	4.14
-	1946	Mar. 30, 1946	+2,020	3.93

† From graph based on gage readings.

‡ Not previously published.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation caused by powerplant above station.

Revisions.--W 801: Drainage area. Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1929 and 1930, superseding those published in Water-Supply Papers 681 and 696, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1929		1929		1930	
Apr. 6.....	1,310	Apr. 29.....	1,900	Apr. 7.....	1,240
7.....	1,610	30.....	3,660	8.....	1,380
8.....	1,700	May 1.....	1,040	9.....	1,170
9.....	3,660	3.....	1,900	14.....	1,170
10.....	4,410	4.....	3,910	15.....	1,310
11.....	1,170	5.....	1,310	16.....	1,310
26.....	1,100	6.....	1,170	17.....	910
27.....	1,900	7.....	1,170		
28.....	1,170	8.....	1,040		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April 1929.....	4,410	368	1,120	8.89	9.95
May.....	3,910	107	687	5.45	6.28
Water year 1928-29.....	4,410	10	269	2.13	28.99
April 1930.....	1,380	247	655	5.20	5.80
Water year 1929-30.....	1,380	13	194	1.54	20.86

## Moose River at St. Johnsbury, Vt.--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 24

Jan. 25 to Sept. 30

1.9	36	3.4	357	1.4	10	3.4	357
2.2	64	3.7	620	1.7	25	3.7	620
2.6	111	3.8	830	2.0	44	3.8	830
3.0	186	3.9	1,130	2.5	94	3.9	1,130
3.2	248			3.0	188	4.3	2,940

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	*118	125	150	110	77	229	436	672	84	15	10
2	50	120	130	160	115	76	780	319	2,660	68	14	34
3	46	462	120	170	125	78	980	267	2,120	58	13	*64
4	*44	1,040	110	150	120	80	920	242	788	53	13	75
5	42	809	140	140	140	82	1,040	246	620	48	14	54
6	38	330	400	130	170	82	1,760	239	470	41	13	35
7	36	240	462	120	160	78	1,360	351	486	35	12	27
8	36	490	430	115	150	74	1,400	372	438	31	12	21
9	186	580	372	110	140	68	1,290	280	331	28	11	17
10	118	350	270	105	130	66	1,360	242	267	26	11	16
11	85	250	177	100	125	70	1,760	223	249	48	*11	15
12	72	220	150	97	120	115	1,400	384	275	72	18	14
13	65	190	*100	*95	*115	190	1,130	641	236	50	26	14
14	58	190	68	92	110	170	1,360	554	183	36	22	13
15	52	415	76	100	105	130	1,850	394	151	29	19	13
16	49	394	73	160	100	115	*1,570	394	128	25	17	14
17	47	423	70	135	100	105	1,210	338	119	22	35	15
18	42	351	90	140	105	100	1,250	262	340	19	36	16
19	42	280	110	170	105	100	1,610	226	250	58	23	28
20	39	200	120	150	105	100	1,660	199	149	74	18	68
21	38	175	140	120	100	107	1,940	308	118	50	17	69
22	37	150	200	100	98	*149	1,710	587	100	36	17	47
23	36	170	170	110	92	186	1,290	452	83	29	*18	36
24	38	240	150	140	89	*202	1,570	289	73	24	19	32
25	92	220	130	125	86	191	1,010	249	101	23	19	30
26	194	170	115	110	83	194	809	*500	288	20	16	29
27	128	160	110	150	81	232	725	576	378	17	13	39
28	96	125	100	160	79	232	725	366	*192	30	12	49
29	99	130	110	140	78	213	725	271	128	24	11	36
30	101	120	120	125	-	210	662	253	108	22	12	30
31	93	-	130	115	-	223	-	210	-	17	10	-
Total	2,216	9,092	5,068	3,984	3,234	4,095	37,085	10,670	12,481	1,197	517	980
Mean	71.5	303	163	129	112	132	1,236	344	418	58.8	16.7	32.7
Cfsm	0.567	2.40	1.29	1.02	0.889	1.05	9.81	2.73	3.30	0.306	0.133	0.260
In.	0.65	2.68	1.50	1.16	0.95	1.21	10.95	3.15	3.68	0.35	0.15	0.29

Calendar year 1951: Max 1,850 Min 19 Mean 228 Cfsm 1.81 In. 24.51  
 Water year 1951-52: Max 2,660 Min 10 Mean 248 Cfsm 1.97 In. 26.74

Peak discharge (base, 1,700 cfs).--Apr. 6 (6 a.m.) 1,940 cfs (4.09 ft); Apr. 11 (10:30 p.m.) 1,990 cfs (4.10 ft); Apr. 15 (8:30 a.m.) 2,040 cfs (4.11 ft); Apr. 21 (9 a.m.) 2,220 cfs (4.15 ft); June 2 (8 to 10 p.m.) 3,140 cfs (4.35 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 6-15, Nov. 19 to Dec. 6, Feb. 1, 2, July 21 to Aug. 10, Aug. 14-22; discharge estimated on basis of weather records, recorded range in stage when available, and records for Moose River at Victory, Passumpsic River near East Haven, and Passumpsic River at Passumpsic. Stage-discharge relation affected by ice Dec. 12 to Mar. 19, Mar. 30, Apr. 2.

## Passumpsic River at Passumpsic, Vt.

Location.--Lat 44°21'55", long. 72°02'20", on right bank 0.7 mile upstream from Waterandrick Brook and 1 mile downstream from dam and village of Passumpsic, Caledonia County.

Drainage area.--436 sq mi.

Records available.--November 1928 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map).

Average discharge.--24 years, 727 cfs.

Extremes.--Maximum discharge during year, 9,670 cfs June 2 (gage height, 14.41 ft); minimum daily, 78 cfs Aug. 2, 10.

1928-52: Maximum discharge, 16,000 cfs Mar. 18, 1936 (gage height, 21.23 ft), from rating curve extended above 9,200 cfs on basis of computation of peak flow over dam; minimum daily, 13 cfs Sept. 12, 1948.

Maximum stage known, about 31.5 ft in November 1927, from information by local resident.

Revisions.--The figures of maximum discharge for the water years 1929-31, and 1944 have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
681.....	1929	May 4, 1929	6,370	10.80
696.....	1930	Apr. 8, 1930	5,230	9.38
711.....	1931	Apr. 11, 1931	4,350	8.28
-	1944	Nov. 9, 1943	15,200	-

† Not previously published.

Remarks.--Records excellent except those below 200 cfs, which are good, and those for periods of ice effect or no gage-height record, which are fair. Flow regulated by power-plants above station.

Revisions.--W 781: 1933(M). W 871: Drainage area. Revised figures of discharge, in cubic feet per second, for the high-water periods in the water year 1929, superseding figures published in Water-Supply Paper 681, are given herewith.

1929		1929		1929	
Apr. 8.....	4,210	Apr. 29.....	4,770	May 3.....	5,570
9.....	5,730	30.....	4,450	4.....	5,090
10.....	4,450				

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April.....	5,730	1,300	2,590	5.94	6.63
May.....	5,570	550	1,830	4.20	4.84

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	395	470	600	420	310	730	1,310	2,230	415	*139	112
2	187	*346	520	700	460	310	1,950	1,140	8,090	366	78	340
3	*189	1,440	480	740	500	300	2,590	1,000	3,720	305	95	411
4	191	2,380	460	620	470	300	2,130	907	2,080	291	133	453
5	177	1,450	800	560	560	310	2,340	942	2,130	287	124	274
6	171	772	*1,500	530	700	310	4,690	900	1,500	250	122	190
7	175	694	1,330	510	660	310	3,790	1,240	1,750	232	131	136
8	378	1,700	1,440	470	580	300	3,390	1,160	1,520	225	127	152
9	529	1,400	1,110	440	530	280	3,550	942	1,240	199	99	117
10	347	907	900	430	520	270	3,780	810	1,030	210	78	128
11	274	711	530	410	500	280	4,500	778	863	373	125	120
12	237	640	660	390	490	660	3,450	1,290	1,140	450	127	*124
13	210	540	500	370	470	720	2,820	1,730	970	302	219	107
14	197	535	380	*360	*450	560	3,700	1,400	765	233	174	55
15	192	1,120	360	380	430	450	4,670	1,150	645	212	154	130
16	206	1,030	400	600	410	410	*3,560	1,240	581	166	101	124
17	178	1,300	380	500	410	400	3,400	1,030	562	156	243	107
18	170	977	440	560	420	390	3,800	865	1,320	160	350	159
19	181	729	490	640	430	380	4,190	747	837	369	207	172
20	173	584	480	540	410	380	4,630	681	651	439	142	214
21	160	520	560	470	390	390	5,030	1,170	557	289	162	221
22	161	450	720	390	380	560	3,510	1,660	475	253	129	161
23	168	540	760	480	370	640	3,400	1,260	430	222	*136	159
24	171	798	620	550	360	*740	3,280	921	388	180	108	144
25	386	711	550	480	360	660	2,450	851	762	180	150	140
26	572	562	520	460	340	640	2,070	1,700	1,360	165	120	144
27	362	500	450	540	330	800	1,940	1,560	1,520	99	113	183
28	295	430	420	620	330	720	1,900	*1,110	*759	200	113	150
29	330	460	430	530	320	660	1,980	885	535	171	101	148
30	332	430	440	470	-	640	1,700	830	524	155	103	149
31	*283	-	470	430	-	700	-	699	-	147	108	-
Total	7,800	25,051	19,570	15,760	13,000	14,780	94,920	33,888	41,034	7,701	4,311	5,323
Mean	252	835	631	508	448	477	3,164	1,093	1,368	248	139	177
Cfsm	0.578	1.92	1.45	1.17	1.03	1.09	7.26	2.51	3.14	0.569	0.319	0.406
In.	0.67	2.14	1.67	1.34	1.11	1.26	8.10	2.89	3.50	0.66	0.37	0.45

Calendar year 1951: Max 5,160 Min 112 Mean 743 Cfsm 1.70 In. 23.15  
Water year 1951-52: Max 8,090 Min 78 Mean 774 Cfsm 1.78 In. 24.16

Peak discharge (base, 5,000 cfs).--Apr. 14 (12 p.m.) 5,240 cfs (9.39 ft); Apr. 21 (2:30 to 3:30 a.m.) 5,620 cfs (9.85 ft); June 2 (6 to 7 a.m.) 9,670 cfs (14.41 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 28 to Dec. 5, Dec. 17 to Jan. 13, Jan. 30 to Feb. 12; discharge estimated on basis of weather records, recorded range in stage, and records for Passumpsic River near East Haven, Moose River at St. Johnsbury, and Ammonoosuc River near Bath, N. H. Stage-discharge relation affected by ice Nov. 21-23, 27, Dec. 11 to Apr. 2.

## Ammonoosuc River at Bethlehem Junction, N. H.

Location.--Lat 44°16'10", long. 71°37'50", on left bank 0.25 mile upstream from Pierce Bridge and Bethlehem Junction, 0.8 mile upstream from unnamed tributary entering from left, 3 miles east of Bethlehem, Grafton County, and 3.4 miles downstream from Little River.

Drainage area.--87.6 sq mi.

Records available.--August 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,180.74 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--13 years, 206 cfs.

Extremes.--Maximum discharge during year, 5,540 cfs June 2 (gage height, 8.65 ft); minimum, 27 cfs Aug. 29.

1939-52: Maximum discharge, 9,730 cfs Nov. 28, 1950 (gage height, 10.86 ft), from rating curve extended above 4,100 cfs by logarithmic plotting; minimum, 21 cfs Nov. 22, 1947 (caused by anchor ice upstream), but may have been less in February 1948 during period of ice effect.

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	23	4.0	765
1.1	38	5.0	1,310
1.5	79	6.0	2,110
2.0	157	7.0	3,220
3.0	404		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	144	145	175	120	66	102	549	1,220	129	37	29
2	109	*116	145	270	130	65	363	438	2,290	111	*34	71
3	99	1,540	135	180	120	*67	392	377	711	100	34	*82
4	96	324	130	145	115	65	250	358	518	93	34	90
5	*91	416	257	130	200	70	281	305	524	89	36	53
6	87	296	1,010	135	170	72	850	324	386	79	37	43
7	88	398	498	*110	130	71	538	726	837	74	35	40
8	435	1,040	371	105	115	68	371	584	504	68	34	38
9	260	486	311	110	110	65	380	566	383	65	32	36
10	175	343	278	115	100	54	504	577	314	62	31	35
11	148	290	*213	98	*95	76	737	625	314	82	*34	35
12	134	253	204	*100	88	180	521	1,720	457	78	37	34
13	120	226	135	100	76	160	413	1,120	366	64	39	34
14	114	223	105	100	80	105	703	741	280	57	34	34
15	108	332	130	*125	82	88	1,000	594	238	53	32	33
16	103	258	125	220	82	81	617	577	204	52	30	37
17	99	263	110	140	81	*77	877	454	204	48	98	35
18	93	226	125	180	78	74	*889	383	342	46	70	33
19	*91	193	140	160	80	71	1,000	*363	218	80	44	32
20	86	166	135	135	*75	71	1,970	377	189	82	38	37
21	83	150	230	110	74	81	1,200	688	161	59	34	34
22	80	146	300	90	73	105	875	920	141	54	34	32
23	79	232	205	200	70	110	2,190	621	129	47	34	32
24	78	407	170	190	70	99	1,040	500	117	43	34	35
25	247	276	155	120	69	*93	745	477	141	42	32	35
26	168	211	140	140	69	96	741	818	330	40	31	34
27	124	179	130	220	68	130	905	637	522	58	30	45
28	111	140	115	180	67	119	935	451	*226	67	29	38
29	117	155	125	*145	86	102	1,100	401	168	47	28	33
30	105	140	135	110	-	96	828	374	157	43	32	32
31	122	-	205	100	-	96	-	314	-	58	29	-
Total	3,965	10,169	6,612	4,438	2,753	2,783	23,117	17,937	12,591	2,050	1,147	1,211
Mean	128	339	213	143	94.9	89.8	771	579	420	66.1	37.0	40.4
Cfs/m	1.46	3.87	2.43	1.63	1.08	1.03	8.80	6.61	4.79	0.755	0.422	0.461
In.	1.68	4.32	2.81	1.88	1.17	1.18	9.81	7.62	5.35	0.87	0.49	0.51

Calendar year 1951: Max 1,950 Min 58 Mean 240 Cfs/m 2.74 In. 37.16  
 Water year 1951-52: Max 2,290 Min 28 Mean 243 Cfs/m 2.77 In. 37.69

Peak discharge (base, 2,700 cfs).--Nov. 3 (4 p.m.) 3,510 cfs (7.24 ft); Apr. 23 (10:30 a.m.) 3,230 cfs (7.01 ft); June 2 (1 a.m.) 5,540 cfs (8.65 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28 to Dec. 4, Dec. 13 to Mar. 23, Mar. 30, 31.

## Ammonoosuc River near Bath, N. H.

Location.--Lat 44°09'15", long. 71°59'10", on left bank 0.4 mile downstream from Wild Ammonoosuc River and 1½ miles downstream from Bath, Grafton County.

Drainage area.--395 sq mi.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 454.14 ft above mean sea level, datum of 1929 (levels by Connecticut River Power Co.).

Average discharge.--17 years, 667 cfs.

Extremes.--Maximum discharge during year, 14,200 cfs June 2 (gage height, 11.15 ft); minimum daily, 69 cfs Aug. 31.

1935-52: Maximum discharge, 27,900 cfs Mar. 18, 1936 (gage height, 15.40 ft), from rating curve extended above 13,000 cfs; minimum daily, 48 cfs Sept. 3, 1939.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low flow caused by small powerplants above station.

Revisions.--W 871: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	60	4.0	1,120
1.5	88	5.0	2,000
2.0	168	6.0	3,100
2.5	310	8.0	6,300
3.0	525	10.0	10,900

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*272	364	520	570	350	210	718	1,340	2,410	372	109	77
2	244	348	520	720	380	210	2,560	1,060	8,790	310	93	*167
3	233	2,940	480	550	390	220	2,850	920	2,700	269	88	275
4	239	3,760	455	440	380	210	2,150	813	1,780	244	85	296
5	220	1,520	675	390	600	220	2,580	771	1,800	236	100	204
6	204	966	2,180	400	540	230	5,600	741	1,320	204	117	145
7	209	899	1,600	350	460	225	3,390	1,420	1,960	190	100	109
8	875	2,540	1,120	350	400	215	2,470	1,410	1,580	170	91	107
9	827	1,540	953	350	370	210	2,450	1,220	1,180	163	87	98
10	480	1,010	888	370	330	210	2,700	1,240	940	152	74	100
11	392	801	*630	320	300	220	3,700	1,290	855	190	103	98
12	352	718	605	310	*290	1,000	2,550	2,740	1,010	217	102	82
13	303	620	417	310	240	1,100	2,030	2,320	1,030	173	124	8
14	278	580	320	310	250	650	3,750	1,720	765	150	110	94
15	269	900	390	*380	260	520	*4,960	1,450	625	132	95	96
16	250	801	370	660	270	440	2,680	1,440	540	124	93	88
17	233	868	350	470	260	410	2,500	1,160	1,010	124	174	84
18	222	753	390	580	240	380	2,750	972	691	109	282	95
19	220	625	450	500	250	360	2,990	874	580	166	168	90
20	200	535	460	450	240	350	4,300	855	495	239	129	80
21	197	470	650	350	235	364	3,530	1,580	422	190	106	73
22	202	409	840	300	230	525	2,330	2,060	376	147	93	94
23	197	565	650	450	225	652	4,070	1,660	*340	133	99	84
24	187	1,050	520	640	220	674	2,840	1,220	303	116	80	88
25	484	946	460	500	220	595	1,910	1,150	364	103	92	102
26	570	660	430	420	220	630	1,680	2,330	581	98	82	110
27	376	570	370	580	220	990	1,940	*1,780	1,990	127	84	101
28	314	380	330	660	215	933	2,090	1,280	819	496	72	105
29	401	520	360	500	215	777	2,210	985	525	246	75	118
30	*364	500	400	370	-	741	2,030	a850	466	161	79	90
31	321	-	590	330	-	789	-	a750	-	*118	69	-
Total	10,135	29,158	19,353	13,820	8,800	15,260	84,308	42,001	36,247	5,869	3,255	3,428
Mean	327	972	624	446	303	492	2,810	1,355	1,275	189	105	114
Cfsm	0.829	2.46	1.58	1.13	0.767	1.25	7.11	3.43	3.23	0.478	0.266	0.269
In.	0.95	2.76	1.82	1.30	0.83	1.44	7.94	3.95	3.60	0.55	0.31	0.32

Calendar year 1951: Max 5,950

Min 157

Mean 724

Cfsm 1.83

In. 24.87

Water year 1951-52: Max 8,790

Min 69

Mean 748

Cfsm 1.89

In. 25.76

Peak discharge (base, 6,500 cfs).--Nov. 3 (10:30 to 11 p.m.) 7,940 cfs (8.81 ft); Apr. 14 (12 p.m.) 7,100 cfs (8.42 ft); June 2 (5 a.m.) 14,200 cfs (11.15 ft).

\* Discharge measurement made on this day.

No gage-height record; discharge estimated on basis of recorded range in stage and records for station at Bethlehem Junction.

Note.--Stage-discharge relation affected by ice Nov. 26 to Dec. 4, Dec. 14 to Mar. 20, Mar. 27.

## Connecticut River at Wells River, Vt.

Location.--Lat 44°09'15", long. 72°02'35", on right bank 200 ft downstream from bridge on U. S. Highway 302, at Wells River, Orange County, 400 ft upstream from Wells River, and 1,200 ft downstream from Ammonoosuc River.

Drainage area.--2,644 sq mi.

Records available.--December 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 399.75 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 37,100 cfs June 2 (gage height, 12.12 ft); minimum daily, 344 cfs Sept. 21.  
1949-52: Maximum discharge, 39,600 cfs Apr. 21, 1950 (gage height, 12.62 ft); minimum daily, that of Sept. 21, 1952.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by powerplants, by First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond (see p. 302), and other reservoirs (combined usable capacity, about 9½ billion cu ft).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 14

Apr. 15 to Sept. 30

1.2	890	5.0	7,020	1.1	344	5.0	6,700
2.0	1,630	6.0	10,200	1.5	620	7.0	14,200
3.0	2,900	8.5	20,400	2.0	1,130	9.0	22,700
4.0	4,580			3.0	2,530	11.5	34,000
				4.0	4,250		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,160	2,470	2,620	4,100	2,800	2,400	5,700	12,800	7,350	3,160	*1,240	396
2	*2,190	2,430	2,440	4,800	2,500	2,100	9,410	10,400	33,500	2,970	986	1,490
3	2,140	6,030	3,000	5,200	2,650	2,200	14,500	5,920	23,700	1,740	875	1,770
4	2,180	13,900	3,170	4,500	3,500	3,200	13,100	3,930	17,800	610	1,000	1,980
5	2,090	14,000	*5,300	3,900	4,200	3,100	13,500	5,850	14,600	750	1,150	1,780
6	2,080	7,440	8,230	2,700	4,500	2,550	18,800	6,230	13,200	647	1,120	1,640
7	1,990	6,770	7,980	3,100	4,300	2,400	17,600	7,420	11,600	1,090	1,120	*835
8	2,740	9,740	7,810	3,000	3,800	2,300	17,400	8,650	9,080	1,470	1,100	1,000
9	2,870	9,080	7,990	3,000	3,000	2,150	16,500	9,160	8,620	1,580	653	1,300
10	2,490	8,020	5,510	3,200	2,900	2,100	17,200	7,950	7,150	1,510	435	1,390
11	2,400	4,300	5,200	3,000	3,300	2,700	19,800	5,150	6,580	1,730	874	1,380
12	2,300	3,140	4,130	2,500	3,600	3,800	20,000	9,040	6,060	1,870	1,130	1,210
13	2,170	4,080	3,300	2,100	3,600	4,000	17,500	12,800	6,940	1,420	1,350	620
14	1,630	4,240	2,900	2,450	3,500	4,200	18,300	13,200	4,060	1,280	1,150	432
15	1,880	5,840	2,300	3,400	3,000	3,100	*24,700	11,500	3,150	1,540	973	752
16	2,160	6,880	1,700	4,500	2,500	2,400	21,400	9,460	4,830	1,550	590	1,100
17	2,100	7,980	1,800	5,200	2,250	2,700	20,200	9,480	4,000	1,620	674	1,020
18	2,270	6,320	2,600	5,200	2,200	2,800	20,000	6,380	4,260	1,470	1,040	1,130
19	2,300	5,380	2,600	4,100	3,000	3,100	21,800	6,290	5,370	1,480	1,370	1,080
20	1,660	4,680	2,650	3,400	3,800	3,100	23,700	6,230	4,160	1,030	1,690	454
21	946	4,340	3,500	4,000	2,800	3,000	26,400	7,460	2,910	1,740	1,510	544
22	1,320	2,420	3,800	3,900	3,000	2,700	25,400	9,960	2,720	2,230	1,250	1,160
23	1,770	3,130	4,200	3,600	2,800	2,900	24,600	10,400	2,750	1,980	890	1,420
24	1,860	4,510	5,000	3,700	2,500	4,300	22,200	8,060	*3,770	1,610	435	1,350
25	2,550	5,200	3,600	3,500	2,400	5,200	20,000	5,950	3,640	1,680	954	1,350
26	2,790	6,300	4,500	3,100	3,100	5,600	16,600	9,240	3,410	1,640	1,370	1,390
27	2,510	3,950	3,900	3,800	3,700	6,400	15,900	*10,600	9,560	705	1,330	931
28	2,180	3,390	4,000	4,200	3,000	6,000	14,800	8,960	5,520	1,580	1,620	356
29	2,690	3,200	2,800	4,400	2,350	5,600	14,600	7,240	3,660	*1,760	1,130	1,000
30	*2,890	2,830	2,700	3,800	-	3,900	14,200	5,400	4,130	1,590	402	1,380
31	2,800	-	3,400	3,800	-	5,000	-	3,320	-	1,500	396	-
Total	68,086	171,970	124,410	115,050	90,550	107,000	545,810	254,430	237,880	10,732	31,807	33,430
Mean	2,196	5,732	4,013	3,711	3,122	3,452	18,190	8,207	7,929	1,572	1,026	1,114
(†)	-1,230	+627	+4	-1,300	-2,015	-1,687	+3,878	+2,092	+1,383	-1,041	-859	-727

Adjusted for change in reservoir contents

Mean	1,737	5,974	4,015	3,226	2,318	2,822	19,690	8,988	8,463	1,183	705	834
Cfsm	0.657	2.26	1.52	1.22	0.877	1.07	7.45	3.40	3.20	0.447	0.267	0.315
In.	0.76	2.52	1.75	1.41	0.95	1.23	8.31	3.92	3.57	0.52	0.31	0.35

Observed

Adjusted

Calendar year 1951:	Max	27,700	Min	869	Mean	4,770	Mean	4,734	Cfs	1.79	In.	24.31
Water year 1951-52:	Max	33,500	Min	344	Mean	4,998	Mean	4,970	Cfs	1.88	In.	25.60

Peak discharge (base, 23,000 cfs).--Apr. 15 (2:30 a.m.) 26,300 cfs (9.80 ft); Apr. 21 (3 a.m.) 26,800 cfs (9.30 ft); June 2 (6 a.m.) 37,100 cfs (12.12 ft).

\* Discharge measurement made on this day.

† Change in contents in First Connecticut and Second Connecticut Lakes, Lake Francis, and Comerford Station Pond, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Dec. 14 to Apr. 1.

## Wells River at Wells River, Vt.

Location.--Lat 44°09'05", long. 72°04'00", on right bank 800 ft upstream from railroad bridge, 0.8 mile west of village of Wells River, Orange County, and 1.5 miles upstream from mouth.

Drainage area.--98.4 sq mi.

Records available.--August 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 505.53 ft above mean sea level, datum of 1929 (levels by Connecticut River Power Co.).

Average discharge.--12 years, 142 cfs.

Extremes.--Maximum discharge during year, 3,230 cfs June 2 (gage height, 8.12 ft), from rating curve extended above 1,300 cfs on basis of computation of peak flow over dam; minimum, 11 cfs Aug. 26, 28, 29; minimum daily, 24 cfs Aug. 27-29, Sept. 1, 14.  
1940-52: Maximum discharge, that of June 2, 1952; minimum, 5.1 cfs Oct. 6, 1948; minimum daily, 11 cfs Aug. 27, 1949.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by small powerplant above station. Flow partly regulated by Groton and Ricker Ponds.

Revisions (water years).--W 1171: Drainage area.. W 1201: 1942(P), 1944-49(P), 1950.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	24	3.0	311
1.7	41	3.5	517
2.0	77	4.0	780
2.5	175	6.0	2,010

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	67	92	175	105	66	187	272	739	91	39	24
2	*38	59	94	160	115	65	502	247	*1,950	92	39	144
3	59	284	84	130	115	65	600	228	881	71	33	83
4	39	400	87	120	125	62	499	212	580	76	32	66
5	37	212	*155	110	300	64	603	202	625	77	42	45
6	35	154	270	110	220	63	1,440	202	432	55	41	38
7	30	151	225	92	165	63	1,040	322	578	53	41	*30
8	120	350	233	88	150	62	834	255	399	52	38	30
9	88	238	192	88	150	62	816	212	346	50	35	33
10	58	168	192	94	140	62	978	194	272	51	30	32
11	51	154	146	89	125	78	1,150	187	258	130	32	35
12	61	137	100	88	*115	170	858	584	278	93	39	35
13	53	121	85	90	105	125	698	640	233	62	50	30
14	41	117	75	84	115	105	976	394	197	53	38	24
15	40	164	84	*96	115	96	*1,190	325	170	53	34	26
16	42	142	78	160	110	94	852	346	150	50	32	36
17	42	182	88	100	100	90	858	281	137	47	39	34
18	42	150	94	150	98	88	978	236	142	43	57	31
19	41	131	94	135	100	92	1,030	222	107	84	43	30
20	38	111	85	110	90	92	1,180	197	107	98	33	60
21	32	95	130	98	85	105	1,050	388	104	69	33	36
22	34	85	190	82	80	130	774	394	77	66	30	31
23	40	106	140	125	78	135	786	308	83	55	29	36
24	38	133	120	115	82	135	655	247	*85	50	26	53
25	91	121	110	88	78	*145	499	271	113	45	26	44
26	71	98	105	92	74	145	424	590	181	41	26	39
27	56	95	95	140	74	220	374	432	334	50	24	43
28	45	69	88	125	70	217	366	305	152	95	24	32
29	65	96	100	105	66	199	386	*264	115	58	24	32
30	*67	90	97	86	-	194	322	247	119	*47	34	34
31	66	-	130	105	-	204	-	207	-	43	31	-
Total	1,573	4,480	3,888	3,430	3,345	3,493	22,905	9,411	9,994	1,990	1,134	1,246
Mean	50.7	149	125	111	115	113	764	304	333	64.2	36.6	41.5
Cfs/m	0.515	1.51	1.27	1.13	1.17	1.15	7.76	3.09	3.38	0.652	0.372	0.422
In.	0.59	1.69	1.47	1.30	1.26	1.32	8.66	3.56	3.78	0.75	0.43	0.47
Calendar year 1951: Max		1,240		Min	26	Mean	157	Cfs/m	1.60	In.	21.65	
Water year 1951-52: Max		1,990		Min	24	Mean	185	Cfs/m	1.86	In.	25.28	

Peak discharge (base, 980 cfs).--Apr. 6 (8 a.m.) 1,590 cfs (5.30 ft); Apr. 11 (12:01 to 1 a.m.) 1,340 cfs (4.90 ft); Apr. 15 (2 a.m.) 1,480 cfs (5.12 ft); Apr. 20 (10:30 to 12 p.m.) 1,340 cfs (4.90 ft); June 2 (12:30 a.m.) 3,230 cfs (8.12 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 6, Dec. 12 to Mar. 27 (no gage-height record Feb. 8 to Mar. 24; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for Dog River at Northfield Falls, Ayers Brook at Randolph, and Ammonoosuc River near Bath, N. H.).



## Connecticut River at Orford, N. H.

Location.--Lat 43°54'25", long. 72°08'25", on upstream side of covered highway bridge at Orford, Orange County, 9 miles (revised) downstream from Waits River, and 22 miles upstream from White River.

Drainage area.--3,100 sq mi.

Records available.--August 1900 to September 1921 (discontinued).

Gage.--Chain and inclined staff gages. Altitude of gage is 370 ft (from topographic map).

Average discharge.--21 years, 5,440 cfs (unadjusted).

Extremes.--1900-21: Maximum discharge, 57,300 cfs Mar. 28, 1913 (gage height, 33.4 ft, from graph based on gage readings), from rating curve extended above 26,000 cfs; minimum daily, 288 cfs Sept. 28, 1908.

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in the water-supply papers indicated. Gage heights are from graphs based on gage readings. Published maximum observed gage height for 1920 (24.8 ft Mar. 29) was affected by ice.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
381.....	1914	Apr. 22, 1914	45,400	28.4
501.....	1919	Apr. 14, 1919	29,700	21.4
501.....	1920	Mar. 29, 1920	†36,700	-
521.....	1921	Mar. 23, 1921	28,900	21.0

† Estimated.

Remarks.--Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes.

Revisions (water years).--W 381: Drainage area. W 415: 1900-1906, 1912 calendar years. Revised figures of discharge, in cubic feet per second, for the water year 1915, superseding those published in Water-Supply Papers 401 and 415, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1914		1914		1914	
Oct. 1.....	1,670	Nov. 1.....	1,430	Dec. 2.....	3,180
2.....	1,720	2.....	1,550	3.....	3,540
3.....	1,550	3.....	1,620	4.....	4,540
4.....	1,490	4.....	1,620	5.....	4,980
5.....	1,490	5.....	1,970	6.....	4,330
6.....	1,430	6.....	2,290	7.....	3,540
7.....	1,290	7.....	2,570	8.....	3,020
8.....	1,040	8.....	2,710	9.....	2,570
9.....	1,100	9.....	2,710	10.....	2,360
10.....	1,350	10.....	2,430	11.....	2,150
11.....	1,220	11.....	2,430	12.....	1,870
12.....	1,100	12.....	2,430	13.....	1,620
13.....	1,220	13.....	2,290	14.....	1,820
14.....	1,430	14.....	2,150	15.....	b1,580
15.....	1,520	15.....	2,150	16.....	b1,370
16.....	1,490	16.....	2,430	17.....	b1,290
17.....	1,350	17.....	2,780	18.....	b1,220
18.....	1,390	18.....	3,630	19.....	b1,100
19.....	1,670	19.....	3,360	20.....	b1,040
20.....	2,430	20.....	2,570	21.....	b1,100
21.....	2,640	21.....	2,500	22.....	b1,100
22.....	2,570	22.....	2,150	23.....	b1,100
23.....	2,430	23.....	2,430	24.....	b1,040
24.....	2,290	24.....	2,290	25.....	b930
25.....	2,030	25.....	2,150	26.....	b880
26.....	2,090	26.....	2,150	27.....	b930
27.....	1,620	27.....	2,430	28.....	b1,040
28.....	1,490	28.....	2,710	29.....	b930
29.....	1,490	29.....	3,180	30.....	b1,040
30.....	1,490	30.....	3,360	31.....	b1,040
31.....	1,430	Dec. 1.....	3,360		

b Stage-discharge relation affected by ice.

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October 1914.....	2,640	1,040	1,630	0.526	0.61
November.....	3,630	1,430	2,420	.781	.87
December.....	4,980	880	1,990	.642	.74
Water year 1914-15.....	33,700	730	4,150	1.34	18.16

## Ompompanoosuc River at Union Village, Vt.

Location.--Lat 43°47'20", long. 72°15'20", on right bank 100 ft upstream from covered bridge at Union Village, Orange County, a quarter of a mile downstream from Avery Brook, and 0.3 mile downstream from Union Village Reservoir.

Drainage area.--130 sq mi.

Records available.--September 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 435 ft (from topographic map).

Average discharge.--12 years, 200 cfs.

Extremes.--Maximum discharge during year, 2,000 cfs Apr. 6 (gage height, 7.44 ft); minimum, 11 cfs Aug. 31, Sept. 1; minimum daily, 11 cfs Aug. 31.

1940-52: Maximum discharge, 4,800 cfs June 3, 1947 (gage height, 9.65 ft), from rating curve extended above 2,400 cfs on basis of slope-area determination of peak flow; minimum, 1.7 cfs Oct. 14, 1949; minimum daily, 2.0 cfs Oct. 20, 1949.

Maximum stage known, about 14.5 ft in November 1927, from information by local resident.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by Union Village Reservoir (see p. 302) since October 1949. Some regulation by Lake Fairlee.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	11	4.0	171
2.8	18	4.5	325
3.0	28	5.0	515
3.2	44	6.0	995
3.5	79	7.2	1,810

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	79	144	360	220	120	409	311	660	72	24	13
2	35	76	146	290	240	120	751	287	322	64	22	32
3	31	542	148	265	223	125	845	264	1,240	56	20	52
4	32	640	148	*230	214	125	820	251	1,640	51	20	*47
5	31	361	271	190	381	130	1,180	235	1,640	50	27	32
6	29	*274	452	200	402	134	1,810	226	1,400	43	33	25
7	30	332	444	150	290	132	1,750	229	590	41	26	22
8	*238	606	391	160	230	115	1,620	206	398	40	22	19
9	112	585	304	190	*223	134	1,540	187	398	36	21	17
10	79	311	*297	205	220	174	1,570	174	325	77	20	16
11	70	277	236	220	210	*146	1,650	197	325	255	24	16
12	85	251	223	200	210	270	1,530	594	308	114	27	15
13	71	*198	203	185	160	206	1,250	448	260	76	32	15
14	61	176	133	170	150	176	1,300	336	220	61	25	15
15	55	209	130	190	160	165	*1,590	318	192	51	21	15
16	53	212	135	290	165	160	1,450	372	166	48	25	18
17	50	277	130	235	175	153	1,290	287	166	45	53	20
18	48	251	170	245	195	146	1,250	260	176	38	34	18
19	45	192	210	270	200	150	1,190	235	146	40	26	18
20	43	171	280	230	210	148	1,130	217	134	46	23	17
21	42	150	270	185	195	160	946	414	117	40	22	17
22	40	132	450	150	170	189	710	*325	108	39	20	15
23	40	153	480	190	145	209	690	267	100	34	18	14
24	41	197	320	230	130	214	567	232	92	31	16	16
25	177	214	175	225	150	217	503	321	163	27	15	18
26	102	189	220	220	135	245	459	512	114	25	14	17
27	80	150	330	275	135	376	409	365	*110	26	16	17
28	75	135	260	300	135	406	417	287	104	*61	16	17
29	97	140	220	235	115	394	428	280	62	40	13	16
30	86	140	230	160	-	402	350	287	62	31	12	-
31	80	-	400	170	-	432	-	226	-	26	11	-
Total	2,092	7,418	7,950	6,815	5,768	6,273	31,404	9,130	11,788	1,684	698	664
Mean	67.5	247	256	220	199	202	1,047	295	393	54.3	22.5	22.1
(†)	+0.4	+6.9	+5.4	-0.5	-4.6	-5.6	0	-0.6	-0.6	-0.5	-0.1	+0.1

Adjusted for change in reservoir contents

	Mean	Cfs	In.	Mean	Cfs	In.	Mean	Cfs	In.	Mean	Cfs	In.
Mean	67.6	250	258	220	197	200	1,047	294	393	54.1	22.5	22.2
Cfs	0.520	1.92	1.98	1.69	1.52	1.54	8.05	2.26	3.02	0.416	0.173	0.171
In.	0.60	2.15	2.29	1.95	1.63	1.78	8.98	2.61	3.37	0.48	0.20	0.19

Observed

Adjusted

Calendar year 1951:	Max	1,590	Min	24	Mean	224	Mean	224	Cfs	1.72	In.	23.38
Water year 1951-52:	Max	1,810	Min	11	Mean	251	Mean	251	Cfs	1.93	In.	26.23

\* Discharge measurement made on this day.

† Change in contents in Union Village Reservoir, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Nov. 27-30, Dec. 15 to Feb. 2, Feb. 8, Feb. 10 to Mar. 5, Mar. 15, 16.

## CONNECTICUT RIVER BASIN

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White River near Bethel, Vt.

Location.--Lat 43°48'45", long. 72°39'25", on right bank a third of a mile upstream from Locust Creek and 1½ miles southwest of Bethel, Windsor County.

Drainage area.--241 sq mi.

Records available.--June 1931 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 550 ft (from topographic map). Prior to Oct. 1, 1940, at datum 2.00 ft higher.

Average discharge.--21 years, 492 cfs.

Extremes.--Maximum discharge during year, 15,700 cfs June 1 (gage height, 8.74 ft), from rating curve extended above 4,200 cfs as explained below; minimum, 46 cfs Aug. 30 to Sept. 1.

1931-52: Maximum discharge, 32,200 cfs Sept. 21, 1938 (gage height, 11.46 ft, present datum), from rating curve extended above 4,200 cfs on basis of slope-area determination of peak flow; maximum gage height, 13.20 ft Mar. 9, 1942 (ice jam); minimum discharge, 28 cfs Aug. 3, 1933, Aug. 22, 1934.

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

Revisions (water years).--W 756: Drainage area. W 801: 1933(M).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	34	870
1.4	67	3.5
1.7	139	4.0
2.0	233	5.0
2.5	465	6.0

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	159	240	430	680	490	235	682	758	4,940	197	65	51
2	148	230	552	1,100	560	220	1,820	658	4,470	178	63	295
3	139	1,490	504	*1,010	620	220	1,880	568	1,780	160	62	156
4	134	1,580	454	770	580	220	1,550	504	1,230	145	62	126
5	131	822	912	520	1,150	225	2,260	459	1,030	150	67	89
6	126	605	1,500	510	1,050	230	4,020	431	822	130	67	69
7	129	604	1,070	440	800	225	2,420	425	1,230	125	65	62
8	666	1,170	1,120	380	*620	220	2,000	403	842	115	62	58
9	425	889	946	430	620	220	2,030	367	716	110	62	53
10	294	673	918	470	540	215	2,540	339	605	155	60	51
11	*255	568	732	430	490	*240	3,110	391	664	532	76	51
12	348	*510	620	390	450	560	2,160	2,050	842	251	80	51
13	282	485	460	400	360	450	1,700	2,150	630	284	87	49
14	244	472	340	390	390	360	2,630	1,410	498	145	67	49
15	226	849	530	460	400	310	2,520	1,130	419	120	62	49
16	213	698	340	620	380	290	*2,210	1,200	357	110	62	58
17	203	870	340	480	360	290	2,370	936	325	105	80	*58
18	190	682	390	800	350	290	3,010	794	316	98	78	51
19	184	575	410	530	335	282	2,960	682	294	130	63	53
20	174	504	430	470	320	277	3,670	*614	277	160	60	122
21	165	435	480	430	305	290	2,520	1,170	251	125	60	78
22	162	425	800	350	290	408	1,850	1,130	233	105	56	65
23	156	538	640	450	280	414	2,600	956	220	92	56	65
24	159	923	520	530	270	436	1,740	775	207	86	54	65
25	694	758	470	370	275	448	1,280	979	*350	81	54	60
26	419	639	420	450	270	506	1,080	1,780	251	78	51	58
27	320	530	380	750	250	880	994	1,260	240	77	51	65
28	282	400	370	580	260	765	1,020	956	210	80	51	60
29	273	460	390	450	245	664	1,160	822	194	*78	48	54
30	255	420	450	390	-	630	936	741	233	69	48	49
31	244	-	650	420	-	682	-	622	-	67	48	-
Total	7,800	19,824	18,548	16,230	13,310	11,703	62,922	27,458	24,676	4,238	1,927	2,220
Mean	252	661	592	524	459	378	2,097	888	825	137	62.2	74.0
Cfs/m	1.05	2.74	2.46	2.17	1.90	1.57	8.70	5.68	3.41	0.568	0.258	0.307
In.	1.20	3.06	2.83	2.50	2.05	1.81	9.71	4.24	3.81	0.65	0.30	0.34

Calendar year 1951: Max 4,040 Min 99 Mean 519 Cfs/m 2.15 In. 29.21  
 Water year 1951-52: Max 4,940 Min 48 Mean 576 Cfs/m 2.39 In. 32.50

Peak discharge (base, 5,600 cfs).--June 1 (6 p.m.) 15,700 cfs (8.74 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 21 to Jan. 2, July 3-10, 14-28; discharge estimated on basis of weather records and records for station at West Hartford. Stage-discharge relation affected by ice Nov. 21, Nov. 27 to Dec. 1, Dec. 12 to Jan. 2, Jan. 4 to Mar. 18.

## Ayers Brook at Randolph, Vt.

Location.--Lat 43°56'05", long. 72°39'30", on right bank 55 ft upstream from bridge on State Highway 12, just north of village limits of Randolph, Orange County, 0.4 mile upstream from Adams Brook, and 1.2 miles upstream from mouth.

Drainage area.--30.5 sq mi.

Records available.--July 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 632.75 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--13 years, 48.1 cfs.

Extremes.--Maximum discharge during year, 3,490 cfs June 1 (gage height, 7.58 ft), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 3.3 cfs Aug. 31, 1939-52: Maximum discharge, that of June 1, 1952; minimum, 1.2 cfs Aug. 27, 1949. Maximum stage known, about 16 ft in November 1927, from information by local residents.

Remarks.--Records excellent except those above 250 cfs, which are good, and those for periods of ice effect or no gage-height record, which are fair.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.3	3.4	2.0	124
.7	6.4	2.5	221
.7	13	3.0	350
.9	22	4.0	720
1.1	32	4.5	970
1.5	65		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	19	38	57	43	a28	101	72	888	24	5.8	4.0
2	8.2	19	43	63	61	a27	222	66	628	22	5.4	5.2
3	8.2	152	40	54	59	a27	221	61	252	20	5.4	21
4	8.2	97	38	48	60	a26	223	57	195	19	5.6	16
5	8.2	59	79	44	110	a27	298	55	162	19	6.9	10
6	7.9	46	93	53	80	a26	520	51	127	16	7.3	7.9
7	8.5	53	73	37	68	a26	362	50	130	15	6.1	6.8
8	51	74	74	39	58	a25	374	46	100	14	5.3	5.9
9	24	59	66	46	62	a25	416	40	95	14	5.3	5.6
10	17	50	63	44	59	a25	490	38	80	19	5.4	5.4
11	*15	46	54	39	54	a30	510	50	81	65	8.8	5.6
12	19	*44	*52	38	47	82	362	163	98	28	8.6	5.2
13	16	41	42	38	42	49	303	104	72	21	9.2	5.0
14	15	44	35	38	47	42	524	77	61	17	8.6	4.7
15	14	60	38	52	a46	38	365	77	55	15	5.4	4.8
16	13	53	36	64	a44	39	*311	83	48	14	5.4	*6.4
17	13	66	38	45	42	38	300	67	45	12	8.9	6.2
18	12	51	40	60	40	37	314	61	42	11	6.8	5.9
19	13	46	40	52	42	39	300	56	42	15	5.6	6.5
20	12	41	40	48	37	38	328	*52	58	17	5.0	14
21	11	39	51	40	35	41	249	126	35	14	4.7	8.4
22	11	35	70	33	32	50	195	77	33	14	5.0	7.3
23	11	44	50	58	31	52	206	65	31	11	5.0	7.4
24	12	56	45	46	33	56	153	57	28	9.0	4.6	11
25	54	46	41	36	31	59	127	101	*50	8.2	4.4	8.7
26	26	43	42	44	30	70	110	168	36	7.3	4.3	7.6
27	21	43	35	61	a30	110	98	108	35	7.1	4.0	7.3
28	19	37	34	56	a29	106	101	82	28	7.3	3.7	6.4
29	21	42	44	40	a28	96	100	78	27	*7.3	3.6	5.9
30	20	38	43	33	-	100	81	71	30	6.6	3.4	5.8
31	19	-	74	41	-	105	-	62	-	6.1	3.4	-
Total	516.9	1,543	1,651	1,447	1,380	1,539	8,264	2,319	3,572	494.9	174.9	274.7
Mean	16.7	51.4	50.0	46.7	47.6	49.6	275	74.8	119	15.0	5.64	9.16
Cfsm	0.548	1.69	1.64	1.53	1.56	1.63	9.02	2.45	3.90	0.525	0.185	0.300
In.	0.63	1.88	1.89	1.76	1.68	1.88	10.08	2.83	4.36	0.60	0.21	0.33
Calendar year 1951: Max	425											
Water year 1951-52: Max	888											
Min	6.8											
Mean	3.4											
Cfsm	50.6											
In.	22.51											
Calendar year 1951: Max	425											
Water year 1951-52: Max	888											
Min	6.8											
Mean	3.4											
Cfsm	50.6											
In.	22.51											

Peak discharge (base, 350 cfs).--Apr. 6 (5:30 to 7 a.m.) 624 cfs (3.76 ft); Apr. 10 (9:30 to 10 p.m.) 755 cfs (4.07 ft); Apr. 14 (10 to 11 a.m.) 576 cfs (3.64 ft); June 1 (7:30 p.m.) 3,490 cfs (7.58 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Dog River at Northfield Falls and White River at West Hartford.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Dec. 11, 13, 14, 27, Feb. 5, 6, 9-14, 17-26, Mar. 12-16.

## White River at West Hartford, Vt.

Location.--Lat 43°42'45", long. 72°25'10", on left bank 500 ft upstream from highway bridge at West Hartford, Windsor County, and 7 miles upstream from mouth.

Drainage area.--690 sq mi.

Records available.--June 1915 to September 1952 (October 1927 to September 1928, monthly discharge only, published in Water-Supply Paper 1301).

Gage.--Water-stage recorder. Datum of gage is 374.53 ft above mean sea level, datum of 1929. Prior to Oct. 30, 1927, staff gage at same site and datum.

Average discharge.--37 years, 1,200 cfs.

Extremes.--Maximum discharge during year, 29,100 cfs June 1 (gage height, 16.11 ft); minimum, 95 cfs Sept. 1 (gage height, 2.64 ft); minimum daily, 103 cfs Aug. 31.  
1915-52: Maximum discharge, 120,000 cfs Nov. 4, 1927 (gage height, 29.3 ft, from floodmarks), by slope-area determination; minimum observed, about 35 cfs Aug. 4, 1918 (gage height, 2.22 ft); minimum daily, 64 cfs Aug. 4, 1918.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by powerplant above station.

Revisions (water years).--W 756: Drainage area. W 781: 1928(M). W 1031: 1916(m), 1923.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3

Nov. 4 to Sept. 30

3.1	223	2.6	87	6.0	2,400
3.5	293	3.0	184	7.0	3,890
4.0	630	3.5	360	9.0	7,300
5.0	1,380	4.0	605	11.0	12,400
6.0	2,510	5.0	1,320	13.0	18,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	323	540	1,010	1,500	1,100	680	2,010	1,890	7,630	556	178	207
2	298	540	1,120	2,330	1,350	640	4,260	1,680	15,800	485	173	413
3	282	2,650	1,130	2,140	1,550	640	5,390	1,500	5,560	428	164	*436
4	278	3,540	1,010	1,690	1,500	650	4,780	1,380	3,890	396	162	319
5	275	*1,860	1,580	1,270	2,600	630	6,510	1,290	3,410	400	178	250
6	267	1,390	*2,980	1,200	2,810	670	11,500	1,210	2,990	356	187	208
7	248	1,360	2,250	1,050	2,050	660	7,420	1,210	3,260	340	184	170
8	*1,160	2,430	2,200	910	1,630	630	6,740	1,160	2,780	311	170	156
9	*1,030	2,010	1,980	1,000	1,600	630	6,840	1,050	2,360	295	156	146
10	660	1,550	1,690	1,170	1,400	*630	7,760	962	2,020	341	153	133
11	550	1,350	1,500	1,020	1,300	730	9,420	1,010	1,900	1,240	159	128
12	648	1,210	1,350	960	1,250	1,550	6,870	3,820	2,250	799	199	125
13	608	1,130	1,000	990	960	1,450	5,680	4,590	1,810	510	214	121
14	515	1,080	730	960	1,070	1,150	*7,190	2,930	1,490	405	205	109
15	470	1,520	720	1,000	1,100	970	7,250	2,280	1,290	340	178	107
16	433	1,410	740	1,600	1,000	920	6,240	2,560	1,110	319	173	123
17	414	1,860	740	1,200	1,050	950	6,280	2,000	1,010	308	178	123
18	388	1,490	860	1,400	930	910	7,120	1,740	1,010	278	199	128
19	374	1,280	900	1,500	970	940	7,160	1,540	913	270	190	128
20	366	1,110	910	1,300	920	900	8,030	1,410	878	323	170	130
21	332	962	1,000	1,200	870	930	6,480	2,580	759	311	156	181
22	344	906	1,800	800	820	1,150	4,700	*2,360	690	289	146	170
23	332	1,100	1,500	1,150	800	1,230	5,480	2,010	649	267	133	162
24	356	1,590	1,200	1,350	770	1,320	4,250	1,680	600	246	130	156
25	1,010	1,530	1,050	900	780	1,330	3,230	1,830	890	236	125	156
26	972	1,230	1,000	1,000	770	1,400	2,730	3,940	*811	220	130	153
27	722	1,130	900	1,850	720	2,290	2,450	2,960	746	208	121	146
28	614	700	840	1,900	740	2,340	2,370	2,140	622	220	114	135
29	614	1,020	870	1,400	700	1,980	2,780	1,640	561	211	112	135
30	575	983	940	1,000	-	1,910	2,260	1,750	649	*208	107	135
31	545	-	1,400	1,000	-	2,130	-	1,490	-	190	103	-
Total	15,988	42,461	39,000	39,740	35,110	34,940	171,180	61,792	70,158	11,307	4,947	5,089
Mean	516	1,415	1,258	1,282	1,211	1,127	5,706	1,993	2,339	365	160	170
Cfsm	0.748	2.05	1.82	1.86	1.76	1.63	8.27	2.89	3.39	0.529	0.232	0.246
In.	0.86	2.29	2.10	2.14	1.89	1.88	9.23	3.53	3.78	0.61	0.27	0.27

Calendar year 1951: Max 11,800 Min 216 Mean 1,264 Cfsm 1.83 In. 24.88  
Water year 1951-52: Max 15,600 Min 103 Mean 1,453 Cfsm 2.11 In. 28.65

Peak discharge (base, 11,600 cfs).--Apr. 6 (4:30 to 6 a.m.) 13,300 cfs (11.34 ft); June 1 (12 p.m.) 29,100 cfs (16.11 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26-28, Dec. 12 to Jan. 2, Jan. 6 to Feb. 5, Feb. 9 to Mar. 27.

## Connecticut River at White River Junction, Vt.

Location.--Lat 43°38'50", long. 72°18'45", on right bank 50 ft downstream from railroad bridge at White River Junction, Windsor County, and 500 ft downstream from White River.

Drainage area.--4,092 sq mi.

Records available.--October 1911 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 321.52 ft above mean sea level, datum of 1929. Prior to June 16, 1918, painted staff gage on downstream side of pier of railroad bridge 50 ft upstream at same datum. June 16, 1918, to Nov. 2, 1930, chain gage at various locations on upstream and downstream sides of railroad bridge at same datum.

Average discharge.--41 years, 7,203 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 56,500 cfs June 2 (gage height, 21.15 ft, from graph based on gage readings); minimum daily, 155 cfs Aug. 31.

1911-52: Maximum discharge, 136,000 cfs Nov. 4, 1927 (gage height, 35.0 ft, present site), from rating curve extended above 70,000 cfs by logarithmic plotting; minimum daily, that of Aug. 31, 1952.

Remarks.--Records good except those below 3,000 cfs, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond, Union Village Reservoir (see p. 302), and other reservoirs (combined usable capacity, about 12½ billion cu ft).

Cooperation.--Wire-weight-gage readings furnished by U. S. Weather Bureau.

Revisions (water years).--W 741: 1932 (adjusted monthly and yearly figures only).

W 781: 1928(M). W 891: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	150	6.0	3,730
3.0	330	8.0	8,180
3.5	630	12.0	20,000
4.0	1,040	16.0	34,300
5.0	2,160	20.0	51,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,010	3,560	4,460	7,000	5,700	4,200	9,100	16,600	15,600	4,090	1,670	370
2	3,000	4,320	4,050	8,400	5,400	2,700	15,000	14,500	49,100	3,570	1,000	2,550
3	2,770	8,610	4,880	8,600	5,100	3,800	24,200	11,600	40,600	*3,600	320	3,200
4	2,320	19,100	4,930	8,000	5,900	4,000	22,900	7,350	32,100	1,220	1,700	2,600
5	3,250	17,800	7,130	*6,200	8,800	4,200	23,900	8,190	24,600	1,020	1,900	2,400
6	2,050	12,400	*11,400	5,500	10,000	5,000	38,200	9,290	20,200	1,060	1,420	1,100
7	1,310	9,780	12,700	5,100	8,200	3,600	33,600	9,190	16,900	2,800	1,250	1,000
8	6,250	14,200	12,100	4,600	7,100	3,500	31,100	9,900	14,600	2,350	1,340	1,720
9	4,420	12,800	11,800	5,000	5,800	2,500	30,000	11,100	13,400	2,380	440	4,000
10	3,870	11,700	9,780	5,200	5,300	3,500	30,500	10,500	12,400	2,800	990	1,750
11	3,700	8,760	7,660	4,700	5,600	4,700	34,600	9,140	10,000	4,300	1,350	2,000
12	3,210	4,880	7,150	4,500	6,200	5,000	33,000	12,000	10,600	2,330	1,600	1,050
13	2,780	5,980	b5,600	3,800	5,600	7,400	29,700	19,800	9,800	1,430	1,700	205
14	1,540	6,220	b4,000	4,700	5,400	3,000	30,500	18,000	8,520	3,200	1,600	580
15	3,520	7,850	b3,700	5,400	4,500	5,400	*36,800	16,300	5,600	2,990	1,650	1,460
16	*3,020	8,820	b2,300	6,800	4,400	3,500	35,600	14,500	7,000	2,200	250	1,520
17	3,100	11,700	b3,700	7,800	3,800	5,200	33,000	11,800	5,100	2,200	560	1,540
18	2,980	10,000	3,600	8,000	4,500	5,300	32,500	11,600	6,620	2,000	2,500	1,100
19	3,560	6,890	3,800	7,800	5,000	4,500	33,200	9,350	7,210	760	2,000	1,620
20	2,290	6,420	5,100	6,000	5,400	5,200	35,100	9,300	5,600	1,420	2,050	170
21	536	5,840	4,600	6,300	4,600	4,800	36,000	11,300	5,200	3,000	2,250	200
22	2,490	3,910	6,800	5,900	4,500	4,500	34,600	13,500	3,100	3,000	1,440	2,020
23	2,290	5,660	6,800	5,700	3,900	6,000	34,000	14,200	4,960	2,460	225	2,040
24	2,500	5,670	7,200	5,600	4,500	6,400	32,400	12,200	4,700	1,820	170	1,880
25	3,760	8,760	7,400	6,300	3,500	7,100	28,200	9,730	5,260	1,580	1,350	1,590
26	3,800	8,220	6,200	5,800	4,700	8,000	24,400	14,200	5,090	700	2,000	1,940
27	4,240	6,630	6,000	7,000	4,300	9,600	20,200	15,600	8,200	1,030	1,900	215
28	2,570	4,830	5,400	7,400	4,600	11,500	20,200	12,900	9,200	1,970	1,850	185
29	3,990	5,020	5,500	7,000	4,300	11,500	19,300	11,600	5,780	2,800	1,550	1,580
30	4,100	4,770	4,600	5,800	-	6,700	17,600	9,040	4,760	2,900	200	1,800
31	3,810	-	6,000	5,200	-	10,000	-	7,460	-	2,410	155	-
Total	95,836	251,190	192,980	190,900	156,600	175,200	859,400	571,320	571,800	71,390	40,380	45,385
Mean	3,091	8,373	6,225	6,158	5,400	5,652	28,650	11,980	12,390	2,303	1,303	1,513
(†)	-1,230	+634	+9	-1,300	-2,020	-1,693	+3,878	+2,091	+1,382	-1,041	-859	-727

Adjusted for change in reservoir contents

Mean Cfsm	2,632	8,618	6,229	5,673	4,594	5,020	30,140	12,760	12,930	1,914	982	1,232
In.	0.643	2.11	1.52	1.39	1.12	1.23	7.37	3.12	3.16	0.468	0.240	0.301
In.	0.74	2.35	1.75	1.60	1.21	1.41	8.22	3.59	3.52	0.54	0.28	0.34

Observed				Adjusted			
Calendar year 1951:	Max 40,400	Min 470	Mean 7,105	Mean 7,069	Cfsm 1.73	In. 23.44	
Water year 1951-52:	Max 49,100	Min 155	Mean 7,711	Mean 7,684	Cfsm 1.88	In. 25.55	

Peak discharge (base, \*4,000 cfs).--Apr. 6 (7 to 9:30 a.m.) 39,600 cfs (17.30 ft); Apr. 15 (8 to 10 p.m.) 37,600 cfs (16.82 ft); June 2 (2 a.m.) 56,500 cfs (21.15 ft).

\* Discharge measurement made on this day.

† Change in contents in First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond, and Union Village Reservoir, in millions of cubic feet.

b Stage-discharge relation affected by ice.

Note.--Doubtful or no gage-height record Dec. 18 to Apr. 1, July 14 to Sept. 11; discharge estimated on basis of twice-daily wire-weight-gage readings, powerplant records, records for White River at West Hartford, weather records, and 1 discharge measurement. Doubtful gage-height record Oct. 4, 6, 7, 14, 20-22, Apr. 2 to May 4, May 12-18, 21-24, 26-29, June 1-5, June 8 to July 15, Sept. 12-30; discharge computed from recorder graph adjusted on basis of twice-daily wire-weight gage-readings, powerplant records, records for White River at West Hartford, and weather records.

## Mascoma River at West Canaan, N. H.

Location.--Lat 43°39'00", long. 72°04'50", on right bank 45 ft downstream from Boston & Maine Railroad bridge, 0.9 mile east of West Canaan, Grafton County, 1.2 miles downstream from Indian River, and 3½ miles west of Canaan.

Drainage area.--80.5 sq mi.

Records available.--July 1939 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 835 ft (from topographic map).

Average discharge.--13 years, 120 cfs.

Extremes.--Maximum discharge during year, 1,770 cfs June 2 (gage height, 6.19 ft); minimum, 5.8 cfs Sept. 1.

1939-52: Maximum discharge, 2,510 cfs June 15, 1942 (gage height, 7.30 ft); minimum, 4.9 cfs July 7, 1941.

Flood in September 1938 reached a stage of 9.6 ft, from floodmarks (discharge, 4,310 cfs, from rating curve extended above 1,900 cfs on basis of slope-area determination of peak flow).

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

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

1.0	27	3.0	360	0.5	5.6	2.5	226
1.2	40	4.0	675	.7	11	3.0	356
1.5	66	5.0	1,100	.9	19	4.0	675
2.0	136			1.2	36	5.0	1,100
				1.5	63	6.0	1,640
				2.0	128		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	94	93	190	*115	64	189	200	288	33	14	6.5
2	37	91	95	160	120	68	367	167	1,530	27	*13	75
3	*36	402	95	140	130	65	471	147	808	24	12	42
4	35	874	92	130	140	64	488	131	424	22	11	34
5	34	485	180	115	210	62	570	120	320	22	12	20
6	32	292	378	105	190	70	1,360	113	236	19	16	15
7	31	*261	312	100	170	68	1,080	114	217	18	14	13
8	431	471	280	95	140	66	822	107	171	17	11	11
9	373	372	252	91	125	65	682	96	158	16	11	*9.9
10	176	263	271	90	115	64	750	89	126	20	10	9.3
11	141	216	199	*89	110	72	956	100	110	73	15	9.0
12	152	184	170	87	100	205	794	355	108	44	16	8.7
13	119	162	110	86	86	190	612	447	98	29	20	8.7
14	100	152	88	84	92	150	737	275	81	23	15	7.8
15	89	191	82	90	92	120	1,250	219	70	20	12	8.1
16	81	172	80	155	86	105	915	236	59	20	11	9.9
17	74	197	80	125	80	95	782	189	53	18	20	
18	69	169	82	145	82	92	758	158	52	16	20	11
19	65	141	86	160	84	90	814	138	48	17	14	9.9
20	62	115	90	130	84	87	810	124	43	20	11	14
21	57	110	110	105	81	95	818	*202	37	18	9.6	12
22	55	105	210	90	78	110	552	235	34	18	9.9	11
23	54	110	180	150	76	125	*508	*179	*33	16	9.6	10
24	54	152	135	140	74	120	445	143	*29	16	8.4	12
25	176	155	110	120	74	115	323	156	49	14	7.8	12
26	142	110	100	110	*73	*135	298	320	42	13	7.4	11
27	104	92	92	210	72	200	258	250	51	14	7.1	16
28	94	*84	90	190	70	230	272	177	37	81	6.6	14
29	138	88	92	150	88	201	400	177	33	32	6.4	11
30	107	91	100	130	-	184	270	204	42	20	6.4	10
31	98	-	130	120	-	199	-	147	-	16	6.1	-
Total	3,255	6,398	4,484	3,982	3,017	3,574	19,329	5,714	5,385	756	363.3	451.8
Mean	105	213	144	125	104	115	644	184	180	24.4	11.7	15.1
Cfs/m	1.30	2.65	1.79	1.55	1.29	1.43	8.00	2.29	2.24	0.303	0.145	0.188
In.	1.50	2.96	2.06	1.79	1.39	1.65	8.93	2.64	2.49	0.35	0.17	0.21

Calendar year 1951: Max 1,730 Min 22 Mean 152 Cfs/m 1.89 In. 25.65  
Water year 1951-52: Max 1,530 Min 6.1 Mean 155 Cfs/m 1.93 In. 26.14

Peak discharge (base, 950 cfs).--Nov. 4 (6 to 8 a.m.) 9°6 cfs (4.78 ft); Apr. 6 (11:30 a.m. to 12:30 p.m.) 1,510 cfs (5.78 ft); Apr. 11 (8 a.m.) 995 cfs (4.78 ft); Apr. 15 (6:30 to 7:30 a.m.) 1,360 cfs (5.52 ft); June 2 (10:30 to 11:30 a.m.) 1,770 cfs (6.19 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 20-22, Nov. 25 to Dec. 4, Dec. 13 to Mar. 28.

## Mascoma River at Mascoma, N. H.

Location.--Lat 43°39'00", long. 72°11'05", on left bank at Mascoma, Grafton County, 250 ft downstream from railroad bridge and 1,000 ft downstream from outlet of Mascoma Lake.

Drainage area.--153 sq mi.

Records available.--August 1923 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 740 ft (from topographic map).

Average discharge.--29 years, 215 cfs (adjusted for storage since October 1928).

Extremes.--Maximum discharge during year, 1,790 cfs June 3 (gage height, 4.72 ft); minimum daily, 42 cfs Aug. 10.

1923-52: Maximum discharge, 5,840 cfs Mar. 19, 1936 (gage height, 7.50 ft), from rating curve extended above 2,500 cfs on basis of computation of flowover dams at gage heights 6.85 and 7.50 ft; minimum daily, 2 cfs Feb. 3, 1929, Sept. 1, 1940.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow regulated by Mascoma and Crystal Lakes and Goose and Grafton Ponds (see p. 302).

Revisions (water years).--W 726: Drainage area. W 801: 1925(M).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 7				Apr. 8 to Sept. 30			
1.2	56	3.0	635	1.1	40	2.5	390
1.5	107	4.0	1,210	1.3	65	3.0	630
2.0	235			1.5	97	4.0	1,210
				2.0	214	5.0	2,050

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	168	235	261	292	272	412	286	609	110	77	64
2	116	178	235	265	*292	281	436	290	1,350	108	64	*87
3	*111	352	235	265	292	300	484	283	1,730	106	64	87
4	111	968	235	265	296	322	594	244	1,390	106	80	68
5	109	1,130	268	265	300	314	725	244	748	106	88	83
6	109	*897	360	261	303	307	1,040	220	475	106	87	60
7	107	*715	428	258	307	300	1,430	203	585	106	85	66
8	111	695	545	255	310	289	*1,520	203	570	106	77	87
9	120	725	532	248	310	289	*1,410	203	474	103	54	85
10	127	710	514	245	303	300	1,310	200	358	101	42	85
11	131	534	468	*242	300	300	1,280	197	322	103	62	87
12	136	356	384	242	292	307	1,300	211	272	103	85	77
13	120	325	289	242	286	325	1,260	232	235	103	83	62
14	69	340	265	238	278	340	1,210	283	235	103	83	65
15	143	329	261	238	282	344	1,320	408	223	103	77	88
16	146	325	258	235	300	312	1,490	345	186	101	58	92
17	146	322	258	232	300	372	1,430	300	186	101	62	83
18	146	318	252	232	303	412	1,330	294	176	87	82	82
19	146	303	248	232	307	392	1,260	280	160	72	82	76
20	146	289	245	232	307	372	1,210	263	155	72	82	51
21	146	268	242	223	310	356	1,180	*257	137	90	82	*52
22	146	248	242	261	307	348	*1,130	311	139	97	71	80
23	146	208	245	289	303	344	1,030	*419	139	97	58	78
24	143	189	245	289	300	340	924	408	*135	95	62	77
25	143	192	248	292	292	*340	654	370	110	77	83	77
26	141	194	248	292	292	348	294	386	108	66	83	71
27	141	*200	248	292	289	356	300	458	*108	66	82	55
28	141	194	248	292	282	388	304	555	106	*83	58	82
29	146	192	248	292	278	408	311	515	108	94	77	88
30	151	214	255	292	-	412	304	404	108	94	58	88
31	160	-	258	292	-	412	-	394	-	92	58	-
Total	4,072	12,076	9,262	8,065	8,613	10,482	28,882	9,666	11,635	2,957	2,270	2,279
Mean	131	403	299	260	297	338	963	312	388	95.4	73.2	76.0
(†)	+168.7	+5.3	-42.3	-65.5	-259.2	-301.7	+591.7	+33.4	-189.6	-184.5	-166.4	-119.0

Adjusted for change in reservoir contents

	Mean	194	405	283	236	194	225	1,191	324	315	26.5	11.1	30.1
Cfsm	1.27	2.65	1.85	1.54	1.27	1.47	7.78	2.12	2.06	0.173	0.073	0.197	
In.	1.46	2.95	2.13	1.78	1.36	1.70	8.68	2.44	2.29	0.20	0.08	0.22	
Observed				Adjusted									
Calendar year 1951:	Max	2,220		Min	69	Mean	269	Mean	274	Cfsm	1.79	In.	24.32
Water year 1951-52:	Max	1,730		Min	42	Mean	301	Mean	285	Cfsm	1.86	In.	25.29

\* Discharge measurement made on this day.

† Change in contents in Mascoma and Crystal Lakes, and Goose and Grafton Ponds, in millions of cubic feet.

Note.--No gage-height record Oct. 20-25, Oct. 27 to Nov. 1, Nov. 3-6, 20-26, Dec. 3-13, 15-20, 22-27, Dec. 29 to Jan. 3, Jan. 5-9, 12-17, 19-25, 27-31, Feb. 3-8, 10-15, 17-21, 23, 24, 28, Mar. 1-6, 8, 9, May 3-20; discharge estimated from gage-height graph based on weekly staff-gage readings and records of gate operation at Mascoma Lake.



## Ottawaquechee River at Woodstock, Vt.

Location (revised).--Lat 43°37'25", long. 72°31'15", near center of span on upstream side of middle bridge at Woodstock, Windsor County, half a mile upstream from Kedron Brook.

Drainage area.--126 sq mi.

Records available.--June 1928 to September 1930 (discontinued).

Gage.--Chain gage. Datum of gage is 670.53 ft above mean sea level, datum of 1929.

Extremes.--1928-30: Maximum discharge, 8,450 cfs (revised) Apr. 26, 1929 (gage height, 8.7 ft, from graph based on gage readings), from rating curve extended above 720 cfs by logarithmic plotting; minimum daily, 14 cfs Sept. 5, 1929.

Maximum stage known, about 20.1 ft in November 1927, from information by local resident.

Revisions.--The figures of maximum discharge for the water years 1929-30 have been revised to 8,450 cfs Apr. 26, 1929 (gage height, 8.7 ft, from graph based on gage readings) and 4,670 cfs Apr. 7, 1930 (gage height, 7.6 ft, from graph based on gage readings), superseding those published in Water-Supply Papers 681 and 696, respectively.

Remarks.--Some regulation at low flow by mills above station. Small seasonal storage in reservoir at Plymouth.

Revisions.--Revised figures of discharge in cubic feet per second, for period of ice effect in the water year 1930, superseding figures published in Water Supply Paper 696, are given herewith:

Feb. 24, 1930..... 1,800  
Feb. 25, 1930..... 1,200

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
February 1930.....	1,800	59	312	2.48	2.58
Water year 1929-30..	3,470	20	230	1.83	24.74

## CONNECTICUT RIVER BASIN

Ottawaquechee River at North Hartland, Vt.

Location.--Lat 43°36'05", long. 72°21'20", on left bank 300 ft upstream from highway bridge at North Hartland, Windsor County, and 1 mile upstream from mouth.

Drainage area.--221 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 336.77 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--22 years, 397 cfs.

Extremes.--Maximum discharge during year, 16,300 cfs June 1 (gage height, 14.09 ft), from rating curve extended above 5,400 cfs on basis of computations of flow over dams at gage heights 15.58, 17.68, and 21.5 ft; minimum, 5.7 cfs Aug. 31; minimum daily, 7.0 cfs Aug. 31.

1930-52: Maximum discharge, 24,400 cfs Sept. 21, 1938 (gage height, 17.68 ft), from rating curve extended above 5,400 cfs by method explained above; minimum, 2.9 cfs July 31, 1933; minimum daily, 3.8 cfs July 3, 1933.

Maximum stage known, 21.5 ft in November 1927, from floodmarks (discharge, 30,400 cfs, by computation of peak flow over dam).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplants above station. Small seasonal storage in reservoir at Plymouth.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

2.3	90	3.5	440	1.1	6.5	3.0	262
2.5	123	4.0	685	1.3	12	3.5	447
3.0	249			1.5	21	4.0	685
				1.8	42	5.0	1,360
				2.2	84	6.0	2,420
				2.5	130	8.2	5,580

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	265	358	a540	430	250	702	640	4,530	194	80	46
2	*125	259	404	a900	530	235	1,440	580	5,490	158	29	331
3	116	1,230	395	a800	570	235	1,800	530	1,940	143	23	181
4	130	1,270	358	a600	570	240	1,680	485	1,360	110	97	122
5	114	768	530	a480	970	230	2,500	454	1,190	130	77	112
6	101	*595	1,090	a450	870	240	4,590	408	934	114	75	71
7	101	722	812	a390	670	240	2,810	408	945	119	77	12
8	1,170	1,240	762	a350	550	225	2,330	379	756	110	75	83
9	564	928	702	a380	570	230	2,330	339	655	81	65	48
10	346	734	790	*a450	510	230	2,650	316	560	109	22	68
11	302	620	620	374	470	255	2,990	350	550	649	101	*43
12	422	560	555	354	450	650	2,220	1,740	640	284	86	36
13	344	510	440	379	350	480	1,790	1,550	517	162	87	35
14	298	495	320	370	380	400	2,480	952	422	156	108	35
15	281	605	280	391	390	325	2,480	790	375	130	78	67
16	252	545	280	615	360	320	2,140	862	341	119	64	56
17	234	665	280	440	380	335	2,110	696	309	114	43	79
18	223	555	320	545	315	325	2,350	615	330	112	112	37
19	217	485	330	560	365	330	2,320	*545	292	82	80	29
20	204	431	350	490	340	315	2,520	500	272	67	70	49
21	188	362	400	462	330	335	1,940	918	234	110	78	30
22	198	339	700	300	320	418	*1,340	*800	208	112	78	78
23	183	426	560	450	295	444	1,520	675	211	109	59	40
24	186	545	450	480	290	449	1,220	565	*198	112	10	52
25	558	520	400	325	300	*458	934	678	301	77	57	48
26	430	436	360	380	280	495	834	1,170	253	71	67	54
27	331	408	330	620	*280	812	740	822	225	38	42	82
28	295	275	310	740	280	817	762	650	175	112	39	12
29	339	360	a320	520	255	690	964	625	178	112	36	47
30	288	358	a350	360	-	670	773	615	269	*112	10	64
31	265	-	a500	360	-	729	-	510	-	110	7.0	-
Total	8,941	17,511	14,656	14,855	12,670	12,407	57,259	21,147	24,651	4,218	1,932.0	2,047
Mean	288	584	475	479	437	400	1,909	682	822	136	62.3	68.2
Cfsm	1.30	2.64	2.14	2.17	1.98	1.81	8.64	3.09	3.72	0.615	0.282	0.309
In.	1.50	2.95	2.47	2.50	2.13	2.09	9.64	3.56	4.15	0.71	0.33	0.34

Calendar year 1951: Max 5,300 Min 83 Mean 476 Cfsm 2.15 In. 29.24  
 Water year 1951-52: Max 5,490 Min 7.0 Mean 525 Cfsm 2.38 In. 32.37

Peak discharge (base, 5,500 cfs).--Apr. 6 (4 a.m.) 6,000 cfs (8.46 ft); June 1 (9 p.m.) 16,300 cfs (14.09 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for stations on nearby streams, including White River at West Hartford.

Note.--Stage-discharge relation affected by ice Nov. 28, 29, Dec. 13-29, Jan. 22 to Mar. 21, and during much of period of no gage-height record.

## Sugar River at West Claremont, N. H.

Location.--Lat 43°23'15", long. 72°21'45", on right bank 0.2 mile downstream from Red-water Brook at West Claremont, Sullivan County.

Drainage area.--269 sq mi.

Records available.--October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 358.78 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--24 years, 391 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 4,890 cfs Apr. 6 (gage height, 3.13 ft); minimum daily, 53 cfs Aug. 23.

1928-52: Maximum discharge, 14,000 cfs Mar. 19, 1936 (gage height, 10.92 ft), from rating curve extended above 6,700 cfs on basis of computations of flow over dam at gage heights 10.49 and 10.92 ft; maximum gage height, 11.80 ft Mar. 12, 1936 (ice jam); minimum daily discharge, 30 cfs Sept. 26, 1948.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by mills above station and by Sunapee Lake (see p. 302).

Revisions (water years).--W 711: 1930(M). W 756: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	47	3.0	935
1.3	92	4.0	1,820
1.5	146	5.0	3,020
2.0	336	6.0	4,660
2.5	601		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	470	420	700	570	270	806	834	928	167	58	76
2	*139	450	460	760	577	260	1,420	707	2,890	130	66	243
3	125	2,600	430	660	595	270	1,740	619	1,560	111	66	170
4	122	1,600	*410	590	601	260	1,800	566	1,300	103	68	128
5	111	1,200	700	540	785	250	2,460	531	1,190	108	139	108
6	114	*1,000	1,000	500	799	300	4,350	465	942	100	151	92
7	150	1,200	800	470	680	295	5,160	433	834	95	103	77
8	2,000	1,600	720	440	580	285	2,590	403	759	95	85	85
9	1,000	1,300	700	*460	540	296	2,240	364	681	87	75	74
10	700	1,000	680	440	520	301	2,250	341	548	175	82	66
11	750	860	600	405	500	354	2,530	341	492	546	108	*70
12	1,000	740	500	385	450	670	2,140	858	481	313	103	68
13	760	660	420	390	*395	660	1,750	958	393	199	103	66
14	540	700	360	398	385	540	2,310	752	332	160	92	62
15	440	900	370	433	370	470	*2,760	644	310	126	82	70
16	370	800	360	694	350	435	2,230	613	280	112	75	82
17	340	850	360	610	360	420	1,980	548	259	100	163	75
18	320	740	350	640	330	410	1,870	486	255	132	148	73
19	300	670	470	670	350	410	1,800	438	213	73	103	78
20	280	610	400	620	350	*390	1,750	408	160	64	82	82
21	265	540	570	630	340	415	1,570	572	151	90	90	82
22	255	500	850	515	330	455	1,290	607	148	84	54	82
23	250	520	720	640	310	525	1,190	514	151	79	53	75
24	250	640	630	660	300	531	1,070	460	136	81	62	75
25	850	540	570	510	320	508	920	444	*173	68	68	85
26	600	500	510	550	320	589	884	720	141	73	63	82
27	520	460	470	1,120	310	855	792	662	176	80	64	82
28	520	400	450	1,090	300	942	850	536	160	85	62	75
29	700	460	450	910	290	814	1,370	465	148	80	62	75
30	560	440	500	600	772	772	1,020	465	189	74	60	63
31	490	-	740	560	-	834	-	408	-	*70	58	-
Total	14,955	24,950	16,870	18,490	12,907	14,785	55,012	17,162	16,360	3,860	2,648	2,621
Mean	482	832	544	596	445	477	1,834	554	546	125	85.4	87.4
(f)	+49	-25	-65	-24	-68	0	+396	+26	-123	-129	-105	-99

Adjusted for change in contents in Sunapee Lake

Mean	501	822	520	587	418	477	1,986	563	499	76.4	46.2	49.2
Cfs	1.86	3.06	1.93	2.18	1.55	1.77	7.38	2.09	1.86	0.284	0.172	0.183
In.	2.15	3.41	2.23	2.52	1.68	2.04	8.24	2.41	2.07	0.33	0.20	0.20

Observed				Adjusted			
Calendar year 1951:	Max 4,960	Min 84	Mean 551	Mean 547	Cfsm 2.03	In. 27.60	
Water year 1951-52:	Max 4,350	Min 53	Mean 548	Mean 543	Cfsm 2.02	In. 27.48	

Peak discharge (base, 3,000 cfs).--Nov. 3 (time and discharge unknown); Apr. 6 (9 a.m.) 4,890 cfs (6.13 ft); Apr. 14 (10 p.m.) 3,060 cfs (5.03 ft); June 2 (8:30 a.m.) 3,310 cfs (5.20 ft).

\* Discharge measurement made on this day.

† Change in contents in Sunapee Lake, in millions of cubic feet.

Note.--No gage-height record Oct. 7 to Jan. 9; discharge estimated on basis of 3 discharge measurements, weather records, recorded range in stage, and records for Cold River at Drewsville, Smith River near Bristol, Black River at North Springfield, Vt., and Saxtons River at Saxtons River, Vt. Stage-discharge relation affected by ice Jan. 10-13, 17-26, Jan. 28 to Feb. 1, Feb. 7 to Mar. 8, Mar. 12-22, and at times during period of no gage-height record in winter.

## Black River at North Springfield, Vt.

Location.--Lat 43°20'00", long. 72°30'55", on right bank at North Springfield, Windsor County, 1,300 ft upstream from Great Brook.

Drainage area.--158 sq mi.

Records available.--November 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 445.79 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--23 years, 279 cfs

Extremes.--Maximum discharge during year, 13,000 cfs June 1 (gage height, 16.09 ft), from rating curve extended above 3,200 cfs on basis of computations of flow over dams at gage heights 16.41 and 17.68 ft; minimum, 20 cfs Sept. 29; minimum daily, 20 cfs Sept. 29.

1929-52: Maximum discharge, 15,500 cfs Sept. 22, 1938 (gage height, 17.68 ft), from rating curve extended above 3,200 cfs as explained above; minimum daily, 10 cfs Oct. 17, 1937.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by mills above station.

Revisions (water years).--W 756: Drainage area. W 781: 1931(M), 1934(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

2.1	40	3.0	195	1.8	18	5.0	970
2.5	95	4.0	510	2.1	45	7.0	2,240
				2.5	102	9.0	3,840
				3.0	200	11.0	6,040
				4.0	510		

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	157	260	520	340	170	518	444	3,690	131	39	46
2	*84	143	305	580	380	170	1,140	387	5,010	103	37	230
3	71	1,480	300	480	420	175	1,270	357	1,490	91	32	95
4	40	1,020	267	400	450	175	1,330	312	865	85	39	59
5	44	662	*541	350	750	180	2,430	288	720	81	39	48
6	41	475	1,070	330	600	185	3,740	283	566	68	42	40
7	55	734	720	300	480	175	2,110	262	550	63	43	35
8	1,470	*1,260	648	260	400	175	1,690	249	447	67	36	41
9	472	838	558	280	400	175	1,680	227	391	66	33	45
10	353	582	546	*310	370	170	1,830	211	318	101	38	37
11	294	478	440	260	350	220	2,000	200	265	969	*52	42
12	533	427	388	240	350	500	1,510	1,340	361	292	53	31
13	362	378	325	250	260	400	1,190	1,250	223	189	43	39
14	264	360	240	230	*290	300	2,080	775	175	126	42	32
15	221	475	220	310	280	250	*1,850	*594	137	111	39	53
16	195	425	210	450	270	240	1,550	610	133	94	35	50
17	209	475	210	320	290	250	1,470	489	150	80	60	40
18	279	427	220	400	250	240	1,600	424	192	74	50	36
19	175	378	240	370	260	250	1,610	372	178	65	45	57
20	162	340	250	350	250	240	1,740	332	119	60	32	109
21	157	300	560	300	240	250	1,400	652	97	68	42	97
22	148	276	700	250	230	290	976	594	103	71	52	80
23	143	282	520	370	220	320	1,040	482	88	62	38	72
24	151	365	410	370	210	320	860	401	*85	54	34	43
25	493	327	350	260	205	320	622	606	292	46	46	37
26	326	270	310	300	205	355	582	845	186	53	45	39
27	239	260	290	520	200	574	514	610	215	57	39	37
28	253	230	260	600	190	586	620	468	149	57	29	38
29	256	260	290	420	185	503	865	420	140	69	44	20
30	218	260	280	310	-	496	518	433	165	39	35	24
31	204	-	560	310	-	542	-	365	-	*41	35	-
Total	7,995	14,344	12,488	10,980	9,315	9,196	42,315	15,862	17,500	3,533	1,268	1,652
Mean	258	478	403	354	321	297	1,410	512	583	114	40.9	55.1
Cfs/m	1.63	3.03	2.55	2.24	2.03	1.88	8.92	3.24	3.69	0.722	0.259	0.349
In.	1.88	3.38	2.94	2.58	2.19	2.16	9.96	3.73	4.12	0.83	0.30	0.39

Calendar year 1951: Max 3,790 Min 40 Mean 343 Cfs/m 2.17 In. 29.44  
Water year 1951-52: Max 5,010 Min 20 Mean 400 Cfs/m 2.53 In. 34.46

Peak discharge (base, 3,600 cfs).--Apr. 6 (3 a.m.) 5,220 cfs (10.25 ft); June 1 (10:30 p.m.) 13,000 cfs (16.09 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26 to Dec. 2, Dec. 13 to Mar. 25.

## Williams River at Brockway Mills, Vt.

Location.--Lat 43°12'30", long. 72°31'05", on left bank 25 ft upstream from highway bridge at Brockway Mills, Windham County, 4 miles downstream from Hall Brook, 4.6 miles upstream from mouth, and 6 miles northwest of Bellows Falls.

Drainage area.--103 sq mi.

Records available.--June 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 430 ft (from topographic map).

Average discharge.--12 years, 164 cfs.

Extremes.--Maximum discharge during year, 8,910 cfs June 1 (gage height, 13.39 ft), from rating curve extended above 3,300 cfs on basis of slope-area determination at gage height 13.31 ft; minimum, 9.3 cfs Aug. 31, Sept. 1.  
1940-52: Maximum discharge, that of June 1, 1952; minimum not determined, occurred Dec. 11, 1941, during period of ice effect; minimum daily, 3.6 cfs Aug. 27, 1949.  
Flood in September 1938 reached a stage of 22.7 ft, from floodmarks.

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

Revisions (water years).--W 1031: 1943-44(P).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	8.1	3.0	381
1.0	11	4.0	750
1.2	20	5.0	1,240
1.4	33	6.0	1,860
1.7	65	8.0	3,520
2.0	119		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*34	141	170	280	260	105	387	319	3,190	52	15	15
2	*33	136	205	400	280	100	863	275	2,100	41	14	220
3	*33	1,430	*196	320	300	100	936	246	689	36	14	57
4	34	718	172	260	320	98	999	228	499	33	14	38
5	35	410	426	240	540	94	2,010	208	413	32	21	27
6	32	*311	758	230	400	96	2,740	194	319	28	40	22
7	49	763	419	200	320	96	1,290	186	322	25	24	19
8	1,170	993	432	190	270	95	1,060	172	249	24	19	17
9	289	542	384	*185	240	93	1,070	157	218	22	17	16
10	189	391	351	180	225	92	1,180	143	186	90	17	15
11	223	339	272	160	215	165	1,240	194	165	585	26	*14
12	466	300	244	155	190	472	867	1,880	165	130	24	13
13	246	270	190	160	155	294	685	714	143	71	30	12
14	191	278	145	150	*175	220	*1,640	448	119	50	22	12
15	165	363	160	200	170	175	1,290	*384	102	42	18	13
16	145	302	155	290	165	160	980	400	89	38	16	22
17	129	331	150	200	160	165	854	319	82	32	49	21
18	117	262	155	280	145	162	876	278	*74	29	30	16
19	113	231	170	260	150	*177	772	241	62	28	20	16
20	102	204	160	240	145	172	736	228	56	26	17	18
21	94	172	400	210	135	191	510	588	50	24	16	16
22	89	162	480	185	130	214	403	369	50	26	15	14
23	87	216	350	290	125	244	394	286	47	23	14	14
24	85	257	280	240	130	259	322	241	44	24	13	16
25	385	211	250	190	130	249	294	421	*125	24	12	16
26	210	185	230	240	125	296	328	499	71	20	11	15
27	162	175	210	450	125	455	267	331	70	19	11	16
28	160	125	190	380	120	445	575	257	51	20	10	15
29	198	195	200	310	110	360	691	251	48	19	10	14
30	150	190	230	240	-	369	407	251	78	18	10	13
31	136	-	390	240	-	391	-	214	-	16	9.3	-
Total	5,551	10,603	8,544	7,555	5,955	6,604	26,666	10,920	9,876	1,647	578.3	752
Mean	179	353	276	244	205	213	889	352	329	53.1	18.7	25.1
Cfs/m	1.74	3.43	2.68	2.37	1.99	2.07	8.63	3.42	3.19	0.516	0.182	0.244
In.	2.00	3.83	3.08	2.73	2.15	2.38	9.63	3.94	3.57	0.59	0.21	0.27

Calendar year 1951: Max 3,320 Min 23 Mean 227 Cfs/m 2.20 In. 29.87

Water year 1951-52: Max 3,190 Min 9.3 Mean 260 Cfs/m 2.52 In. 34.38

Peak discharge (base, 2,600 cfs).--Oct. 8 (4 a.m.) 2,960 cfs (7.38 ft); Nov. 3 (2:30 to 3:30 p.m.) 2,650 cfs (7.03 ft); Apr. 6 (2 a.m.) 4,810 cfs (9.29 ft); May 12 (2 p.m.) 3,000 cfs (7.42 ft); June 1 (8:30 p.m.) 8,910 cfs (13.39 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26 to Dec. 2, Dec. 13 to Mar. 10, Mar. 14-17 (no gage-height record Dec. 17-21).

## CONNECTICUT RIVER BASIN

Saxtons River at Saxtons River, Vt.

Location.--Lat 43°08'15", long. 72°29'15", on right bank 130 ft upstream from highway bridge, 0.8 mile east of Saxtons River, Windham County, 1.4 miles upstream from Bundy Brook, and 3.9 miles upstream from mouth.

Drainage area.--72.2 sq mi.

Records available.--June 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map).

Average discharge.--12 years, 117 cfs.

Extremes.--Maximum discharge during year, 5,430 cfs June 1 (gage height, 11.37 ft), from rating curve extended above 1,800 cfs on basis of slope-area determinations at gage heights 10.51 and 11.37 ft; minimum, 6.9 cfs Aug. 29, 30; minimum daily, 7.2 cfs Aug. 28-31.

1940-52: Maximum discharge, that of June 1, 1952; minimum, 1.9 cfs July 25, 1949; minimum daily, 3.0 cfs Aug. 28, 1949.

Flood in September 1938 reached a stage of 17.9 ft, from floodmarks.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Occasional diurnal fluctuation at low flow caused by sawmill above station; more frequent prior to 1946.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	4.9	3.5	163
2.2	7.8	4.0	289
2.3	12	5.0	605
2.4	17	6.0	1,100
2.6	31	7.0	1,750
3.0	76	8.0	2,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*26	110	138	260	200	92	328	257	*2,400	35	*9.6	27
2	25	110	158	330	210	92	640	212	1,210	27	9.6	170
3	25	1,380	150	250	215	80	712	183	461	24	9.6	46
4	25	587	143	200	280	74	744	161	339	22	9.2	30
5	26	339	368	180	390	74	1,610	143	276	21	10	22
6	24	262	577	170	300	77	1,800	134	222	19	15	17
7	56	810	356	150	240	80	936	126	219	17	13	14
8	940	*841	328	130	200	75	771	115	165	16	11	13
9	223	452	314	135	180	73	748	104	141	15	10	12
10	132	342	306	140	170	71	822	96	120	137	11	11
11	158	295	243	*120	170	150	875	121	104	373	17	10
12	327	265	214	115	140	360	613	1,133	101	83	16	*9.6
13	185	735	170	120	125	240	490	445	87	50	18	9.2
14	137	256	125	115	125	185	1,200	295	76	37	14	9.6
15	115	334	130	160	*120	145	905	254	70	31	10	11
16	100	281	125	230	120	130	*872	*254	61	27	11	16
17	92	292	125	175	115	130	577	202	56	24	96	14
18	87	235	120	220	110	150	577	187	51	22	32	11
19	84	204	130	200	115	*137	521	161	*46	22	20	14
20	79	181	140	190	115	135	518	149	41	20	15	17
21	75	152	330	165	105	153	370	354	37	18	13	13
22	72	148	400	135	100	181	297	248	36	19	11	11
23	71	185	290	230	100	204	276	183	35	17	10	11
24	75	212	220	200	105	217	227	151	31	16	8.8	14
25	318	178	190	150	105	204	214	272	71	15	8.4	13
26	165	162	175	190	92	249	273	361	47	13	7.8	12
27	130	153	160	390	92	351	207	238	42	13	7.5	12
28	134	130	150	320	86	337	510	176	35	13	7.2	11
29	174	155	150	240	86	284	556	176	33	12	7.2	10
30	126	142	170	180	-	289	334	163	47	10	7.2	9.6
31	108	-	310	180	-	306	-	147	-	10	7.2	-
Total	4,314	9,428	6,905	5,970	4,511	5,305	19,323	7,199	6,660	1,178	452.3	600.0
Mean	139	314	223	193	156	171	644	232	222	38.0	14.6	20.0
Cfs/m	1.93	4.35	3.09	2.67	2.16	2.37	8.92	3.21	3.07	0.526	0.202	0.277
In.	2.22	4.86	3.56	3.08	2.32	2.73	9.95	3.71	3.43	0.61	0.23	0.31
Calendar year 1951: Max	2,600			Min 16		Mean 170		Cfs/m 2.35		In. 32.01		
Water year 1951-52: Max	2,400			Min 7.2		Mean 196		Cfs/m 2.71		In. 37.01		

Peak discharge (base, 1,750 cfs).--Oct. 8 (3 a.m.) 2,440 cfs (7.92 ft); Nov. 3 (2 p.m.) 2,530 cfs (8.04 ft); Nov. 7 (5 p.m.) 1,780 cfs (7.04 ft); Apr. 5 (11 p.m.) 3,370 cfs (9.08 ft); Apr. 14 (4 p.m.) 1,790 cfs (7.06 ft); June 1 (5 p.m.) 5,430 cfs (11.37 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 3, Dec. 13 to Mar. 16.

## Connecticut River at North Walpole, N. H.

Location.--Lat 43°07'15", long. 72°26'15", on left bank at North Walpole, Cheshire County, 100 ft upstream from Saxtons River and 0.7 mile downstream from Vilas Bridge between Bellows Falls, Vt., and North Walpole, N. H. Records include flow of Saxtons River.

Drainage area.--5,493 sq mi, includes that of Saxtons River.

Records available.--March 1942 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 218.63 ft above mean sea level, datum of 1929.

Average discharge.--10 years, 9,384 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 81,700 cfs June 2 (gage height, 27.30 ft); minimum daily, 115 cfs Aug. 31.

1942-52: Maximum discharge, 93,000 cfs Mar. 22, 1948 (gage height, 29.55 ft); minimum daily, that of Aug. 31, 1952.

Maximum stage known, 43.8 ft, from floodmarks, Mar. 19, 1936.

Remarks.--Records excellent except those for period of ice effect, which are good. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond (see p. 302), and other reservoirs (combined usable capacity, about 1½ billion cu ft).

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.7	96	7.0	4,230
4.0	206	10.0	11,700
4.5	488	15.0	28,500
5.0	930	20.0	48,700
5.5	1,510	26.0	75,700
6.0	2,270		

Discharge, in cubic feet per second, water year October 1951 to September 1952\*

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,730	6,230	7,700	10,500	8,000	6,000	14,800	21,200	18,000	*5,030	3,230	844
2	3,790	5,980	5,370	11,500	8,400	3,500	22,000	19,300	73,100	5,410	851	4,580
3	*4,600	14,600	7,350	11,500	9,000	5,500	33,200	16,000	53,500	4,960	345	3,220
4	5,000	31,100	8,420	12,000	10,500	5,900	35,000	12,600	42,200	1,740	1,850	3,540
5	5,180	25,600	*8,960	12,000	11,500	6,350	39,100	9,490	34,400	1,560	2,120	3,060
6	2,920	19,900	16,100	7,800	13,500	6,420	62,600	10,600	27,500	320	2,210	1,120
7	2,260	16,800	18,800	9,400	13,500	5,940	54,300	12,100	23,700	3,480	1,990	1,340
8	14,300	24,100	17,100	8,200	12,000	5,860	45,800	11,900	19,300	3,180	1,930	1,950
9	9,790	21,300	16,500	7,200	11,500	3,700	43,300	11,900	16,800	3,480	636	2,260
10	7,530	17,000	15,100	7,100	7,400	5,220	43,500	12,700	14,700	3,760	746	2,470
11	5,440	15,800	11,700	7,400	8,600	6,460	49,300	12,000	11,000	8,830	2,170	2,510
12	7,940	8,320	12,000	8,400	9,100	7,160	45,900	19,300	10,700	6,270	2,080	*1,840
13	6,690	9,780	11,200	5,300	9,600	11,300	40,900	28,500	12,000	828	2,200	697
14	2,900	9,710	7,160	7,000	8,000	10,400	42,200	22,900	12,000	3,170	1,610	393
15	4,550	12,000	5,340	*7,400	6,600	9,140	51,100	21,500	8,930	4,230	2,090	2,160
16	6,030	12,500	2,500	9,200	7,800	6,180	49,200	*19,500	8,390	3,860	471	1,840
17	6,230	16,000	4,900	11,500	3,200	6,350	*44,600	15,600	8,180	2,780	804	1,720
18	4,980	14,300	5,400	11,500	8,400	7,770	42,800	15,300	7,260	2,510	2,770	2,000
19	3,400	11,600	4,800	12,000	7,800	7,900	43,100	12,500	7,630	1,420	2,050	1,910
20	3,950	9,980	6,500	11,000	7,600	6,960	43,600	11,900	8,190	802	2,620	309
21	1,100	10,100	6,600	10,000	7,200	*8,650	45,200	14,000	5,240	3,680	2,820	181
22	3,990	7,150	9,000	8,400	7,400	7,500	42,100	17,800	2,740	3,830	2,400	2,250
23	3,860	7,050	10,500	8,000	5,600	6,820	40,300	17,700	6,570	2,860	230	2,290
24	4,410	7,780	11,000	8,200	5,200	9,950	40,000	15,900	5,650	3,190	138	2,320
25	5,740	10,700	8,600	9,000	5,800	11,400	34,900	13,200	5,760	2,680	1,840	2,120
26	5,990	11,900	9,200	9,200	7,000	10,900	30,800	17,900	5,800	1,070	1,940	1,940
27	4,810	10,700	8,200	10,500	6,400	14,000	25,600	20,400	8,540	389	1,890	507
28	5,900	7,240	8,000	12,000	5,700	18,000	25,300	17,400	10,200	2,330	1,970	220
29	7,120	6,650	8,400	12,000	6,200	17,100	27,100	14,900	7,460	2,570	2,030	1,680
30	6,950	7,470	8,600	10,500	-	13,300	23,800	13,500	5,870	3,170	710	2,240
31	5,620	-	9,400	8,200	-	12,800	-	11,900	-	2,770	115	-
Total	162,670	389,340	288,400	293,900	238,500	264,410	*1,180,4	489,380	481,010	95,959	50,836	55,511
Mean	5,247	12,980	9,303	9,481	8,224	8,529	39,350	15,790	16,030	3,095	1,640	1,850
(†)	-1,012	+614	-98	-1,390	-2,347	-1,995	+4,866	+2,150	+1,069	-1,354	-1,130	-945

Adjusted for change in reservoir contents

Mean	4,870	13,210	9,267	8,962	7,287	7,785	41,220	16,590	16,450	2,590	1,218	1,486
Cfsm	0.687	2.40	1.69	1.63	1.33	1.42	7.50	3.02	2.99	0.472	0.222	0.271
In.	1.02	2.68	1.94	1.88	1.43	1.63	8.57	3.46	3.34	0.54	0.26	0.30

	Observed				Adjusted							
Calendar year 1951:	Max	60,800	Min	639	Mean	10,160	Mean	10,120	Cfsm	1.84	In.	25.00
Water year 1951-52:	Max	73,100	Min	115	Mean	10,900	Mean	10,850	Cfsm	1.98	In.	26.87

Peak discharge (base, 44,000 cfs).--Apr. 6 (12:30 to 1:30 p.m.) 64,900 cfs (23.61 ft); Apr. 15 (4 to 6 a.m.) 51,600 cfs (20.64 ft); June 2 (8:30 to 9:30 a.m.) 81,700 cfs (27.30 ft).

\* Discharge measurement made on this day.

† Change in contents in First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond, Union Village reservoir, 4 reservoirs in Mascoma River basin, and Sunapee Lake, in millions of cubic feet.

\* Expressed in thousands.

Note.--Stage-discharge relation affected by ice Dec. 16 to Mar. 4 (no gage-height record Jan. 30 to Feb. 15; discharge estimated on basis of weather records, recorded range in stage, powerplant records, and records for Saxtons River at Saxtons River, Vt.).

## Cold River at Drewsville, N. H.

Location.--Lat 43°07'55", long. 72°23'25", on left bank 50 ft upstream from bridge on State Highway 101 at Drewsville, Cheshire County, 1.0 mile upstream from Great Brook, 2.7 miles east of Bellows Falls, Vt., and 3.4 miles upstream from mouth.

Drainage area.--82.7 sq mi.

Records available.--June 1940 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 375 ft (from topographic map).

Average discharge.--12 years, 115 cfs.

Extremes.--Maximum discharge during year, 3,100 cfs June 1 (gage height, 8.02 ft); minimum, 6.5 cfs Aug. 29, 30.

1940-52: Maximum discharge, 8,160 cfs Nov. 26, 1950 (gage height, 10.29 ft), from rating curve extended above 3,400 cfs by logarithmic plotting; minimum, 1.3 cfs Sept. 23, 1940.

Remarks.--Records good except those for periods of ice effect, which are fair. Occasional diurnal fluctuation at low flow caused by sawmill above station; more frequent prior to 1945.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

2.2	25	4.5	361	1.4	6.8	3.5	154
2.5	42	5.0	527	1.6	11	4.0	254
3.0	93	5.5	740	1.8	16	4.5	395
3.5	154	6.0	1,050	2.1	26	5.0	577
4.0	238	7.0	1,890	2.5	49	6.0	1,140
				3.0	95	7.0	1,920

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*36	129	120	230	204	80	308	202	462	32	*7.8	10
2	34	122	126	250	209	75	569	170	1,030	24	7.4	87
3	33	1,560	*115	220	202	80	650	148	462	21	7.6	35
4	32	1,010	121	190	219	70	762	135	294	19	7.2	26
5	31	500	251	160	284	73	1,270	125	226	18	9.7	19
6	28	*353	367	175	257	76	1,880	117	165	17	17	27
7	34	478	287	130	221	78	1,080	115	147	15	13	13
8	775	705	255	110	182	76	792	107	120	14	10	11
9	353	453	244	120	182	74	670	96	103	13	8.7	9.8
10	207	356	245	125	157	73	700	87	88	39	11	*9.3
11	231	275	195	*110	148	171	759	84	76	76	22	8.7
12	376	232	170	105	140	370	582	235	115	40	17	9.1
13	253	209	120	115	100	255	462	186	79	27	16	8.9
14	190	215	85	110	110	200	*726	*147	63	22	12	8.7
15	154	339	100	135	*110	165	754	130	54	19	9.8	8.9
16	133	294	85	200	110	150	546	132	46	16	9.8	11
17	116	312	80	150	110	140	462	116	*41	14	112	10
18	104	251	85	224	90	130	418	108	38	13	46	9.3
19	96	209	90	200	105	*138	377	98	36	14	24	19
20	88	179	95	222	110	135	341	92	32	13	17	25
21	79	147	205	200	105	153	288	147	39	12	13	17
22	73	153	295	130	100	177	237	140	26	12	12	14
23	69	156	225	305	95	199	215	114	25	11	10	14
24	69	205	195	235	95	192	184	98	26	11	8.7	14
25	294	180	160	155	95	188	175	108	60	10	8.1	14
26	197	155	145	270	85	227	244	153	42	9.1	7.8	13
27	146	135	130	633	85	330	192	126	32	9.5	7.4	15
28	148	100	115	495	80	339	256	100	27	9.8	7.0	15
29	202	120	120	347	85	297	370	93	27	9.5	6.8	13
30	151	115	130	236	-	290	267	107	40	8.7	6.8	11
31	132	-	230	209	-	302	-	92	-	7.9	6.8	-
Total	4,844	9,607	5,186	6,496	4,073	5,303	16,536	3,908	4,011	576.5	479.4	506.7
Mean	156	320	167	210	140	171	551	126	134	18.6	15.5	16.9
Cfsm	1.89	3.87	2.02	2.54	1.69	2.07	6.66	1.52	1.62	0.225	0.187	0.204
In.	2.18	4.32	2.33	2.92	1.83	2.38	7.44	1.76	1.80	0.26	0.22	0.23

Calendar year 1951: Max 1,820 Min 16 Mean 159 Cfsm 1.92 In. 26.17

Water year 1951-52: Max 1,880 Min 6.8 Mean 168 Cfsm 2.03 In. 27.67

Peak discharge (base, 1,000 cfs).--Oct. 8 (4:30 a.m.) 1,400 cfs (6.48 ft); Nov. 3 (2:45 p.m.) 2,770 cfs (7.77 ft); Apr. 6 (12:30 a.m.) 2,470 cfs (7.52 ft); June 1 (10:30 p.m.) 3,100 cfs (8.02 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 25-29, Dec. 3, Dec. 10 to Jan. 14, Jan. 17, 18, 21-26, Feb. 13 to Mar. 4, Mar. 13-18.



## West River at Jamaica, Vt.

Location.--Lat 43°06'30", long. 72°46'30", on left bank a quarter of a mile upstream from highway bridge at Jamaica, Windham County, and 0.4 mile upstream from Ball Mountain Brook.

Drainage area.--179 sq mi.

Records available.--October 1946 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map).

Average discharge.--6 years, 362 cfs.

Extremes.--Maximum discharge during year, 24,100 cfs June 1 (gage height, 13.97 ft), from rating curve extended above 9,800 cfs by logarithmic plotting and verified by slope-area determination at gage height 14.87 ft; minimum, 9.8 cfs Sept. 1  
1946-52: Maximum discharge, 29,500 cfs Dec. 31, 1948 (gage height, 14.87 ft), from rating curve extended above 9,800 cfs as explained above; minimum, 5.0 cfs Aug. 28, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation caused by mill above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1				June 2 to Sept. 30			
4.1	44	6.5	1,110	3.7	10	5.0	218
4.3	71	7.0	1,590	3.9	21	5.5	440
4.6	134	8.0	2,860	4.1	38	6.0	730
5.0	260	9.0	4,610	4.4	76	7.0	1,590
5.5	480	10.1	7,410	4.7	128		
6.0	760						

Note.--Same as preceding table above 7.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	249	270	530	460	180	680	520	7,360	91	17	14
2	66	242	350	700	510	175	1,500	430	4,290	61	15	385
3	69	1,840	340	560	540	170	1,700	350	1,340	47	15	120
4	*64	1,380	300	420	570	170	1,600	310	800	41	*15	85
5	62	712	766	340	950	165	3,500	270	594	38	15	51
6	54	500	1,420	320	760	170	5,000	245	445	36	50	35
7	66	944	832	300	570	165	2,350	230	490	30	37	27
8	2,770	1,690	918	295	460	160	1,700	210	352	27	23	23
9	72	932	773	280	400	155	1,600	190	276	24	24	21
10	430	640	818	270	365	150	2,200	170	222	37	22	20
11	480	541	*460	255	340	210	2,600	220	183	350	26	19
12	1,400	500	370	240	310	950	1,750	3,200	230	130	29	18
13	696	*435	290	250	270	640	1,350	1,600	174	71	32	17
14	460	524	220	*235	285	440	2,800	898	124	48	28	16
15	376	995	255	290	280	320	2,600	694	104	*37	23	16
16	316	682	225	600	270	270	2,000	754	87	32	21	19
17	260	712	215	320	260	280	1,900	541	77	30	55	41
18	231	525	220	470	245	285	*2,060	495	77	25	56	27
19	211	421	235	450	*250	300	2,150	*412	70	27	34	25
20	198	349	260	400	240	290	2,500	358	66	32	25	36
21	185	280	400	340	230	320	1,550	882	56	25	21	35
22	167	250	850	290	225	400	980	845	51	24	20	27
23	156	535	700	480	220	450	1,050	574	47	22	18	24
24	150	736	540	400	210	480	820	430	43	29	16	23
25	868	557	420	330	215	*408	600	819	315	37	14	23
26	507	390	380	420	205	425	720	1,120	158	25	13	21
27	349	350	335	800	200	680	560	780	143	23	13	21
28	304	230	280	680	195	710	680	580	92	24	12	21
29	390	280	320	490	190	550	1,600	470	69	22	11	21
30	292	270	350	420	-	510	860	475	124	19	11	20
31	253	-	590	400	-	590	-	358	-	19	10	-
Total	12,671	18,691	14,682	12,565	10,225	11,068	53,140	19,370	18,459	1,483	725	1,251
Mean	409	623	474	405	353	357	1,771	625	615	47.8	23.4	41.7
Cfs/m	2.28	3.48	2.65	2.26	1.97	1.99	9.89	3.49	3.44	0.267	0.131	0.233
In.	2.63	3.88	3.05	2.61	2.12	2.30	11.04	4.02	3.84	0.31	0.15	0.26

Calendar year 1951: Max 4,010 Min 33 Mean 419 Cfs/m 2.34 In. 31.77

Water year 1951-52: Max 7,360 Min 10 Mean 476 Cfs/m 2.66 In. 36.21

Peak discharge (base, 4,500 cfs).--Oct. 8 (7 a.m.) 4,920 cfs (9.15 ft); Apr. 5 or 6 (time and discharge unknown); May 12 (time and discharge unknown); June 1 (7 p.m.) 24,100 cfs (13.97 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 17-29, Jan. 30 to Feb. 19, Mar. 14-24, Mar. 27 to Apr. 17, Apr. 19 to May 12; discharge estimated on basis of recorded range in stage when available, 1 discharge measurement, weather records, and records for station at Newfane. Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 4, Dec. 11 to Mar. 13, Mar. 26.

## West River at Newfane, Vt.

Location.--Lat 42°59'45", long. 72°38'20", on right bank 600 ft downstream from highway bridge and 1 mile northeast of Newfane, Windham County.

Drainage area.--308 sq mi.

Records available.--September 1919 to September 1923, October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 384.21 ft above mean sea level, datum of 1929. Prior to June 27, 1931, chain gage at site 600 ft upstream at same datum.

Average discharge.--28 years, 611 cfs.

Extremes.--Maximum discharge during year, 31,000 cfs June 1 (gage height, 16.75 ft), from rating curve extended above 20,000 cfs on basis of contracted-opening determination at gage height 19.3 ft and slope-area determinations at gage heights 19.46 and 22.81 ft; minimum, 24 cfs Aug. 30 to Sept. 1.

1919-23, 1928-52: Maximum discharge, 52,300 cfs Sept. 21, 1938 (gage height, 22.81 ft, from floodmarks), from rating curve extended above 20,000 cfs as explained above; minimum, 13 cfs Sept. 17, 18, 1948, Aug. 27, 28, 1949.

Flood of Nov. 3, 1927, reached a stage of 23.0 ft, from floodmarks, at chain-gage site (discharge, 45,000 cfs, from rating curve extended by logarithmic plotting and on basis of computation of flow over dam at West Dummerston).

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)††
-	1920	Apr. 12, 1920	†11,500	11.9
-	1921	Mar. 9, 1921	†11,500	11.9
541, 561....	1922	Apr. 12, 1922	12,400	12.3
561.....	1923	Apr. 29, 1923	7,860	10.2
681, 696....	1929	Mar. 24, 1929	10,600	11.5
696.....	1930	Apr. 7, 1930	6,140	9.3
711.....	1931	Apr. 11, 1931	15,200	12.0

† Not previously published.

†† From graph based on gage readings.

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

Revisions.--W 756: Drainage area. Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1922 and 1923, superseding those published in Water-Supply Papers 541 and 561, are given herewith:

1922		1923	
Apr.	8..... 4,700	Apr.	5..... 6,170
	9..... 4,110		6..... 6,350
	10..... 4,860		7..... 5,020
	11..... 5,020		8..... 4,250
	12..... 8,680		21..... 3,420
May	5..... 4,110		29..... 6,530
	19..... 7,080		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
April 1922.....	8,680	372	2,090	6.79	7.59
May.....	7,080	179	985	3.20	3.69
Water year 1921-22	8,680	52	628	2.04	27.68
April 1923.....	6,530	570	2,370	7.69	8.60
Water year 1922-23	6,530	46	442	1.44	19.50

## West River at Newfane, Vt.--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

4.3	110	6.0	1,330	3.97	24	4.2	64
4.5	177	7.0	2,550	4.0	28	4.5	173
5.0	429	8.0	4,460	4.1	43	5.0	429
5.5	820	10.3	11,100	Note.--Same as preceding table above 5.0 ft.			

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	449	460	960	800	320	1,150	1,060	10,900	191	34	28
2	113	429	600	1,200	900	315	2,600	838	9,370	136	32	657
3	119	4,290	600	1,100	960	310	3,030	698	2,460	103	30	271
4	*119	2,920	520	800	1,000	315	2,860	602	1,560	90	*30	178
5	119	1,460	1,220	640	1,700	305	6,040	526	1,190	83	30	114
6	110	1,000	2,800	600	1,350	310	*8,620	476	883	74	45	80
7	118	1,970	1,640	560	1,000	300	4,170	456	856	67	67	57
8	5,750	3,580	1,650	540	800	290	2,980	411	674	57	51	47
9	1,620	1,930	1,360	530	720	285	2,850	368	533	55	43	43
10	847	1,300	1,520	520	650	280	3,710	335	462	99	40	42
11	765	1,070	*1,020	480	610	400	4,640	384	374	550	45	40
12	2,530	960	847	460	540	1,450	3,070	5,460	392	288	53	36
13	1,380	829	600	470	500	1,100	2,330	3,270	352	169	53	34
14	865	910	415	*450	530	760	4,740	1,780	283	118	53	34
15	674	1,790	450	500	510	560	4,430	1,280	240	86	43	*34
16	555	1,280	420	1,050	500	490	3,490	1,430	204	*74	40	34
17	469	1,320	410	630	490	500	3,250	1,030	182	62	172	43
18	398	980	420	800	460	510	3,750	930	169	60	144	49
19	362	775	450	830	470	530	3,720	*802	157	51	80	45
20	335	626	500	750	*450	520	4,340	658	144	53	55	45
21	313	490	700	660	430	580	2,800	1,430	128	53	45	57
22	293	425	1,500	540	420	700	1,790	1,570	121	49	40	47
23	273	766	1,200	860	400	800	1,640	1,070	110	45	36	43
24	273	1,200	940	740	390	850	1,500	793	103	47	34	43
25	1,460	980	750	600	400	*740	1,090	1,220	346	57	32	42
26	1,000	700	670	760	380	700	1,310	2,100	322	49	29	40
27	658	600	610	1,400	370	1,200	1,020	1,440	250	45	28	38
28	548	400	500	1,200	355	1,250	1,600	970	200	43	26	36
29	722	480	580	900	350	980	2,890	802	144	43	26	36
30	555	460	640	760	-	900	1,550	838	186	40	25	34
31	469	-	1,000	720	-	1,040	-	634	-	36	24	-
Total	23,925	36,369	26,992	23,010	18,435	19,590	93,160	35,661	33,295	2,973	1,485	2,327
Mean	772	1,212	871	742	636	632	3,105	1,150	1,110	95.9	47.9	77.6
Cfs/m	2.51	3.94	2.83	2.41	2.06	2.05	10.1	3.73	3.60	0.311	0.156	0.252
In.	2.89	4.38	3.26	2.78	2.23	2.37	11.25	4.31	4.02	0.36	0.18	0.28

Calendar year 1951: Max 10,800 Min 85 Mean 810 Cfs/m 2.63 In. 35.69  
Water year 1951-52: Max 10,900 Min 24 Mean 867 Cfs/m 2.81 In. 38.32

Peak discharge (base, 8,800 cfs).--Oct. 8 (6 a.m.) 10,200 cfs (10.04 ft); Apr. 6 (12:30 a.m.) 12,000 cfs (10.59 ft); May 12 (2:30 p.m.) 9,020 cfs (9.64 ft); June 1 (9:30 p.m.) 31,000 cfs (16.75 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 26 to Dec. 4, Dec. 13 to Apr. 2.

## Connecticut River at Vernon, Vt.

Location.--Lat 42°46'10", long. 72°30'50", on right bank just downstream from Vernon Dam at Vernon, Windham County, and 2 miles upstream from Ashuelot River.

Drainage area.--6,266 sq mi.

Records available.--February to April 1936 (in Water-Supply Paper 798), September and October 1938 (in Water-Supply Paper 867), October 1944 to September 1952.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Jan. 20, 1948, at datum 94.13 ft higher.

Average discharge.--8 years (1944-52), 10,840 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 86,600 cfs June 2 (gage height, 204.89 ft); minimum daily, 235 cfs Sept. 1.  
1936, 1938, 1944-52: Maximum discharge, 176,000 cfs Mar. 19, 20, 1936 (gage height, 128.8 ft, datum then in use), from rating curve extended above 69,000 cfs; minimum daily, 99 cfs Oct. 8, 1944.

Remarks.--Records good except those below 1,000 cfs, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond (see p. 302), and other reservoirs (combined usable capacity, about 15 billion cu ft).

Revisions.--W 1031: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,800	7,800	9,140	13,000	9,200	7,180	16,900	24,100	22,800	6,030	3,270	235
2	5,080	8,010	5,180	13,500	10,500	4,190	25,200	21,560	81,500	4,890	1,100	6,900
3	4,850	20,900	8,590	14,000	11,500	6,570	3,800	18,400	35,800	4,850	658	4,480
4	3,800	40,100	8,890	14,200	12,500	6,720	44,000	14,900	49,600	1,340	2,280	4,060
5	4,090	30,200	11,800	14,200	13,000	6,620	46,600	9,970	40,800	996	2,900	3,950
6	1,880	23,900	17,800	10,000	16,000	8,580	73,400	6,380	32,400	655	1,860	1,040
7	3,740	20,600	20,800	11,000	17,000	6,680	69,500	12,500	26,700	3,730	2,450	248
8	21,700	29,200	17,800	9,000	13,500	6,340	57,300	12,200	21,900	4,850	2,280	2,550
9	*15,300	26,700	18,100	8,800	13,500	3,560	51,300	12,200	18,700	3,860	670	*3,130
10	9,870	19,700	17,200	8,200	11,000	6,210	50,700	12,500	16,100	5,510	918	2,560
11	6,980	18,800	13,500	9,100	9,000	7,530	54,000	12,000	13,700	11,100	2,490	2,010
12	12,500	15,900	*13,400	9,100	11,000	9,110	55,100	23,700	9,700	6,780	3,060	2,120
13	10,200	10,500	13,200	6,400	11,000	12,400	48,500	30,300	11,100	780	3,290	757
14	1,490	9,250	8,870	7,800	9,000	12,900	47,600	25,100	10,000	3,550	2,680	284
15	5,760	13,000	5,960	9,400	8,600	10,900	58,600	22,900	9,650	3,650	3,630	2,140
16	7,300	13,600	4,700	11,000	6,900	7,690	57,800	21,200	8,340	3,950	294	2,240
17	6,450	17,400	5,500	12,500	5,800	7,950	*53,400	17,200	8,080	2,760	361	2,180
18	6,470	16,300	5,000	12,500	8,700	8,500	49,700	16,300	8,300	1,930	2,660	2,040
19	7,020	*14,200	6,400	13,500	9,500	8,540	49,100	14,000	6,860	1,540	1,950	2,310
20	4,490	13,000	6,700	13,500	9,200	7,840	49,000	*13,000	7,770	664	3,620	266
21	970	11,500	8,600	13,500	9,200	9,940	50,000	14,500	7,030	3,960	4,290	248
22	4,890	6,520	11,700	9,500	8,800	9,200	48,400	19,400	2,580	4,280	4,040	2,400
23	4,800	7,790	11,800	9,800	8,000	7,570	43,300	18,600	5,860	2,700	356	2,680
24	5,430	9,530	13,000	10,000	5,200	11,600	42,700	16,900	6,500	3,180	328	2,060
25	8,370	11,500	9,600	11,500	6,730	12,900	39,500	14,800	5,570	3,230	2,290	*2,490
26	8,760	12,400	11,000	10,500	6,580	*12,900	35,400	19,700	5,590	1,070	2,390	2,250
27	8,340	12,800	10,000	13,000	7,110	15,200	29,600	21,700	6,930	726	2,490	271
28	5,840	8,240	8,200	16,000	6,580	19,900	26,900	18,600	9,930	2,420	2,120	240
29	7,910	6,410	8,800	14,500	7,580	18,800	33,800	15,700	8,610	3,690	2,890	2,280
30	8,930	8,520	7,900	15,000	-	15,600	28,600	14,900	7,020	3,640	842	2,450
31	6,580	-	12,000	10,000	-	13,300	-	13,200	-	2,700	248	-
Total	214,070	464,270	330,930	351,300	284,180	303,310	1,370,500	530,350	535,140	104,591	64,505	62,748
Mean	6,905	15,480	10,680	11,330	9,799	9,784	45,680	17,110	17,840	3,374	2,081	2,092
(†)	-1,012	+614	-98	-1,390	-2,347	-1,995	+4,866	+2,150	+1,069	-1,354	-1,130	-945

Adjusted for change in reservoir contents

Mean	6,528	15,710	10,640	10,810	8,863	9,039	47,560	17,910	18,250	2,868	1,659	1,727
Cfsm	1.04	2.51	1.70	1.73	1.41	1.44	7.59	2.86	2.91	0.458	0.265	0.276
In.	1.20	2.80	1.96	1.99	1.53	1.66	8.47	3.30	3.25	0.53	0.31	0.31

Observed

Adjusted

Calendar year 1951:	Max	73,600	Min	763	Mean	11,810	Mean	11,770	Cfsm	1.68	In.	25.50
Water year 1951-52:	Max	81,500	Min	235	Mean	12,610	Mean	12,560	Cfsm	2.00	In.	27.31

Peak discharge (base, 50,000 cfs).--Apr. 6 (4:40 to 6:40 p.m.) 76,200 cfs (202.29 ft); Apr. 12 (1 to 6:20 a.m.) 58,200 cfs (197.31 ft); Apr. 15 (3:40 to 5:40 p.m.) 59,200 cfs (198.04 ft); June 2 (2:15 a.m.) 86,600 cfs (204.89 ft).

\* Discharge measurement made on this day.

† Change in contents in First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond, Union Village Reservoir, 4 reservoirs in Mascoma River basin, and Sunapee Lake, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Dec. 16 to Feb. 24.

## Ashuelot River near Gilsum, N. H.

Location.--Lat 43°02'20", long. 72°16'15", on right bank 50 ft downstream from White Brook, 60 ft upstream from stone-arch bridge just off Keene-Newport road, and 0.7 mile downstream from Gilsum, Cheshire County.

Drainage area.--71.1 sq mi.

Records available.--August 1922 to September 1952.

Gage.--Water-stage recorder. Concrete control since Oct. 13, 1942. Datum of gage is 773.86 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--30 years, 125 cfs.

Extremes.--Maximum discharge during year, 1,870 cfs Apr. 6 (gage height, 7.26 ft); minimum not determined; minimum daily, 9.0 cfs Aug. 30, 31, 1922-52. Maximum discharge, 5,220 cfs Sept. 21, 1938 (gage height, 11.24 ft in gage well), from rating curve extended above 2,000 cfs on basis of float measurements and slope-area determination at gage height 11.24 ft; maximum gage height, 12.80 ft Mar. 19, 1936, in gage well and in river; minimum discharge, about 1 cfs Oct. 6, 1922, July 10, 1923.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
561.....	1923	Apr. 29, 1923	1,690	8.25
581.....	1924	Apr. 8, 1924	1,430	7.75
601.....	1925	Mar. 29, 1925	1,690	8.25
621.....	1926	Apr. 25, 1926	1,730	8.33
641.....	1927	Mar. 15, 1927	915	6.60
661.....	1928	Nov. 4, 1927	3,460	11.34
681.....	1929	May 3, 1929	1,400	7.18
696.....	1930	Mar. 9, 1930	955	6.19
711.....	1931	Apr. 11, 1931	1,750	7.90
726.....	1932	Apr. 12, 1932	1,290	6.94
-	1941	Feb. 9, 1941	†710	-

† Not previously published.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by reservoir above station. Diurnal fluctuation by powerplant above station prior to 1938.

Revisions (water years).--W 661: Drainage area. W 781: 1934(M). Revised figures of discharge for the high-water periods in the water years 1928 and 1931, superseding those published in Water-Supply Papers 661 and 711, are given herewith:

1927		1931	
Nov.	4..... 3,000	Apr.	11..... 1,530
	5..... 1,810		12..... 1,380
	6..... 870		13..... 980
			14..... 820
1931			
Apr. 10.....	80		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
November 1927.....	3,000	70	425	5.98	6.66
Water year 1927-28.....	3,000	23	190	2.67	36.39
April 1931.....	1,530	210	527	7.41	8.27
Water year 1930-31.....	1,530	6.2	91.9	1.29	17.51

## CONNECTICUT RIVER BASIN

Ashuelot River near Gilsum, N. H.--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

2.1	42	4.0	376	1.6	8.5	4.0	376
2.5	82	5.0	685	1.7	13	5.0	685
3.0	147	6.0	1,120	2.0	36	6.0	1,120
3.5	247			2.5	87	7.0	1,690
				3.0	159	8.0	2,430

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	144	100	214	230	64	260	311	294	28	18	20
2	52	135	100	228	210	65	395	246	856	23	13	80
3	*50	628	97	215	195	63	493	198	601	19	12	45
4	48	<u>1,020</u>	98	190	189	<u>61</u>	568	162	406	19	11	40
5	47	678	176	170	227	63	894	138	311	18	12	28
6	42	463	*316	150	248	65	1,700	118	235	17	12	21
7	45	398	332	135	227	66	*1,220	111	196	16	12	17
8	314	587	<u>303</u>	120	198	65	904	102	148	15	11	15
9	358	544	275	125	180	64	678	91	115	*15	11	14
10	293	420	277	115	162	63	657	81	99	22	13	*12
11	245	319	225	96	145	91	702	77	86	29	20	11
12	357	245	183	92	*127	210	646	166	83	26	18	11
13	358	203	150	90	93	227	553	*237	73	20	33	11
14	275	*187	110	87	110	206	626	243	62	17	20	11
15	216	257	95	98	110	175	740	227	54	15	14	11
16	187	260	90	170	105	145	604	204	45	13	15	11
17	161	270	85	160	105	122	535	169	40	13	<u>35</u>	10
18	144	240	80	195	94	*109	484	151	37	13	23	<u>9.3</u>
19	128	197	84	220	115	111	463	127	33	13	17	28
20	114	163	90	210	115	109	448	111	31	13	14	46
21	101	135	150	250	94	127	417	154	28	12	14	41
22	94	120	250	255	88	151	373	183	26	12	13	39
23	89	119	200	260	82	173	306	162	25	12	12	37
24	83	157	170	250	84	178	256	137	24	12	11	33
25	208	172	150	230	81	169	<u>231</u>	141	40	<u>11</u>	11	30
26	245	157	135	260	75	185	265	189	37	11	11	26
27	197	146	120	560	72	258	250	169	*34	13	11	23
28	172	110	110	598	71	292	290	137	28	12	10	19
29	210	<u>120</u>	105	<u>448</u>	<u>67</u>	<u>269</u>	417	120	27	11	10	16
30	187	110	110	315	-	254	384	127	33	11	9.0	13
31	158	-	175	250	-	263	-	120	-	15	9.0	-
Total	5,214	8,704	4,941	6,756	3,899	4,463	16,759	4,909	4,107	496	455.0	726.3
Mean	168	290	159	218	134	144	559	158	137	16.0	14.7	24.2
Cfsm	2.36	4.08	2.24	3.07	1.88	2.03	7.86	2.22	1.93	0.225	0.207	0.340
In.	2.73	4.55	2.58	3.53	2.04	2.33	8.77	2.57	2.15	0.26	0.24	0.38

Calendar year 1951: Max 1,510 Min 23 Mean 168 Cfsm 2.36 In. 32.15

Water year 1951-52: Max 1,700 Min 9.0 Mean 168 Cfsm 2.36 In. 32.13

Peak discharge (base, 1,000 cfs).--Nov. 3 (9:30 p.m.) 1,200 cfs (6.16 ft); Apr. 6 (8:45 a.m.) 1,870 cfs (7.26 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 19-22, 28-30, Aug. 9 to Sept. 9; discharge estimated on basis of weather records, records of inflow to Surry Mountain Reservoir, and records for stations on nearby streams. Stage-discharge relation affected by ice Nov. 21, 22, Nov. 28 to Dec. 1, Dec. 3, 13-31, Jan. 3-27, Jan. 30 to Feb. 3, Feb. 13-25, Mar. 15, 16.

Ashuelot River below Surry Mountain Dam, near Keene, N. H.

Location.--Lat 42°59'45", long. 72°18'40", on right bank 600 ft downstream from Surry Mountain Dam, 2½ miles upstream from Sturtevant Brook, and 4½ miles north of Keene, Cheshire County.

Drainage area.--101 sq mi.

Records available.--September 1945 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 480.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Average discharge.--7 years, 172 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 840 cfs Nov. 11 (gage height, 8.23 ft); minimum daily, 11 cfs July 26.  
1945-52: Maximum discharge, 1,090 cfs Mar. 31, Apr. 9, 1950 (gage height, 8.94 ft); minimum daily, 0.8 cfs Dec. 4-7, 1948.

Remarks.--Records excellent. Flow regulated by Surry Mountain Reservoir (see p. 302).

Rating tables, water year 1951-52 (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to Nov. 11

Nov. 12 to Sept. 30

5.2	50	7.0	385	4.4	11	6.0	154
5.5	82	8.0	755	4.7	21	6.5	257
6.0	152	8.2	830	5.0	38	7.0	402
6.5	249			5.5	84	8.1	795

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	210	151	252	628	94	396	764	248	40	25	13
2	78	183	151	311	613	88	451	725	243	39	22	85
3	*75	108	148	178	490	89	590	679	590	35	19	187
4	70	131	141	377	298	89	540	613	579	28	18	182
5	67	506	182	347	315	90	312	510	544	20	14	123
6	61	759	*315	211	386	90	77	371	575	16	14	33
7	64	458	393	218	350	96	414	156	567	16	18	29
8	349	330	444	*193	247	168	*560	140	536	16	20	26
9	414	552	431	154	237	144	628	126	349	16	17	24
10	189	771	394	148	211	154	643	113	164	21	16	*20
11	380	830	150	149	199	147	617	109	116	52	17	18
12	50	784	175	141	184	334	658	228	99	52	26	17
13	205	665	321	136	132	335	714	248	159	50	37	16
14	509	661	226	136	109	292	516	*310	117	30	23	16
15	108	658	136	143	110	230	606	252	50	23	16	16
16	260	658	119	197	130	193	*722	230	67	17	17	17
17	484	647	104	234	143	178	756	197	71	17	23	16
18	460	636	91	250	117	*166	686	187	65	17	43	15
19	378	555	95	298	109	168	694	164	47	17	25	20
20	162	143	106	312	151	166	639	148	34	16	20	48
21	142	137	161	332	157	148	609	199	34	16	20	45
22	133	284	292	292	141	209	617	223	34	16	19	42
23	126	234	326	312	132	242	647	195	34	16	15	39
24	123	199	318	371	108	254	839	75	34	16	15	38
25	268	214	268	326	99	247	647	260	41	14	15	34
26	301	216	230	285	112	279	732	146	*78	11	15	30
27	245	211	185	126	119	402	722	115	56	14	15	27
28	210	146	140	304	104	454	760	151	40	15	14	24
29	168	148	119	540	105	399	781	360	28	21	14	21
30	170	151	157	613	-	377	787	173	34	*17	13	18
31	342	-	203	628	-	396	-	157	-	13	13	-
Total	6,671	12,185	6,672	8,514	6,236	6,754	18,140	8,328	5,633	707	598	1,239
Mean	215	406	215	275	215	218	605	269	188	22.8	19.3	41.3
Mean	+6.3	+24.4	+9.2	+77.9	-84.7	-29.5	+199.4	-202.2	+38.2	0	-1.9	-37.4

Adjusted for change in reservoir contents

Mean	218	416	219	304	181	207	682	193	202	22.8	18.6	26.9
Cfsm	2.16	4.12	2.17	3.01	1.79	2.05	6.75	1.91	2.00	0.226	0.184	0.266
In.	2.48	4.59	2.50	3.47	1.94	2.36	7.53	2.20	2.24	0.28	0.21	0.30

	Observed						Adjusted					
Calendar year 1951:	Max	928	Min	5.8	Mean	234	Mean	234	Cfsm	2.32	In.	31.45
Water year 1951-52:	Max	830	Min	11	Mean	223	Mean	223	Cfsm	2.21	In.	30.08

\* Discharge measurement made on this day.

† Change in contents in Surry Mountain Reservoir, in millions of cubic feet.

## Otter Brook near Keene, N. H.

Location.--Lat 42°57'55", long. 72°14'00", on left bank 10 ft downstream from bridge near State Highway 9, 3½ miles northeast of Keene, Cheshire County, and 3½ miles upstream from Minnewawa Brook.

Drainage area.--42.3 sq mi.

Records available.--October 1923 to September 1952.

Gage.--Water-stage recorder. Concrete control since Nov. 17, 1936. Datum of gage is 716.11 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--23 years, 71.0 cfs.

Extremes.--Maximum discharge during year, 1,010 cfs Apr. 6 (gage height, 5.41 ft); minimum, 3.6 cfs Aug. 10, 24-27, Aug. 29 to Sept. 1.

1923-52: Maximum discharge, 6,130 cfs Sept. 21, 1938 (gage height, 7.93 ft), from rating curve extended above 1,300 cfs on basis of surface-float measurements and slope-area and contracted-opening determinations at gage heights 7.10 and 7.93 ft; minimum daily, 1.9 cfs Oct. 14, 1929.

Revisions.--The figures of maximum discharge for the water years 1924, 1928, 1930, 1933-44, 1941-42, and 1947, some of which have been revised, superseding those published in the water-supply papers indicated, are contained in the following table:

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
581.....	1924	Apr. 7, 1924	1,940	5.98
661,781.....	1928	Nov. 4, 1907	3,180	6.87
-	1930	Mar. 26, 1930	+600	-
741.....	1933	Apr. 18, 1933	1,560	5.71
756.....	1934	Apr. 12, 1934	3,020	6.77
-	1941	Feb. 10, 1941	+440	-
-	1942	Mar. 9, 1942	+1,040	-
-	1947	Apr. 12, 1947	+700	-

† Not previously published.

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

Revisions (water years).--W 871: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1928, superseding figures published in Water-Supply Paper 661, are given herewith:

Nov. 4, 1927..... 2,150					
Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
November.....	2,150	28	221	5.22	5.83
Water year 1927-28.....	2,150	7.6	102	2.41	32.90

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	80	66	130	130	39	151	133	150	19	4.8	6.3
2	31	75	68	135	130	41	240	115	390	*16	4.0	29
3	28	420	68	125	120	40	265	101	222	14	4.0	14
4	27	425	65	115	124	40	301	89	172	12	3.8	12
5	26	244	105	105	149	41	504	82	227	11	4.0	8.4
6	25	187	*160	98	144	44	825	75	169	9.5	4.8	6.9
7	27	208	149	90	126	44	*465	70	133	8.6	4.8	5.7
8	*175	335	130	80	110	40	360	65	106	7.7	4.2	5.0
9	149	*252	129	78	102	38	315	80	89	6.9	3.8	*4.8
10	101	192	133	76	92	36	325	52	75	8.5	4.5	4.8
11	91	163	112	68	80	68	360	51	63	17	7.7	4.6
12	139	139	99	66	*68	130	310	116	63	11	6.3	4.5
13	112	126	84	63	56	110	252	119	55	8.8	15	4.3
14	95	128	65	58	62	100	330	*106	47	7.7	7.7	4.2
15	80	170	60	74	62	80	335	89	39	6.9	5.4	4.2
16	71	159	59	115	60	70	279	88	34	6.5	5.6	4.3
17	63	163	56	100	62	64	235	80	30	6.3	8.2	4.0
18	60	139	54	150	63	*60	210	82	28	5.9	6.1	3.8
19	56	119	56	135	73	62	189	73	25	5.9	4.8	6.0
20	52	104	60	140	65	63	176	66	22	5.4	4.3	7.1
21	48	91	100	155	60	71	156	99	19	5.1	4.2	5.1
22	46	84	150	145	57	80	135	106	18	5.1	4.0	4.5
23	45	84	125	175	52	69	119	89	16	4.8	3.7	4.5
24	44	110	105	170	50	93	101	73	14	5.7	3.7	4.6
25	134	106	92	150	48	91	102	86	30	4.8	3.6	4.8
26	112	101	82	190	45	110	147	104	22	4.2	3.6	4.6
27	91	91	76	370	43	156	124	88	24	4.5	3.6	4.6
28	93	80	70	325	42	160	175	71	22	4.5	3.7	4.6
29	119	75	74	244	41	142	210	66	25	4.5	3.7	4.1
30	97	70	69	170	-	135	165	78	28	*3.8	3.7	3.6
31	86	-	130	150	-	142	-	75	-	4.0	3.7	-
Total	2,359	4,719	2,846	4,245	2,316	2,479	7,858	2,646	2,354	245.4	155.0	341.0
Mean	76.1	157	91.8	137	79.9	80.0	262	85.4	78.5	7.92	5.00	11.4
Cfs/m	1.80	3.71	2.17	3.24	1.89	1.89	6.19	2.02	1.86	0.187	0.118	0.270
In.	2.07	4.15	2.50	3.73	2.04	2.18	6.91	2.33	2.07	0.22	0.14	0.30

Calendar year 1951: Max 1,960 Min 10 Mean 92.7 Cfs/m 2.19 In. 29.74

Water year 1951-52: Max 825 Min 3.6 Mean 99.0 Cfs/m 2.10 In. 28.64

Peak discharge (base, 600 cfs).--Nov. 3 (6 p.m.) 780 cfs (4.99 ft); Apr. 6 (1 a.m.) 1,010 cfs (5.41 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, 28, Dec. 13 to Jan. 8, Jan. 10-27, Jan. 30 to Feb. 3, Feb. 8-17, Feb. 24 to Mar. 3, Mar. 12-18.



South Branch Ashuelot River at Webb, near Marlboro. N. H.

Location.--Lat 42°52'20", long. 72°12'55", on right bank 15 ft downstream from bridge, 800 ft southwest of Webb station on Boston & Maine Railroad, and 2½ miles south of Marlboro, Cheshire County.

Drainage area.--36.0 sq mi.

Records available.--November 1920 to September 1952.

Gage.--Water-stage recorder. Concrete control since July 18, 1938. Datum of gage is 667.11 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--31 years (1921-52), 59.0 cfs.

Extremes.--Maximum discharge during year, 822 cfs Apr. 5 (gage height, 5.39 ft); maximum gage height, 5.72 ft Dec. 21 (ice jam); minimum discharge, 1.9 cfs Aug. 4; minimum daily, 2.1 cfs Aug. 4.

1920-52: Maximum discharge, 5,960 cfs Sept. 21, 1938 (gage height, 7.89 ft), from rating curve extended above 3,300 cfs on basis of contracted-opening and slope-area determinations of peak flow; maximum gage height, 9.70 ft Mar. 12, 1936 (ice jam); practically no flow Mar. 22, 1931; minimum daily discharge, 0.4 cfs Sept. 15-17, 1926.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
521, 541....	1921	Dec. 5, 1920	1,240	5.0
541.....	1922	June 21, 1922	1,160	4.9
561, 581....	1923	Apr. 29, 1923	1,400	5.20
581.....	1924	Apr. 7, 1924	1,220	4.98
621.....	1926	Apr. 25, 1926	630	4.02
741.....	1933	Apr. 18, 1933	879	5.10
756.....	1934	Apr. 12, 1934	1,300	5.68
-	1941	Feb. 9 or 10, 1941	†370	-

† Not previously published.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplant and several small reservoirs above station.

Revisions (water years).--W 641: 1925(M). W 871: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1929 and 1939, superseding those published in Water-Supply Papers 681 and 871, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1928		1929		1929		1938	
Dec. 10.....	26	Jan. 7.....	46	Feb. 6.....	18	Oct. 6.....	66
11.....	24	8.....	40	7.....	40	7.....	65
12.....	17	9.....	44	8.....	60	8.....	52
13.....	16	10.....	35	9.....	55	11.....	52
14.....	14	11.....	25	10.....	50	21.....	92
15.....	8	12.....	28	11.....	40	22.....	83
16.....	10	13.....	30	12.....	32	24.....	95
17.....	12	14.....	20	13.....	26	26.....	109
18.....	24	15.....	26	14.....	28	27.....	80
19.....	21	16.....	22	15.....	18	28.....	72
20.....	17	17.....	28	16.....	14	29.....	52
21.....	16	18.....	46	17.....	5		
22.....	12	19.....	90	18.....	7		
23.....	21	20.....	60	19.....	10	1939	
24.....	29	21.....	63	20.....	8	May 1.....	94
25.....	22	22.....	54	21.....	8	2.....	81
26.....	23	23.....	44	22.....	8	3.....	77
27.....	25	24.....	38	23.....	5	4.....	72
28.....	28	25.....	33	24.....	3	5.....	72
29.....	25	26.....	23	25.....	8	6.....	61
30.....	13	27.....	12	26.....	7	8.....	64
31.....	20	28.....	19	27.....	6	9.....	59
		29.....	22	28.....	11	10.....	67
		30.....	20	29.....	30	11.....	59
1929		31.....	22			12.....	54
Jan. 1.....	14	Feb. 1.....	18	1938		23.....	64
2.....	17	2.....	17	Oct. 1.....	75	24.....	80
3.....	20	3.....	13	2.....	57	25.....	58
4.....	20	4.....	9	3.....	67	26.....	52
5.....	11	5.....	15	4.....	58	29.....	56
6.....	36	6.....	19	5.....	54		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1928.....	-	58	8	26.9	0.747	0.86
January 1929.....	-	90	11	35.0	.917	1.06
February.....	-	60	3	20.0	.556	.58
Water year 1928-29.....	-	792	1.0	71.1	1.98	26.79
October 1938.....	1,878	208	29	60.6	1.68	1.94
May.....	1,606	94	22	51.8	1.44	1.66
Calendar year 1938.....	33,533.7	3,070	3.0	91.9	2.55	34.63
Water year 1938-39.....	23,656.2	520	2.2	64.8	1.80	24.42
Calendar year 1939.....	18,213.5	421	2.2	49.9	1.39	18.81

## CONNECTICUT RIVER BASIN

Ashuelot River at Hinsdale, N. H.

Location.--Lat 42°47'05", long. 72°29'10", on left bank 40 ft upstream from highway bridge at Hinsdale, Cheshire County, a quarter of a mile downstream from dam, and  $1\frac{1}{4}$  miles upstream from mouth.

Drainage area.--420 sq mi.

Records available.--March 1907 to December 1911, July 1914 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 201.32 ft above mean sea level (levels by Corps of Engineers). Prior to Sept. 29, 1933, chain gage on highway bridge at same datum.

Average discharge.--42 years, 654 cfs.

Extremes.--Maximum discharge during year, 4,350 cfs Apr. 6 (gage height, 7.26 ft); minimum, 38 cfs July 10; minimum daily, 74 cfs Aug. 30.  
1907-11, 1914-52: Maximum discharge, 18,000 cfs Mar. 29, 1920 (gage height, 9.98 ft), from rating curve extended above 8,000 cfs; maximum gage height, 20.2 ft Mar. 19, 1936, from floodmarks (backwater from Connecticut River); minimum discharge observed, 11 cfs Aug. 12, 1923; minimum daily, 12 cfs Sept. 15, 1929.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by mills above station. High flow affected by Surry Mountain Reservoir since 1942 (see p. 302).

Revisions (water years).--W 661: Drainage area. W 756: 1920(M). W 781: 1907-11 calendar years, 1914-34.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.0	66	5.0	1,050
3.3	125	6.0	2,080
3.6	207	7.0	3,820
4.0	377	7.2	4,220
4.5	685		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	304	869	730	1,110	1,520	470	1,580	1,730	1,350	286	91	83
2	278	806	711	1,210	1,620	421	2,070	1,550	3,050	232	89	181
3	266	2,000	692	1,270	1,560	462	2,570	1,430	2,740	204	86	318
4	*258	3,550	718	1,180	1,520	486	2,800	1,320	2,110	180	*89	362
5	250	2,980	799	1,190	1,600	486	3,050	1,200	1,890	169	85	322
6	242	2,140	1,160	1,080	1,730	555	4,160	1,130	1,820	145	99	262
7	232	2,050	*1,340	962	1,600	588	3,880	1,030	1,550	125	116	150
8	915	2,550	1,290	900	1,300	574	*2,940	820	1,310	121	145	123
9	1,400	2,470	1,240	840	1,200	600	2,550	737	1,190	125	138	105
10	1,180	2,080	1,260	790	1,050	542	2,330	659	994	*170	107	105
11	848	1,840	1,180	750	960	713	2,260	594	792	416	116	121
12	1,080	1,740	930	720	900	1,380	2,180	1,240	764	404	142	*103
13	962	1,600	890	685	680	1,640	2,000	1,440	750	262	250	99
14	890	1,460	810	672	700	1,450	2,020	1,260	698	205	357	83
15	962	1,580	680	*724	680	1,190	2,390	1,110	505	168	250	95
16	666	1,700	620	938	670	1,030	2,260	1,010	395	145	177	87
17	724	1,730	580	1,060	660	914	2,010	898	421	133	162	91
18	869	1,650	560	1,150	640	876	1,840	806	416	121	150	87
19	848	*1,470	590	1,310	724	922	1,750	*799	582	118	135	95
20	744	1,260	640	1,280	*737	906	1,670	744	352	110	138	155
21	524	914	800	1,450	764	*970	1,600	820	300	109	116	130
22	456	841	1,150	1,330	737	1,030	1,580	1,020	224	103	123	142
23	438	876	1,300	1,420	680	1,090	1,550	978	221	103	101	130
24	432	922	1,250	1,560	620	1,200	1,480	799	214	99	95	138
25	793	946	1,150	1,350	580	1,210	1,450	750	246	105	103	145
26	1,200	930	1,000	1,340	560	1,270	1,610	978	291	99	91	130
27	1,060	954	900	2,120	560	1,620	1,670	922	282	95	91	125
28	876	806	780	2,820	560	1,910	1,760	757	254	97	87	138
29	906	764	750	2,570	520	1,840	2,290	771	228	91	89	155
30	898	730	740	1,880	-	1,610	2,000	914	300	91	74	150
31	813	-	900	1,570	-	1,550	-	806	-	89	78	-
Total	22,314	46,208	28,140	39,231	27,632	31,505	65,280	31,022	26,038	4,920	3,970	4,390
Mean	720	1,540	908	1,266	953	1,016	2,176	1,001	868	159	128	146
In.	1.98	4.12	2.50	3.55	2.36	2.76	5.98	2.54	2.34	0.44	0.35	0.35

Adjusted for change in reservoir contents

Mean	722	1,550	911	1,295	919	1,005	2,253	925	883	159	127	132
Cfsm	1.72	3.69	2.17	3.08	2.19	2.39	5.36	2.20	2.10	0.379	0.302	0.314
In.	1.98	4.12	2.50	3.55	2.36	2.76	5.98	2.54	2.34	0.44	0.35	0.35

Observed

Adjusted

Calendar year 1951:	Max	5,260	Min	155	Mean	912	Mean	912	Cfsm	2.17	In.	29.51
Water year 1951-52:	Max	4,160	Min	74	Mean	903	Mean	903	Cfsm	2.15	In.	29.27

Peak discharge (base, 3,000 cfs).--Nov. 4 (6 to 8 p.m.), 3,690 cfs (6.93 ft); Apr. 6 (8 to 10 p.m.), 4,350 cfs (7.26 ft); June 2 (8:30 a.m.), 3,270 cfs (6.71 ft).

\* Discharge measurement made on this day.

† Change in contents in Surry Mountain Reservoir, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Dec. 14-31, Jan. 8-12, Feb. 8-17, Feb. 23 to Mar. 1.

South Branch Ashuelot River at Webb, near Marlboro, N. H.--Continued

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 10

July 11 to Sept. 30

2.0	8.6	4.1	149
2.5	24	4.5	300
3.0	42	5.0	555
3.5	61	5.5	920
3.8	86		

1.6	1.0	2.1	10
1.7	2.2	2.5	23
1.8	3.6	3.0	42

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	65	54	115	120	43	150	a100	211	32	4.7	4.2
2	13	67	56	120	114	40	305	a84	521	24	4.0	4.2
3	12	443	60	105	112	42	300	a74	222	22	2.3	31
4	13	466	52	95	116	48	315	a66	143	12	2.1	21
5	13	222	89	86	174	47	475	a62	225	9.4	4.7	14
6	16	144	156	80	158	46	643	a58	118	9.4	6.8	9.4
7	13	188	*125	*74	118	48	395	a56	88	14	8.2	5.9
8	*198	360	88	68	94	48	*286	a52	71	15	7.3	5.3
9	120	201	94	64	92	41	239	a45	68	*15	5.7	*5.7
10	57	125	112	62	80	44	223	39	57	16	4.2	5.3
11	52	105	82	56	*70	106	235	37	53	54	6.6	4.7
12	139	98	66	54	64	223	190	172	60	26	10	4.7
13	93	89	56	52	52	185	155	*134	57	15	93	4.2
14	50	*104	49	50	56	118	221	91	37	12	48	2.7
15	50	187	45	57	60	85	251	71	27	10	21	2.4
16	52	144	43	105	56	75	180	80	27	9.0	14	2.3
17	46	148	42	90	52	70	138	56	25	8.2	12	2.4
18	29	112	41	130	58	*69	122	60	21	7.5	12	3.4
19	39	95	43	115	68	75	98	64	22	6.7	9.4	8.7
20	28	71	47	125	60	72	98	63	18	3.8	7.5	32
21	20	66	85	140	54	87	98	91	18	4.0	6.4	19
22	26	62	150	130	52	94	92	118	13	5.9	6.2	13
23	31	75	105	160	50	101	86	85	13	5.9	5.3	18
24	39	79	80	150	47	107	77	58	13	6.6	3.3	17
25	214	82	70	130	51	100	85	66	28	5.9	3.1	12
26	129	80	62	170	48	135	133	105	27	4.7	4.3	16
27	71	73	59	360	45	201	107	72	19	2.9	4.6	12
28	62	62	56	300	45	190	156	61	16	3.2	4.6	9.4
29	100	58	55	210	44	136	190	60	31	4.9	4.7	7.3
30	74	52	54	150	-	125	a130	87	50	*4.7	4.3	7.7
31	58	-	105	130	-	136	-	70	-	4.7	2.4	-
Total	1,874	4,123	2,280	3,733	2,210	2,917	6,173	2,337	2,299	374.4	332.7	342.7
Mean	60.5	137	73.5	120	76.2	94.1	206	75.4	76.6	12.1	10.7	11.4
Cfsm	1.68	3.81	2.04	3.33	2.12	2.61	5.72	2.09	2.13	0.336	0.297	0.317
In.	1.94	4.26	2.36	3.66	2.28	3.01	6.38	2.41	2.37	0.39	0.34	0.35

Calendar year 1951: Max 874 Min 9.1 Mean 79.3 Cfsm 2.20 In. 29.92

Water year 1951-52: Max 643 Min 2.1 Mean 79.2 Cfsm 2.20 In. 29.95

Peak discharge (base, 550 cfs).--Nov. 3 (7 p.m.) 790 cfs (5.35 ft); Apr. 5 (12 p.m.) 822 cfs (5.39 ft); June 2 (1 a.m.) 694 cfs (5.22 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Otter Brook near Keene and Moss Brook at Wendell Depot, Mass.

Note.--Stage-discharge relation affected by ice Nov. 27-30, Dec. 14 to Feb. 1, Feb. 8, 10-16, Feb. 18 to Mar. 3, Mar. 13, 15, 16.

## Tarbell Brook near Winchendon, Mass.

Location.--Lat 42°42'45", long. 72°05'09", on left bank 0.1 mile downstream from Spud Brook, 0.3 mile downstream from Massachusetts-New Hampshire State line, and 2½ miles northwest of Winchendon, Worcester County.

Drainage area.--18.2 sq mi.

Records available.--May 1916 to September 1952. Prior to October 1950, published as Sip Pond Brook near Winchendon.

Gage.--Water-stage recorder. Datum of gage is 872.82 ft above mean sea level, datum of 1929. May 29 to June 29, 1916, staff gage, June 30 to Dec. 12, 1916, water-stage recorder, and Dec. 13, 1916, to June 26, 1917, staff gage, at site 450 ft downstream at same datum.

Average discharge.--36 years, 30.0 cfs.

Extremes.--Maximum discharge during year, 297 cfs Apr. 6 (gage height, 9.06 ft); minimum, 1.7 cfs Sept. 25, 26.

1916-52: Maximum discharge, 2,630 cfs Sept. 21, 1938 (gage height, 13.72 ft), from rating curve extended above 1,200 cfs on basis of critical-depth study at control section; minimum, 0.1 cfs Aug. 25, 1924.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Pearly and Sip Ponds, Damon Reservoirs, and small mill above station.

Revisions (water years).--W 781: 1934. W 871: Drainage area. W 1051: 1928(M), 1933, 1934.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

5.0	1.6	6.5	45
5.3	5.8	7.0	72
5.6	12	8.0	157
6.0	24	9.0	287

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	41	29	48	a84	16	67	54	48	5.8	2.5	5.6
2	*8.9	42	31	53	a72	17	99	*47	85	4.1	2.2	12
3	7.2	87	33	58	a60	22	128	38	86	6.3	3.8	8.2
4	5.2	204	31	56	a61	22	150	36	*68	3.9	3.8	5.6
5	3.9	179	32	51	65	20	178	34	56	4.1	2.7	2.7
6	3.8	123	46	52	68	24	274	28	56	3.7	3.7	2.7
7	4.7	103	59	50	66	24	262	24	48	*5.3	4.2	2.8
8	23	137	56	46	59	18	199	24	40	3.8	3.7	5.3
9	31	154	54	41	54	17	153	22	33	5.4	2.2	3.4
10	34	104	58	37	48	28	125	17	27	6.6	2.8	4.5
11	27	85	56	34	48	34	114	17	24	9.2	6.2	3.1
12	48	72	48	31	45	45	105	38	23	7.4	4.6	3.1
13	48	*54	*40	33	*43	52	92	48	18	6.4	13	3.1
14	45	*54	34	32	35	52	90	44	13	9.2	7.4	3.0
15	37	67	30	31	32	50	124	39	9.2	6.4	*16	4.3
16	27	75	34	36	24	48	115	39	16	5.3	7.8	2.5
17	27	92	33	*40	27	46	92	33	14	5.2	9.4	3.5
18	25	82	30	52	29	40	77	33	14	4.5	15	3.3
19	24	67	30	57	40	37	69	35	14	5.1	8.2	4.8
20	16	54	29	62	36	37	60	30	8.5	4.4	6.8	3.9
21	16	49	38	76	33	42	55	32	5.6	6.7	5.8	3.5
22	22	40	55	69	29	*44	41	35	5.0	4.2	4.3	6.3
23	20	42	58	79	20	45	42	35	10	5.9	3.7	2.8
24	20	43	58	83	22	50	37	27	5.6	5.4	3.3	4.2
25	36	48	54	75	31	49	39	34	6.3	5.0	5.6	4.1
26	56	50	53	80	27	53	54	48	4.5	3.7	3.5	1.9
27	50	49	136	25	65	42	59	42	4.5	3.8	4.6	*2.2
28	48	44	47	174	23	72	61	33	4.2	7.3	4.7	5.4
29	52	58	40	153	21	73	70	31	4.8	5.3	3.0	6.2
30	43	35	39	a120	-	70	65	40	7.2	4.5	3.8	3.0
31	44	-	46	a105	-	67	-	43	-	5.2	2.1	-
Total	862.2	2,294	1,331	2,050	1,227	1,277	3,096	1,078	758.4	169.1	172.4	125.0
Mean	27.8	76.5	42.9	66.1	42.3	41.2	103	34.8	25.3	5.45	5.56	4.17
Cfsm	1.53	4.20	2.36	3.63	2.32	2.26	5.66	1.91	1.39	0.299	0.305	0.229
In.	1.76	4.69	2.72	4.19	2.51	2.61	6.33	2.20	1.55	0.35	0.35	0.26

Calendar year 1951: Max 278 Min 3.8 Mean 41.1 Cfsm 2.26 In. 30.65  
Water year 1951-52: Max 274 Min 1.9 Mean 39.5 Cfsm 2.17 In. 29.52

Peak discharge (base, 150 cfs).--Nov. 4 (3 to 5 p.m.) 216 cfs (8.49 ft); Jan. 28 (12 m.) 180 cfs (8.20 ft); Apr. 6 (6 to 8 p.m.) 297 cfs (9.06 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Priest Brook near Winchendon and Ware River near Barre.

Note.--Stage-discharge relation affected by ice Dec. 19, 20, 27, 28, Jan. 5, 7-9, 11, 12, 22, 25, 29, Feb. 12-14, 18, Feb. 24 to Mar. 5, Mar. 15, 16, and during parts of period of no gage-height record.

## Millers River near Winchendon, Mass.

Location.--Lat 42°41'03", long. 72°05'02", on right bank 10 ft downstream from Nolan Bridge, a third of a mile downstream from Tarbell Brook, and 2 miles west of Winchendon, Worcester County.

Drainage area.--83.0 sq mi.

Records available.--June 1916 to September 1952.

Gage.--Water-stage recorder. Concrete control since Oct. 6, 1933. Datum of gage is 826.66 ft above mean sea level, datum of 1929. Prior to July 27, 1916, chain gage at bridge at same datum.

Average discharge.--35 years (1917-52), 141 cfs.

Extremes.--Maximum discharge during year, about 1,000 cfs Apr. 6; minimum daily, 7.6 cfs Aug. 2.

1916-52: Maximum discharge, 8,500 cfs Sept. 22, 1938 (gage height, 21.55 ft, from floodmarks), by computation of peak flow over dam; practically no flow because of regulation Sept. 20, 1918, Jan. 14, 1925.

Remarks.--Records excellent except those for periods of backwater from moss, which are good, and those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplant and by Lake Monomonic and other reservoirs.

Revisions (water years).--W 451: 1916. W 871: Drainage area. W 1051: 1919, 1920(M), 1921(M), 1922-24, 1928(M), 1933, 1934.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

3.9	28	5.0	281	3.6	6.7	4.5	137
4.1	53	6.0	492	3.7	12	5.0	311
4.3	90	7.0	750	3.8	19	6.0	524
4.5	137			4.0	39	7.0	780
				4.2	70		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	159	123	230	b440	36	360	370	216	59	8.0	17
2	*46	156	65	270	377	38	410	310	438	53	7.6	117
3	58	338	148	300	346	87	480	256	462	26	8.0	123
4	102	644	142	290	346	113	520	243	452	20	9.3	106
5	110	660	149	270	383	72	640	215	324	19	11	60
6	96	461	202	260	392	96	750	192	292	14	12	15
7	67	410	256	250	366	137	680	146	255	*15	20	12
8	195	490	298	240	325	144	630	123	223	12	28	14
9	205	*520	301	260	308	154	580	69	190	14	16	12
10	192	466	316	220	284	167	540	42	169	21	20	14
11	182	400	288	200	253	203	510	98	165	60	28	40
12	241	339	260	175	b250	294	470	168	127	58	30	14
13	222	253	*204	150	b245	320	440	176	69	53	257	11
14	200	272	b150	120	*b240	316	440	174	34	52	*184	10
15	175	371	b125	140	b210	285	460	158	25	28	143	13
16	138	368	110	*155	b155	260	450	151	47	26	49	10
17	152	426	80	b165	104	240	420	135	35	25	137	10
18	124	366	105	b190	80	225	380	130	27	22	140	9.5
19	83	337	90	206	120	215	340	102	27	22	100	17
20	122	286	190	227	124	*220	300	138	41	19	70	23
21	110	245	290	b260	104	227	255	135	22	20	79	36
22	85	157	380	b350	123	233	220	*130	20	16	16	72
23	116	118	370	b380	46	247	200	155	22	17	14	55
24	70	155	360	b400	66	255	190	141	16	16	39	15
25	138	145	320	406	136	258	*190	149	17	15	21	13
26	201	159	290	438	125	291	201	167	15	14	13	10
27	184	199	260	682	77	368	186	161	15	13	14	*10
28	178	b175	240	731	91	360	219	144	14	15	13	11
29	191	149	220	660	113	345	374	153	17	9.6	12	15
30	165	b150	200	587	-	330	409	169	47	7.6	13	14
31	104	-	210	b520	-	320	-	169	-	9.5	10	-
Total	4,287	9,404	6,742	9,732	6,229	6,864	12,244	5,069	3,803	770.9	1,521.9	900.5
Mean	138	313	217	314	215	221	408	164	127	24.9	49.1	30.0
Cfsm	1.66	3.77	2.61	3.78	2.59	2.66	4.92	1.98	1.53	0.300	0.592	0.361
In.	1.92	4.21	3.02	4.36	2.79	3.08	5.49	2.27	1.70	0.35	0.68	0.40
Calendar year 1951: Max	953			Min	16	Mean	192	Cfsm	2.31	In.	31.36	
Water year 1951-52: Max	750			Min	7.6	Mean	185	Cfsm	2.23	In.	30.27	

Peak discharge (base, 690 cfs).--Nov. 4 (9 p.m.) 737 cfs (6.96 ft); Jan. 27 (2 p.m.) 785 cfs (7.10 ft); Apr. 6 (time unknown) about 1,000 cfs.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 16 to Jan. 16, Mar. 15-20, Mar. 28 to Apr. 25; discharge estimated on basis of 3 discharge measurements, weather records, powerplant records, recorded range in stage when available, and records for Millers River at South Royalston, Priest Brook near Winchendon, and Tarbell Brook near Winchendon. Backwater from moss June 21-29, July 3-10, July 15 to Aug. 12, Aug. 16, Aug. 22 to Sept. 1, Sept. 5-21, 23-27. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Priest Brook near Winchendon, Mass.

Location.--Lat 42°40'57", long. 72°06'56", on right bank 100 ft downstream from highway bridge, 3 miles upstream from mouth, and 3½ miles west of Winchendon, Worcester County.

Drainage area.--19.4 sq mi.

Records available.--May 1916 to September 1952.

Gage.--Water-stage recorder. Concrete control since September 1936. Datum of gage is 849.67 ft above mean sea level, datum of 1929. Prior to Mar. 22, 1933, staff gage and Mar. 22, 1933, to Sept. 11, 1936, float gage, on left bank at same datum.

Average discharge.--34 years (1918-52), 33.1 cfs.

Extremes.--Maximum discharge during year, 389 cfs Apr. 6 (gage height, 5.08 ft), from rating curve extended above 170 cfs on basis of contracted-opening determinations at gage heights 8.4 and 9.90 ft; minimum, 0.8 cfs Aug. 26.  
1916-52: Maximum discharge, 3,000 cfs Sept. 21, 1938 (gage height, 9.90 ft), from rating curve extended above 230 cfs by method described above; minimum, 0.08 cfs several times in September 1929.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by ponds and mill above station.

Revisions (water years).--W 451: 1916. W 871: Drainage area. W 1051: 1919, 1922-24.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	0.9	2.7	15
2.3	2.2	3.0	34
2.4	4.0	3.5	85
2.5	6.7	4.0	164
2.6	10	5.0	370

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.7	44	33	67	a90	22	85	66	54	5.6	2.5	4.0
2	*16	47	27	73	a82	17	124	54	133	4.0	2.0	1.5
3	12	117	30	62	a76	19	153	39	138	3.4	1.9	10
4	14	260	36	65	a78	26	168	35	35	3.7	1.9	16
5	13	218	45	62	a84	30	201	33	80	5.6	2.4	6.4
6	5.0	151	58	60	a86	28	356	34	75	4.3	3.6	12
7	5.1	118	59	50	a78	32	293	39	70	*3.3	3.8	5.6
8	41	138	68	38	a66	28	205	30	58	2.7	2.9	3.0
9	46	143	70	39	a60	23	155	19	48	2.5	2.3	1.6
10	29	123	74	39	a52	24	126	18	34	7.2	2.5	1.4
11	25	94	56	39	a44	32	102	18	28	29	3.8	1.2
12	56	78	*49	35	a37	54	101	47	24	18	3.6	*1.5
13	54	*64	45	28	*a32	72	93	66	22	11	37	2.0
14	40	47	35	*30	28	71	108	60	20	8.5	*30	2.1
15	32	71	33	37	26	64	131	54	14	7.0	21	1.9
16	31	88	30	46	24	56	110	52	12	6.1	16	2.3
17	33	106	29	40	23	50	93	46	11	5.0	10	7.2
18	22	94	32	54	23	47	80	40	10	4.5	8.1	3.9
19	23	81	32	70	26	44	55	41	9.7	4.0	12	7.4
20	20	68	29	73	28	*42	47	37	9.3	3.8	11	22
21	14	55	48	92	29	a44	40	41	8.9	3.6	10	12
22	14	46	73	84	28	a46	39	*48	8.1	8.2	13	8.0
23	20	43	73	89	26	50	37	47	8.6	4.3	12	18
24	22	48	77	85	25	59	34	40	14	8.8	3.9	20
25	56	53	74	84	23	58	*32	36	6.9	7.5	1.6	7.7
26	59	53	66	85	24	68	50	52	4.8	3.9	5.7	4.3
27	46	53	52	192	26	83	54	56	3.8	2.9	7.5	3.2
28	48	46	50	232	26	98	64	44	3.4	2.5	5.4	2.3
29	56	43	47	207	24	95	97	41	4.3	2.1	12	1.9
30	56	38	41	a160	-	88	85	51	6.4	7.7	3.8	1.6
31	48	-	49	a120	-	86	-	43	-	4.4	3.0	-
Total	962.8	2,628	1,520	2,449	1,272	1,556	3,316	1,327	1,014.4	195.3	254.2	205.5
Mean	31.1	87.6	49.0	79.0	43.9	50.2	111	42.8	33.8	6.30	8.20	6.85
Cfsm	1.60	4.52	2.53	4.07	2.26	2.59	5.72	2.21	1.74	0.325	0.423	0.353
In.	1.85	5.04	2.91	4.69	2.44	2.98	6.36	2.54	1.94	0.37	0.49	0.39

Calendar year 1951: Max 352 Min 4.3 Mean 46.7 Cfsm 2.41 In. 32.70  
Water year 1951-52: Max 356 Min 1.2 Mean 45.6 Cfsm 2.35 In. 32.00

Peak discharge (base, 150 cfs).--Nov. 4 (1:30 to 3 p.m.) 293 cfs (4.66 ft); Jan. 28 (2 to 2:30 p.m.) 246 cfs (4.43 ft); Apr. 6 (5:30 to 6:30 a.m.) 389 cfs (5.08 ft); June 2-3 (8 p.m. to 1 a.m.) 153 cfs (3.94 ft).

\* Discharge measurement made on this day.

No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for Tarbell Brook near Winchendon and Ware River near Barre.

Note.--Stage-discharge relation affected by ice Nov. 21, 22, Nov. 27 to Dec. 1, Dec. 3, 4, 13-20, 27-29, Jan. 5-12, 21, 22, 25, Feb. 14-18, Feb. 24 to Mar. 4, Mar. 12-18, 25-30, and at times during periods of no gage-height record. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## Millers River at South Royalston, Mass.

Location.--Lat 42°37'47", long. 72°09'03", on right bank 500 ft downstream from bridge in South Royalston, Worcester County, 0.4 mile downstream from Beaver Brook, and 1.7 miles downstream from Birch Hill Dam.

Drainage area.--187 sq mi.

Records available.--July 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 792.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--13 years, 304 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,450 cfs Apr. 6 (gage height, 6.74 ft); maximum gage height, 6.94 ft Dec. 20, 21 (backwater from ice); minimum daily discharge, 17 cfs Aug. 16.

1939-52: Maximum discharge, 4,400 cfs Apr. 13, 1940 (gage height, 8.40 ft); minimum daily, 16 cfs Sept. 25, 1939.

Maximum stage known, 15.9 ft, from floodmarks, Sept. 21 or 22, 1938.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Lake Monomonic and other reservoirs, by mills and powerplants, and at high flow by Birch Hill Reservoir since 1941 (see p. 302).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20

Dec. 21 to Sept. 30

4.0	61	5.5	550	3.4	16	4.5	163
4.2	93	6.0	845	3.6	26	5.0	333
4.6	178	6.5	1,220	3.8	42	6.0	860
5.0	315			4.1	79	7.0	1,740

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67	338	338	525	1,040	210	758	752	413	115	45	80
2	95	369	243	608	945	185	854	664	716	105	*48	240
3	102	569	287	652	848	195	1,020	540	830	86	50	300
4	147	988	320	680	794	265	1,100	470	824	64	42	280
5	*161	1,130	360	610	812	210	1,170	425	752	106	43	180
6	145	1,130	480	580	836	236	1,320	380	625	89	62	120
7	132	1,070	583	540	818	309	1,240	350	520	68	78	80
8	312	1,080	611	500	752	309	1,270	309	435	59	81	60
9	460	1,060	823	520	698	315	*1,260	216	367	51	70	54
10	414	1,030	*659	470	630	321	1,220	183	317	62	62	52
11	342	959	635	425	581	397	1,160	197	286	192	79	50
12	441	864	566	375	484	647	1,070	416	256	203	82	60
13	475	737	485	330	450	734	995	505	163	146	355	45
14	418	600	364	274	480	758	946	475	140	123	455	40
15	360	665	279	341	425	669	967	406	106	86	252	45
16	287	*731	260	425	350	614	967	380	102	70	17	42
17	271	791	240	*445	290	*570	925	346	114	60	397	44
18	243	803	270	535	195	515	842	333	98	54	432	45
19	173	767	280	625	300	485	758	293	93	51	297	67
20	210	677	450	620	340	480	664	321	96	49	220	129
21	192	566	660	710	*289	500	581	354	92	47	170	136
22	147	450	800	770	329	530	510	*388	73	48	120	143
23	201	546	850	800	245	585	455	420	*70	48	80	142
24	148	396	812	850	220	630	440	371	73	47	80	111
25	338	432	752	810	265	636	388	346	76	48	75	78
26	510	396	674	860	300	674	480	430	68	44	72	63
27	470	470	610	1,100	255	806	530	430	66	41	66	58
28	410	385	540	1,240	240	880	565	375	58	53	64	56
29	446	395	480	1,300	286	860	710	329	51	62	51	51
30	400	360	430	1,210	-	812	782	367	93	41	52	53
31	311	-	480	1,140	-	776	-	354	-	42	43	-
Total	8,828	20,554	15,401	20,900	14,498	16,091	25,947	12,125	7,980	2,349	4,051	2,884
Mean	285	685	497	674	500	519	865	391	266	75.8	131	96.1
(f)	+3.2	+0.2	+2.3	+60.0	-63.6	+10.8	+5.1	-14.2	-2.5	-1.3	0	0

Adjusted for change in reservoir contents

	Mean	Cfsm	In.	Mean	Cfsm	In.	Mean	Cfsm	In.	Mean	Cfsm	In.
Observed	286	685	498	697	475	523	867	386	265	75.3	131	96.1
Adjusted	1.53	3.66	2.66	3.73	2.54	2.80	4.64	2.06	1.42	0.403	0.701	0.514
	1.76	4.09	3.07	4.29	2.74	3.22	5.17	2.38	1.58	0.46	0.81	0.57
Calendar year 1951:	Max	1,520	Min	67	Mean	421	Mean	421	Cfsm	2.25	In.	30.59
Water year 1951-52:	Max	1,320	Min	17	Mean	414	Mean	414	Cfsm	2.21	In.	30.14

\* Discharge measurement made on this day.

† Change in contents in Birch Hill Reservoir, in millions of cubic feet.

Note.--No gage-height record Aug. 20 to Sept. 16; discharge estimated on basis of weather records, records for other stations in Millers River basin, and records for Birch Hill Reservoir. Stage-discharge relation affected by ice Nov. 28-30, Dec. 16-23, 27-30, Jan. 4-13, 17, 24, 25, 29-31, Feb. 13-20, 23-28, Mar. 1-4. Discharge in cubic feet per second per square mile and runoff in inches may not represent natural flow because of regulation.

## East Branch Tully River near Athol, Mass.

Location.--Lat 42°38'32", long. 72°13'34", on right bank 300 ft downstream from Tully Dam, 1.3 miles downstream from Lawrence Brook, and 3½ miles north of Athol, Worcester County.

Drainage area.--50.4 sq mi.

Records available.--June 1916 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 613.71 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Oct. 26, 1948, staff gage at site 0.2 mile upstream at datum 14.40 ft higher.

Average discharge.--36 years, 84.1 cfs.

Extremes.--Maximum discharge during year, 475 cfs Apr. 7, 8 (gage height, 4.60 ft); minimum, 0.1 cfs Aug. 1, 2; minimum daily, 0.4 cfs Aug. 16.

1916-52: Maximum discharge, 5,140 cfs Sept. 21, 1938 (gage height, 8.60 ft, from floodmarks, site and datum then in use), from rating curve extended above 1,500 cfs on basis of determination of peak flow by computation of flow over dam and contracted-opening determination; minimum, 0.03 cfs Jan. 4, Mar. 3, 1949; minimum daily, 0.3 cfs Jan. 3, 1949.

Remarks.--Records excellent except those above 500 cfs and those for period of no gage-height record, which are good. Flow regulated by Tully Reservoir since November 1948 (see p. 302).

Revisions (water years).--W 451: 1916. W 781: 1928(M). W 891: Drainage area. W 1051: 1916(M), 1928.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.36	0.4	2.9	29
2.4	.9	3.1	55
2.5	2.8	3.5	119
2.6	6.5	4.0	248
2.7	12	4.6	475

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	111	104	102	269	59	211	170	130	26	2.6	5.7
2	17	117	97	119	269	59	248	134	246	18	*2.4	49
3	17	175	95	121	269	49	294	113	297	14	3.4	61
4	16	307	82	126	263	42	338	98	297	15	3.1	40
5	*16	357	78	157	255	44	373	89	278	27	3.1	a27
6	15	353	80	170	241	45	448	81	254	21	5.2	a20
7	16	331	82	165	254	48	475	80	225	15	7.4	a15
8	87	328	86	158	245	60	466	74	160	12	7.4	a11
9	146	334	121	153	219	86	*457	66	108	9.9	6.0	a10
10	123	324	*168	143	197	164	452	61	89	15	6.0	a8.0
11	98	300	186	119	191	152	373	58	74	75	8.8	a6.8
12	140	200	202	113	153	170	300	102	75	65	10	a6.0
13	170	130	197	108	80	194	263	153	78	36	91	a5.4
14	148	132	158	84	60	191	245	139	61	25	129	a5.0
15	113	139	143	74	81	155	257	119	48	16	44	a5.6
16	92	*157	137	70	80	130	263	111	40	12	.4	a6.0
17	80	234	96	*62	80	*117	248	*104	33	9.4	95	*4.1
18	69	248	74	80	80	108	225	94	29	7.8	64	3.8
19	61	242	74	121	80	108	181	90	26	7.0	39	14
20	54	216	74	168	78	104	153	82	*24	6.5	26	62
21	47	163	75	170	*80	113	128	92	20	6.0	20	54
22	42	120	80	175	78	121	111	115	17	5.6	16	35
23	40	76	97	194	78	134	102	111	16	4.8	12	27
24	40	78	146	234	78	158	94	94	15	4.4	9.4	23
25	117	81	168	242	75	158	87	89	20	4.1	7.4	20
26	191	100	168	242	75	173	122	117	20	3.8	6.5	16
27	181	149	163	254	74	211	148	119	20	3.8	5.6	14
28	148	160	155	266	66	239	153	98	16	3.8	5.2	12
29	146	133	151	275	61	239	199	89	16	3.8	4.8	9.9
30	141	113	129	275	-	222	202	111	31	3.4	4.4	8.8
31	121	-	82	272	-	211	-	111	-	3.1	4.1	-
Total	2,710	5,308	3,750	5,012	4,129	4,064	7,616	3,164	2,763	479.2	649.2	585.1
Mean	87.4	197	121	162	142	131	254	102	92.1	15.5	20.9	19.1
(f)	+0.3	+18.6	+4.6	+53.4	-60.6	-14.3	-0.5	-1.2	-0.2	-0.2	0	+0.1

Adjusted for change in reservoir contents

Mean	87.5	204	123	182	118	126	254	102	92.0	15.4	20.9	19.5
Cfsm	1.74	4.05	2.44	3.61	2.34	2.50	5.04	2.02	1.83	0.306	0.415	0.387
In.	2.00	4.52	2.81	4.15	2.53	2.88	5.62	2.32	2.04	0.35	0.48	0.345
Observed												
Adjusted												
Calendar year 1951:	Max	584	Min	10	Mean	112	Mean	112	Cfsm	2.22	In.	30.18
Water year 1951-52:	Max	475	Min	0.4	Mean	112	Mean	112	Cfsm	2.22	In.	30.13

\* Discharge measurement made on this day.

† Change in contents in Tully Reservoir, in millions of cubic feet.

‡ No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, records of pond elevations and gate operations at Tully Reservoir, and records for stations on nearby streams.



Moss Brook at Wendell Depot, Mass.

Location.--Lat 42°36'10", long. 72°21'36", on left bank a quarter of a mile upstream from mouth and a quarter of a mile north of Wendell Depot, Franklin County.

Drainage area.--12.3 sq mi.

Records available.--June 1909 to August 1910, June 1916 to September 1952. Published as "at Wendell" 1909-10.

Gage.--Staff gage read twice daily except during period Dec. 16 to Apr. 1, when it was read once daily. Datum of gage is 508.9 ft above mean sea level, datum of 1929. Prior to April 1910, staff gage at site 1,200 ft downstream at different datum. April to August 1910, staff gage and sharp-crested weir at site 300 ft downstream at different datum.

Average discharge.--36 years (1916-52), 21.1 cfs.

Extremes.--Maximum discharge during year, 336 cfs Apr. 6 (gage height, 3.90 ft, from graph based on gage readings); minimum discharge, 1.0 cfs Aug. 30.

1916-52: Maximum discharge, 1,540 cfs Mar. 15, 1936 (gage height, 6.30 ft, from floodmarks), from rating curve extended above 280 cfs on basis of slope-area determinations at gage heights 5.62 and 6.30 ft; minimum, 0.2 cfs Sept. 4, 5, 1929.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)†
451, 1051....	1917	Mar. 28, 1917	255	3.6
471.....	1918	Mar. 24, 1918	113	2.9
501, 1051....	1919	Mar. 28, 1919	365	4.0
501, 1051....	1920	Apr. 14, 1920	268	3.65
521, 1051....	1921	May 1, 1921	195	3.35
541, 1051....	1922	June 22, 1922	350	3.95
561, 1051....	1923	Apr. 29, 1923	335	3.9
581, 1051....	1924	Apr. 7, 1924	365	4.0
601, 1051....	1925	Feb. 13, 1925	170	-
621.....	1926	Apr. 10, 1926	113	2.9
641.....	1927	Mar. 18, 1927	242	3.55
661.....	1928	Nov. 4, 1927	885	5.3
681.....	1929	Mar. 15, 1929	‡255	-
696.....	1930	Mar. 26, 1930	185	3.3
711.....	1931	May 24, 1931	195	3.35
726.....	1932	Apr. 1, 1932	395	4.1
741.....	1933	Apr. 19, 1933	280	3.7
756.....	1934	Apr. 12, 1934	560	4.6
781.....	1935	Jan. 10, 1935	185	3.3
871.....	1939	Dec. 6, 1938	309	3.8
921.....	1941	Dec. 30, 1940	94	2.68
1001.....	1944	Apr. 25, 1944	164	3.15
1141.....	1949	Jan. 6, 1949	155	3.1

† From graph based on gage readings.

‡ Not previously published.

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

Revisions (water years).--W 821: 1936(M). W 891: Drainage area. W 1051: 1917, 1919-24, 1929(M). Revised figures of discharge, in cubic feet per second, for the water years 1922, 1924-26, and 1929, superseding figures published in Water-Supply Papers 541, 581, 601, 621, 681, and 1051, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1922		1925		1929	
Mar. 8.....	60	Mar. 13.....	72	Jan. 9.....	24
9.....	80	20.....	90	20.....	32
		21.....	72	21.....	31
1924		29.....	56	22.....	27
Jan. 5.....	36	30.....	66	23.....	22
6.....	30	Dec. 15.....	9.5	7.....	21
7.....	25	16.....	8.7	8.....	31
21.....	48	17.....	8.3	9.....	30
22.....	43	18.....	8.0	10.....	26
23.....	39	26.....	35	11.....	23
24.....	36	27.....	29	12.....	20
		28.....	23	13.....	18
1925		29.....	18	14.....	16
Feb. 13.....	100	30.....	15	15.....	15
14.....	150	31.....	11	16.....	14
14.....	110			17.....	14
28.....	72	1926		18.....	16
Mar. 1.....	76	Jan. 19.....	80		
2.....	70				
3.....	60	1929			
12.....	66	Jan. 8.....	33		

## Moss Brook at Wendell Depot, Mass.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1922, 1924-26, 1929

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1922.....	195	8	70.1	5.70	6.57
Water year 1921-22.....	292	2.0	33.8	2.75	37.27
January 1924.....	145	17	46.6	3.79	4.37
Water year 1923-24.....	305	1.1	24.9	2.02	27.49
February 1925.....	150	2.6	40.7	3.31	3.45
March.....	90	23	55.7	4.53	5.22
Water year 1924-25.....	150	1.4	17.0	1.38	18.78
December 1925.....	53	7.7	23.6	1.92	2.21
January 1926.....	80	4.6	15.4	1.25	1.44
Water year 1925-26.....	80	.7	16.0	1.30	17.66
January 1929.....	39	4.5	14.2	1.15	1.33
February.....	31	7.0	14.3	1.16	1.21
Water year 1928-29.....	222	.3	22.4	1.82	24.72

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1				June 2 to Aug. 12		Aug. 13 to Sept. 30	
1.3	3.6	2.5	72	1.0	1.0	1.0	0.7
1.5	7.6	3.0	138	1.1	1.7	1.1	1.2
1.7	14	3.6	258	1.2	2.6	1.2	2.0
2.1	36			1.3	3.8	1.3	3.2
				1.5	7.6	1.5	7.6

Note.--These tables same as preceding table above 1.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.4	24	20	36	58	13	54	45	69	6.1	1.5	1.7
2	4.3	31	21	39	48	12	108	34	238	4.8	1.5	20
3	4.3	141	20	40	36	14	115	28	106	4.3	1.7	8.8
4	4.3	221	21	35	46	14	116	26	56	3.6	1.5	5.8
5	4.3	97	28	30	66	16	145	24	45	13	1.8	3.8
6	4.1	58	50	29	63	16	254	22	34	7.2	3.1	2.6
7	5.3	67	49	28	51	18	126	22	29	4.6	3.3	2.0
8	46	152	*38	25	39	16	90	21	23	4.0	2.6	1.6
9	*52	86	39	22	40	15	72	17	18	3.3	1.7	1.6
10	24	*56	49	21	33	14	62	16	17	21	2.6	1.4
11	19	45	39	20	31	24	56	18	14	40	3.3	1.3
12	45	38	31	17	27	56	49	78	16	20	4.5	1.2
13	47	33	25	17	24	70	42	79	13	8.8	5.6	1.2
14	27	32	22	18	22	46	54	47	11	5.9	3.2	1.2
15	21	49	20	19	20	33	79	34	9.4	4.5	9.4	1.5
16	17	50	18	28	*18	31	55	35	8.2	3.4	6.1	1.6
17	14	56	18	27	17	27	42	*30	6.6	*3.0	12	1.3
18	13	48	18	39	18	23	36	28	15	2.6	8.8	*1.1
19	12	36	19	*48	20	27	31	27	9.4	*2.5	4.7	9.8
20	11	30	20	49	21	29	27	25	8.5	2.6	2.9	8.2
21	9.4	25	45	57	20	30	24	34	7.2	2.4	2.2	3.8
22	9.1	23	50	44	19	34	22	47	5.4	2.4	2.2	2.7
23	9.1	24	52	57	18	38	21	34	5.0	2.0	1.8	2.3
24	9.4	30	50	64	18	48	19	25	5.1	2.5	1.6	2.7
25	51	31	42	49	16	47	19	25	18	2.1	1.3	2.4
26	66	29	31	60	15	47	38	41	14	1.8	1.3	2.0
27	36	28	26	117	14	65	39	34	8.2	2.0	1.2	2.0
28	27	26	134	14	*72	49	27	44	6.6	2.2	1.1	1.6
29	34	24	24	90	14	55	112	21	5.9	1.9	1.1	1.6
30	29	22	23	68	-	51	69	32	7.9	1.7	1.0	1.5
31	23	-	28	62	-	52	-	27	-	1.6	1.1	-
Total	684.0	1,612	964	1,389	847	1,055	2,025	1,000	828.4	187.8	176.9	100.5
Mean	22.1	53.7	31.1	44.8	29.2	34.0	67.5	32.3	27.6	6.06	5.71	3.35
Cfs/m	1.60	4.37	2.53	3.64	2.37	2.76	5.49	2.63	2.24	0.493	0.464	0.272
In.	2.07	4.67	2.91	4.20	2.56	3.19	6.12	3.02	2.50	0.57	0.53	0.30
Calendar year 1951: Max	269				Min 2.2	Mean 27.8	Cfs/m 2.26	In. 30.66				
Water year 1951-52: Max	254				Min 1.0	Mean 29.7	Cfs/m 2.41	In. 32.84				

Peak discharge (base, 160 cfs).--Nov. 4 (2 a.m.) 291 cfs (3.73 ft); Nov. 8 (10 a.m.) 194 cfs (3.25 ft); Apr. 6 (2 a.m.) 336 cfs (5.90 ft); June 2 (6 a.m.) 320 cfs (3.84 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27, 28, Dec. 13-30, Jan. 6-14, 21-26, Jan. 25 to Feb. 1, Feb. 12 to Mar. 2.

## Millers River at Erving, Mass.

Location.--Lat 42°35'51", long. 72°26'19", on right bank 75 ft downstream from bridge at Farley, 0.6 mile upstream from Mormon Hollow Brook, 2.4 miles downstream from Erving, Franklin County, and 5.5 miles upstream from mouth.

Drainage area.--375 sq mi.

Records available.--August 1914 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map). Prior to June 30, 1915, staff gage, June 30, 1915, to Sept. 20, 1938, water-stage recorder, and Sept. 21, 1938, to Dec. 31, 1938, staff gage, at site 2.2 miles upstream at different datum. Jan. 1 to Mar. 29, 1939, staff gage and Mar. 30, 1939, to Sept. 12, 1941, water-stage recorder, at site 0.4 mile downstream at different datum.

Average discharge.--38 years, 628 cfs.

Extremes.--Maximum discharge during year, 3,870 cfs Apr. 6 (gage height, 6.45 ft); minimum daily, 65 cfs July 31.

1914-52: Maximum discharge, 29,000 cfs Sept. 22, 1938 (gage height, 13.37 ft, from floodmarks, site and datum then in use), mean of two slope-area determinations; practically no flow at times during 1915 and 1916 because of regulation; minimum daily, 8 cfs Sept. 6, 1926.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplants, Lake Monomonic and other reservoirs, and at high flow by Birch Hill and Tully Reservoirs (see p. 302).

Revisions (water years).--W 641: 1920(M). W 756: Drainage area. W 781: 1928(M), 1933(M).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	62	4.0	1,030
2.2	113	4.5	1,360
2.5	195	5.0	1,840
3.0	396	6.0	3,170
3.5	705	6.5	3,950

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	153	733	634	1,050	1,820	470	1,450	1,340	1,280	241	77	128
2	140	851	608	1,150	1,590	370	1,970	1,180	2,370	217	68	376
3	185	1,850	672	1,200	1,450	445	2,150	1,040	1,800	192	78	468
4	171	2,850	796	1,150	1,510	468	2,270	884	1,590	214	99	401
5	221	2,500	1,030	1,100	1,620	480	2,730	845	1,460	334	83	315
6	214	2,200	1,070	1,050	1,600	480	3,690	768	1,240	249	107	238
7	209	1,800	1,060	970	1,490	542	2,980	740	1,090	198	133	171
8	708	2,300	1,110	920	1,560	562	2,740	660	922	162	126	148
9	916	1,860	1,210	940	1,300	542	2,450	549	796	140	113	122
10	782	1,640	1,160	870	1,170	582	*2,330	480	686	255	123	116
11	*692	1,550	1,100	790	1,170	952	2,170	401	601	562	154	111
12	970	1,230	988	700	1,090	1,350	1,920	1,000	582	480	156	120
13	994	1,160	820	640	810	1,420	1,680	1,140	487	334	768	*93
14	858	*1,300	660	580	900	1,370	1,760	1,010	386	267	864	86
15	705	1,360	556	650	831	1,220	1,850	922	295	329	705	104
16	608	1,460	520	800	*775	1,090	1,780	871	295	106	267	100
17	530	1,480	500	900	650	1,050	1,630	796	297	174	192	121
18	498	1,350	540	*1,060	520	976	1,440	719	303	159	747	127
19	412	1,260	600	1,140	640	964	1,220	726	275	*120	504	196
20	357	1,100	800	1,200	698	940	1,160	*686	259	105	362	256
21	347	958	1,200	1,320	666	988	1,040	817	227	133	295	252
22	349	817	1,450	1,150	660	1,030	964	916	186	132	268	227
23	334	845	1,500	1,540	608	1,100	871	890	205	128	189	231
24	352	890	1,450	1,530	450	*1,250	838	782	201	120	143	218
25	905	878	1,350	1,310	540	1,230	775	719	269	110	167	175
26	1,120	964	1,200	1,720	610	1,290	970	916	245	96	159	152
27	988	890	1,100	2,830	560	1,510	1,020	904	214	95	140	125
28	890	850	1,000	2,930	520	1,690	1,280	796	171	107	138	111
29	940	750	900	2,620	540	1,630	1,600	692	172	93	135	124
30	878	712	850	2,170	-	1,480	1,460	747	249	86	113	107
31	761	-	950	1,960	-	1,480	-	747	-	65	91	-
Total	18,167	40,358	29,384	39,940	28,148	30,951	52,068	25,683	19,153	6,005	7,562	5,519
(Mean)	586	1,345	948	1,288	971	998	1,736	828	638	194	244	184
( $\bar{x}$ )	+3.5	+18.8	+6.9	+113.4	-124.2	-3.5	+4.6	-15.4	-2.7	-1.5	0	+0.1

Adjusted for change in reservoir contents

Mean	587	1,353	950	1,331	921	997	1,737	823	637	193	244	184
Cfs/m	1.57	3.61	2.53	3.55	2.46	2.66	4.63	2.19	1.70	0.515	0.651	0.491
In.	1.81	4.02	2.92	4.09	2.65	3.07	5.17	2.53	1.90	0.59	0.75	0.55

	Observed						Adjusted					
Calendar year 1951:	Max	3,400	Min	140	Mean	851	Mean	851	Cfs/m	2.27	In.	30.81
Water year 1951-52:	Max	3,690	Min	65	Mean	828	Mean	828	Cfs/m	2.21	In.	30.05

\* Discharge measurement made on this day.

† Change in contents in Birch Hill and Tully Reservoirs, in millions of cubic feet.

Note.--No gage-height record Nov. 4-8, Dec. 16 to Jan. 17; discharge estimated on basis of weather records, recorded range in stage, and records for other stations in Millers River basin. Stage-discharge relation affected by ice Nov. 27-29, Dec. 13, 14, Feb. 13, 14, 17, 18, Feb. 24 to Mar. 2, and at times during period of no gage-height record in winter.

## Connecticut River at Turners Falls, Mass.

Location.--Lat 42°36'40", long. 72°33'20", at dam of Western Massachusetts Electric Co., at Turners Falls, Franklin County, 0.2 mile upstream from Falls River.

Drainage area.--7,163 sq mi.

Records available.--January 1915 to September 1952.

Average discharge.--37 years, 11,830 cfs (adjusted for storage).

Remarks.--Discharge computed by adding flow over and through dam, flow for factories through canal that diverts around dam, and flow through power stations 1 and 2 of Western Massachusetts Electric Co. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis since 1940, Comerford Station Pond since 1930 (see p. 302), and other reservoirs (combined usable capacity, about 19½ billion cu ft).

Cooperation.--Records furnished by Western Massachusetts Electric Co.

Revisions (water years). W 741: 1932. W 891: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,870	9,100	10,800	14,400	14,600	8,570	22,400	30,600	21,700	7,950	3,080	138
2	5,300	10,100	6,210	15,000	13,600	3,450	29,300	24,600	99,100	6,640	1,470	8,000
3	5,120	22,700	11,800	15,400	14,800	8,710	40,200	22,200	81,500	5,450	138	5,390
4	4,700	52,700	9,870	15,400	15,800	8,510	59,500	18,000	47,500	1,610	3,130	5,670
5	4,960	42,200	13,000	15,700	16,900	7,830	55,500	14,900	44,000	2,000	3,110	4,960
6	1,900	31,400	20,100	12,700	19,700	9,930	88,200	10,200	37,400	475	3,070	2,050
7	3,750	25,200	24,000	12,800	19,700	8,530	77,800	13,700	32,100	4,720	1,930	138
8	23,500	35,900	20,800	11,700	17,100	8,200	60,100	14,600	28,600	5,220	2,810	3,380
9	18,600	34,000	20,800	10,700	16,400	4,310	55,300	14,400	21,500	4,860	526	3,290
10	13,700	25,400	20,600	10,200	15,000	7,990	55,200	14,200	17,500	6,610	550	3,590
11	8,470	24,200	16,200	10,600	12,600	9,530	58,800	14,100	15,900	12,400	3,350	3,820
12	13,000	22,400	15,900	10,100	12,900	12,800	59,900	23,900	14,600	9,760	3,680	2,600
13	13,800	16,500	15,700	8,910	13,300	15,700	59,100	35,400	11,900	138	4,980	327
14	2,760	11,600	13,500	3,260	11,000	15,900	54,600	30,600	11,700	4,180	5,190	138
15	7,080	15,000	7,640	10,400	12,100	13,200	65,200	25,600	10,900	4,940	6,990	3,170
16	8,670	16,200	3,940	12,200	9,390	11,100	64,300	24,500	11,300	4,810	233	2,680
17	7,900	20,500	8,320	14,500	7,950	10,900	59,400	20,900	9,930	4,000	60	2,010
18	8,430	19,900	7,060	15,100	8,510	10,700	58,400	17,900	9,510	3,620	3,150	2,870
19	8,070	17,400	6,910	15,300	9,930	11,100	55,600	16,500	8,540	1,030	3,540	2,390
20	5,830	16,300	8,110	15,900	10,600	10,600	54,900	15,400	8,880	138	4,120	454
21	1,660	14,900	9,980	16,300	10,500	12,300	57,400	15,900	8,180	4,590	5,210	508
22	5,830	10,500	14,000	13,600	10,600	12,100	53,400	21,700	3,510	4,520	4,840	2,820
23	5,720	9,510	13,500	14,000	9,860	10,400	50,100	20,400	7,330	4,100	857	3,080
24	6,600	11,000	14,900	12,200	8,650	14,300	50,400	18,900	7,260	3,920	138	4,060
25	8,680	13,900	12,900	14,900	8,440	16,100	45,800	17,000	7,320	3,040	3,300	2,690
26	11,700	14,000	12,900	15,000	10,100	16,400	43,600	20,700	7,160	701	2,680	2,730
27	11,000	15,000	13,000	17,500	8,620	19,400	38,100	22,900	9,060	596	3,320	244
28	7,280	11,600	11,200	21,300	7,610	23,700	33,200	20,500	9,860	3,380	3,430	138
29	10,000	8,650	10,600	20,500	9,110	24,000	41,600	17,300	9,410	3,880	3,910	3,090
30	11,600	9,800	9,650	17,500	-	20,400	37,500	17,000	9,480	4,110	426	2,560
31	8,640	-	13,800	15,200	-	17,800	-	15,000	-	4,020	175	-
Total	262,330	587,560	397,490	434,270	353,350	384,460	1,562,6	609,400	622,030	127,408	83,393	78,785
Mean	8,462	19,590	12,820	14,010	12,180	12,400	52,090	19,660	20,730	4,110	2,690	2,626
(+)	-1,003	+657	-82	-1,199	-2,557	-2,028	+5,070	+1,933	+1,105	-1,355	-1,132	-982

Adjusted for change in reservoir contents

Mean	8,088	19,840	12,790	13,560	11,160	11,640	54,040	20,380	21,160	3,604	2,287	2,247
Cfsm	1.13	2.77	1.79	1.89	1.56	1.63	7.54	2.85	2.95	0.503	0.316	0.314
In.	1.30	3.09	2.06	2.18	1.68	1.87	8.42	3.28	3.30	0.58	0.36	0.35

	Observed						Adjusted					
Calendar year 1951:	Max	90,900	Min	138	Mean	14,250	Max	14,220	Cfsm	1.99	In.	26.95
Water year 1951-52:	Max	99,100	Min	60	Mean	15,040	Max	14,990	Cfsm	2.09	In.	28.47

† Change in contents in First Connecticut and Second Connecticut Lakes, Lake Francis, Comerford Station Pond, Union Village Reservoir, 4 reservoirs in Mascota River basin, Sunapee Lake, and Surry Mountain, Birch Hill, and Tully Reservoirs, in millions of cubic feet.

‡ Expressed in thousands.

## Deerfield River at Charlemont, Mass.

Location.--Lat 42°37'33", long 72°51'20", on left bank 1 mile downstream from Charlemont, Franklin County, and 2.5 miles downstream from Chickley River.

Drainage area.--362 sq mi.

Records available.--June 1913 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 517.36 ft above mean sea level, datum of 1929.

Average discharge.--39 years, 895 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 27,000 cfs June 1 (gage height, 13.88 ft); minimum, 46 cfs Aug. 25; minimum daily, 51 cfs Aug. 25.  
1913-52: Maximum discharge, 56,300 cfs Sept. 21, 1938 (gage height, 20.17 ft, from floodmarks), from rating curve extended above 31,000 cfs on basis of slope-area and contracted-opening determinations at gage heights 17.75 and 20.17 ft; no flow June 17, 1921; minimum daily, 5 cfs June 17, 1921.

Remarks.--Records good. Flow regulated by Somerset Reservoir, since 1924 by Harriman Reservoir (see p. 302), and by several powerplants above station.

Revisions (water years).--W 781: 1915(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 1

Sept. 2-30

1.4	42	3.0	890	1.4	51	2.5	495
1.5	64	4.0	1,920	1.6	100	3.0	860
1.7	118	6.0	5,210	2.0	325	3.5	1,500
2.0	227	9.0	11,900				
2.5	500						

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	654	1,120	1,000	1,010	1,330	1,050	2,360	1,700	9,200	644	508	392
2	953	1,000	946	1,390	1,370	1,000	3,720	1,590	11,200	288	223	1,110
3	953	3,040	987	1,190	1,340	1,050	3,210	1,470	3,380	95	122	540
4	944	2,670	1,190	1,270	1,540	1,350	3,430	402	2,710	153	238	500
5	944	1,230	1,700	1,250	1,960	1,350	5,780	634	2,200	128	*510	159
6	818	933	2,460	897	1,650	1,330	6,040	1,090	1,500	126	336	100
7	436	2,440	2,020	1,030	al,500	1,350	5,280	1,020	827	*141	482	82
8	2,840	4,220	1,650	1,100	al,250	1,330	2,200	814	354	454	375	232
9	1,020	2,980	1,270	1,190	al,400	1,030	2,180	420	610	446	222	447
10	*1,050	2,060	1,400	1,170	al,100	1,360	2,500	219	999	736	72	357
11	1,330	954	1,250	1,140	al,230	1,560	*2,660	233	1,090	678	319	408
12	2,270	843	1,200	*1,150	al,190	2,020	2,000	3,020	951	248	638	438
13	1,270	1,050	1,150	452	al,150	1,670	2,830	936	160	778	155	
14	961	1,550	1,100	971	al,070	1,580	3,050	1,940	250	420	232	65
15	974	*2,140	1,150	1,240	al,150	1,090	2,480	1,790	147	722	190	476
16	970	2,140	920	1,320	al,150	1,400	1,990	1,790	589	802	116	*607
17	1,050	2,580	*1,100	1,250	al,150	1,470	1,860	1,240	898	826	400	668
18	1,060	1,720	1,050	1,490	al,050	1,490	1,890	702	816	640	496	655
19	1,020	1,130	1,100	1,340	1,160	1,790	1,830	894	612	258	470	752
20	635	1,210	1,050	1,130	1,100	1,960	1,880	1,220	586	74	549	304
21	298	1,170	1,390	1,300	1,100	2,000	1,630	*1,930	230	528	343	90
22	912	810	1,550	1,150	1,120	2,130	1,550	1,960	118	942	288	370
23	1,020	1,030	1,050	1,440	1,100	2,230	1,480	1,820	302	774	112	671
24	1,020	1,370	950	1,280	1,100	2,240	1,400	1,490	332	840	53	624
25	1,400	975	1,030	1,240	1,080	2,140	1,160	1,270	820	792	51	557
26	1,070	1,240	1,000	1,710	1,080	2,360	1,770	3,070	614	333	375	467
27	864	1,180	1,150	3,160	1,080	*2,660	532	2,610	474	146	503	117
28	568	1,150	1,100	2,318	1,100	2,460	1,570	2,180	316	736	435	69
29	806	1,160	922	1,840	1,200	1,600	2,100	1,610	344	793	413	325
30	1,100	1,150	702	1,500	-	965	1,940	883	679	734	192	534
31	999	-	1,030	1,250	-	1,330	-	473	-	701	118	-
Total	32,209	48,045	37,567	40,960	35,900	50,525	71,142	44,314	44,084	15,258	9,957	12,271
Mean	1,039	1,602	1,212	1,321	1,238	1,630	2,371	1,429	1,469	492	321	409
(†)	+207	+169	-161	+73	-1,034	-2,253	+3,510	+528	-308	-911	-448	-506

Adjusted for change in reservoir contents

	Mean	1.116	1.667	1.152	1.549	837	789	3,726	1,627	1,351	152	154	214
Cfs/m	3.08	4.60	3.18	3.73	2.31	2.18	10.3	4.49	3.75	0.420	0.425	0.591	
In.	3.56	5.14	3.67	4.29	2.49	2.51	11.48	5.18	4.16	0.48	0.49	0.66	

Observed

Adjusted

Calendar year 1951:	Max	8,240	Min	109	Mean	1,127	Mean	1,129	Cfs/m	3.12	In.	42.34
Water year 1951-52:	Max	11,200	Min	51	Mean	1,208	Mean	1,173	Cfs/m	3.24	In.	44.11

\* Discharge measurement made on this day.

† Change in contents in Somerset and Harriman Reservoirs, in millions of cubic feet.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and powerplant records.

Note.--Stage-discharge relation affected by ice Dec. 10-20, 23-28, Jan. 8, 21, 22, 30, 31, Feb. 20 to Mar. 8, Mar. 16, and at times during period of no gage-height record.

## North River at Shattuckville, Mass.

Location.--Lat 42°38'18", long. 72°43'32", on right bank in Shattuckville, Franklin County, 1 1/4 miles south of Griswoldville and 1.3 miles upstream from mouth.

Drainage area.--88.4 sq mi.

Records available.--December 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 458.36 ft above mean sea level, datum of 1929.

Average discharge.--13 years, 177 cfs.

Extremes.--Maximum discharge during year, 5,980 cfs June 1 (gage height, 8.09 ft), from rating curve extended above 3,600 cfs on basis of computation of flow over dam at gage height 9.62 ft; minimum, 11 cfs Aug. 26, 27, 29; minimum daily, 14 cfs Aug. 30. 1939-52: Maximum discharge, 10,000 cfs Dec. 31, 1948 (gage height, 9.62 ft), from rating curve extended above 3,600 cfs as described above; minimum daily, 5.1 cfs Oct. 3, 1948.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low flow caused by mill above station; prior to 1950, greater regulation by mill.

Revisions (water years).--W 1111: 1945(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second

Oct. 1 to June 1

June 2 to Sept. 30

2.0	44	4.0	635	1.6	14	2.5	121
2.5	117	5.0	1,310	1.8	26	3.0	237
3.0	230	6.0	2,350	2.1	56	3.5	393
3.5	393	7.0	3,910				

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	151	184	236	240	120	545	293	2,880	73	19	123
2	48	142	225	297	265	115	1,090	253	1,570	58	18	396
3	46	1,700	203	256	265	120	928	225	562	50	18	94
4	48	678	186	219	403	110	994	203	393	42	20	57
5	48	375	669	211	584	112	*2,200	186	318	40	31	43
6	44	287	917	206	410	118	*2,030	190	270	35	40	35
7	73	1,000	444	181	320	118	930	184	250	32	29	31
8	1,240	944	343	155	274	108	677	159	208	31	25	33
9	276	510	391	175	262	106	668	146	206	31	20	20
10	*170	371	371	181	227	109	831	136	188	320	27	23
11	231	330	287	160	223	258	866	176	156	329	49	21
12	548	293	259	*160	196	547	618	1,520	143	125	41	20
13	244	253	210	155	160	150	300	801	127	90	126	18
14	179	296	*180	149	170	227	1,340	597	112	52	49	18
15	155	496	170	205	175	185	916	357	100	46	34	22
16	131	389	160	300	168	175	683	392	68	33	41	*31
17	119	408	185	205	161	176	564	284	90	27	202	27
18	113	297	165	339	*157	168	525	297	119	26	74	23
19	108	247	165	262	165	182	458	256	90	25	43	53
20	101	*214	160	295	160	181	405	236	85	25	34	63
21	93	189	300	278	155	205	320	*508	70	*26	30	34
22	89	177	450	190	151	239	265	413	66	25	27	31
23	89	225	280	430	146	278	242	281	64	24	25	26
24	91	290	210	292	145	297	208	230	57	29	22	32
25	403	225	185	205	140	278	238	719	330	25	21	33
26	201	203	180	400	135	341	425	667	129	22	20	28
27	153	181	170	860	130	*476	274	375	92	25	19	25
28	162	153	160	552	125	420	695	274	73	27	16	25
29	214	177	170	340	125	340	703	253	91	23	18	26
30	153	175	189	230	-	343	382	262	110	22	14	21
31	138	-	253	235	-	386	-	236	-	20	16	-
Total	5,757	11,376	8,401	8,359	6,237	7,138	21,540	10,709	9,037	1,748	1,168	1,432
Mean	185	379	271	270	215	230	718	345	301	56.4	37.7	47.7
Cfs/m	2.10	4.29	3.07	3.05	2.43	2.60	8.12	3.90	3.40	0.638	0.426	0.540
In.	2.42	4.79	3.53	2.92	2.62	3.00	9.06	4.51	3.80	0.74	0.49	0.60

Calendar year 1951: Max 3,820 Min 34 Mean 239 Cfs/m 2.70 In. 36.64  
Water year 1951-52: Max 2,880 Min 14 Mean 254 Cfs/m 2.87 In. 39.08

Peak discharge (base, 1,880 cfs).--Oct. 8 (3:30 a.m.) 3,120 cfs (8.50 ft); Nov. 3 (12:30 p.m.) 3,280 cfs (8.59 ft); Nov. 7 (4 p.m.) 2,450 cfs (6.04 ft); Apr. 5 (11 p.m.) 4,410 cfs (7.30 ft); Apr. 14 (9 a.m.) 1,920 cfs (5.63 ft); May 12 (6:15 a.m.) 2,400 cfs (6.01 ft); June 1 (6:30 p.m.) 5,980 cfs (8.09 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record July 4-9, July 16 to Aug. 5; discharge estimated on basis of 1 discharge measurement, weather records, and records for stations on nearby streams including Wallomac River near North Bennington, Vt., and North Branch Hoosic River at North Adams. Stage-discharge relation affected by ice Nov. 26-30, Dec. 13-29, Jan. 5, 7-12, 15, 17, 22, 23, 25-27, Jan. 29 to Feb. 1, Feb. 13-16, 19, 20, Feb. 24 to Mar. 3, Mar. 15, 16.

## Deerfield River near West Deerfield, Mass.

Location.--Lat 42°32'09", long. 72°39'14", on right bank 0.4 mile downstream from South River, 1½ miles west of West Deerfield, Franklin County, and 2½ miles west of Deerfield.

Drainage area.--558 sq mi.

Records available.--March 1904 to December 1905 (gage heights only), October 1940 to September 1952. Published as "at Deerfield" 1904-5.

Gage.--Water-stage recorder. Altitude of gage is 155 ft (from topographic map). Prior to Dec. 16, 1905, chain gage at site 1.5 miles downstream at different datum.

Average discharge.--12 years (1940-52), 1,283 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 34,800 cfs June 1 (gage height, 12.81 ft); minimum daily, 72 cfs Sept. 28.

1940-52: Maximum discharge, 48,500 cfs Dec. 31, 1948 (gage height, 15.43 ft); minimum daily, 46 cfs Aug. 3, 1947.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow regulated by Somerset and Harriman Reservoirs (see p. 302), and by several powerplants above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

2.4	490	1.5	56	3.0	1,100
2.7	760	1.7	116	4.0	2,570
3.0	1,090	1.9	201	5.0	4,650
4.0	2,570	2.1	310	7.0	10,600
		2.5	595	8.5	16,200

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	525	1,710	1,430	1,590	1,970	1,230	3,320	2,430	12,900	832	618	621
2	994	1,260	1,400	1,920	1,910	1,300	5,740	2,120	16,100	508	375	2,140
3	1,030	6,520	1,390	1,820	1,970	1,370	5,140	2,060	4,670	192	200	556
4	1,040	4,280	1,550	1,710	2,650	1,510	5,350	906	3,780	254	276	814
5	1,030	2,310	2,950	1,730	3,290	1,680	10,400	1,010	3,150	236	490	209
6	869	1,440	4,160	1,390	2,710	1,610	10,500	1,310	2,300	264	450	180
7	891	4,370	3,040	1,350	2,710	1,830	5,480	1,480	1,500	229	573	101
8	4,630	6,100	2,530	1,440	1,860	1,580	3,810	1,200	930	539	502	265
9	1,490	4,110	1,970	1,640	1,900	1,310	3,610	738	976	539	269	491
10	*1,150	3,020	2,420	1,580	1,790	1,480	3,960	554	1,230	1,600	158	475
11	1,580	1,770	1,690	1,460	1,590	2,390	4,300	690	1,460	1,550	413	368
12	3,350	*1,330	*1,820	1,500	1,660	3,190	3,410	5,560	1,290	488	784	558
13	1,580	1,520	1,670	860	1,480	2,340	2,590	3,940	1,310	284	1,350	308
14	1,320	2,020	1,460	1,190	1,400	2,060	5,220	3,020	558	568	276	142
15	1,230	3,000	1,560	1,610	1,640	1,500	4,230	2,480	391	818	274	422
16	1,210	2,840	1,220	*1,850	1,500	1,770	3,330	2,660	748	881	249	*604
17	1,180	3,410	b1,500	1,630	1,570	1,810	*2,920	2,050	1,050	840	764	900
18	1,310	2,530	b1,500	2,100	1,420	1,790	2,790	1,380	1,230	*874	655	674
19	1,170	1,780	b1,450	1,880	1,570	2,080	2,750	1,050	871	457	488	787
20	897	1,490	b1,350	1,840	1,470	2,340	2,700	1,850	756	207	554	612
21	604	1,430	b2,300	1,900	1,500	2,440	2,340	2,980	459	402	512	141
22	853	1,330	2,700	1,580	1,390	2,660	2,160	*3,000	286	932	355	307
23	1,180	1,290	b1,800	2,370	1,400	2,920	1,980	2,530	472	991	200	754
24	1,210	1,910	b1,400	1,900	1,400	2,980	1,940	2,110	492	816	81	692
25	2,490	1,550	b1,400	1,600	1,450	2,810	1,580	2,210	1,460	978	116	652
26	1,370	1,680	b1,500	2,580	1,330	*3,090	2,570	4,160	862	628	364	640
27	1,110	1,640	b1,500	4,870	1,370	3,740	4,530	3,430	704	232	664	249
28	976	1,680	b1,450	3,590	1,350	3,430	2,780	2,880	950	556	572	72
29	1,060	1,600	b1,400	2,730	1,630	2,640	2,160	2,160	619	998	396	330
30	1,400	1,490	1,340	b1,600	-	1,740	2,770	1,820	875	768	304	478
31	1,280	-	1,820	b1,800	-	2,240	-	959	-	756	117	-
Total	42,009	72,010	56,740	58,790	50,190	66,660	115,000	66,727	63,869	20,317	13,399	15,542
Mean	1,355	2,400	1,830	1,896	1,731	2,150	3,833	2,152	2,129	655	432	518
(†)	+207	+169	-161	+73	-1,024	-2,253	+3,510	+528	-308	-911	-448	-506

Adjusted for change in reservoir contents

	1,432	2,466	1,770	1,924	1,330	1,309	5,188	2,350	2,010	315	265	323
Mean	1,432	2,466	1,770	1,924	1,330	1,309	5,188	2,350	2,010	315	265	323
Cfs/m	2.57	4.42	3.17	3.45	2.38	2.35	9.30	4.21	3.60	0.565	0.475	0.579
In.	2.96	4.93	3.66	3.97	2.57	2.70	10.37	4.85	4.02	0.65	0.55	0.65

Observed

Adjusted

Calendar year 1951:	Max	15,600	Min	200	Mean	1,593	Mean	1,594	Cfs/m	2.86	In.	38.79
Water year 1951-52:	Max	16,100	Min	72	Mean	1,752	Mean	1,717	Cfs/m	3.08	In.	41.88

\* Discharge measurement made on this day.

† Change in contents in Somerset and Harriman Reservoirs, in millions of cubic feet.

b Stage-discharge relation affected by ice.

## Connecticut River at Montague City, Mass.

Location.--Lat 42°34'48", long. 72°34'30", on left bank 75 ft downstream from New York, New Haven & Hartford Railroad bridge at Montague City, Franklin County, and 1,000 ft downstream from Deerfield River.

Drainage area.--7,865 sq mi.

Records available.--March 1904 to September 1952. Prior to October 1932, published as "at Sunderland." Records published for both sites October 1929 to September 1932.

Gage.--Water-stage recorder. Datum of gage is 99.87 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1917, chain gage; Oct. 1, 1917, to Oct. 8, 1921, water-stage recorder used for low stages, chain gage otherwise; and Oct. 9, 1921, to Sept. 30, 1932, water-stage recorder, at site 9 miles downstream at datum 1.00 ft lower. Gages at both sites in operation Oct. 1, 1929, to Sept. 30, 1932.

Average discharge.--48 years, 13,720 cfs (adjusted for storage since October 1923).

Extremes.--Maximum discharge during year, 108,000 cfs June 2 (gage height, 33.27 ft); minimum daily, 450 cfs Sept. 28.

1904-52: Maximum discharge, 236,000 cfs Mar. 19, 1936 (gage height, 49.2 ft, from floodmarks), from rating curve extended above 160,000 cfs; minimum daily, 325 cfs July 4, 1949.

Remarks.--Records good except those for periods of ice effect and those below 1,500 cfs, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis since 1940, Comerford Station Pond since 1930 (see p. 302), and other reservoirs (combined usable capacity, about 2½ billion cu ft).

Revisions (water years).--W 471: 1904-13 calendar years, 1914-17. W 741: 1930-32. W 781: 1928(M). W 891: Drainage area. W 1051: 1905, 1909-10, 1912-14, 1920, 1922-23, 1925-26, 1928, drainage area at Sunderland.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.9	420	6.0	2,310	18.0	33,800
4.2	610	7.0	3,620	24.0	58,500
4.5	830	9.0	7,110	32.0	100,000
5.0	1,250	12.0	14,400		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,650	10,800	13,500	16,000	17,000	10,100	24,800	31,900	30,400	8,660	4,000	a520
2	6,480	11,500	7,800	17,000	16,000	6,660	33,700	27,700	89,800	6,890	2,250	10,400
3	6,050	26,800	12,700	17,500	17,000	9,800	43,400	24,600	86,800	5,610	a530	5,990
4	5,730	49,200	11,600	18,000	19,000	10,300	53,600	20,100	62,900	1,990	3,190	6,320
5	5,530	42,700	16,200	17,500	20,500	9,460	57,200	16,000	50,500	2,260	3,770	5,500
6	3,040	33,000	24,800	15,000	23,000	11,800	89,300	12,200	41,300	984	3,750	2,550
7	4,460	29,000	27,100	14,000	22,000	10,500	87,000	15,000	33,100	4,650	2,630	a500
8	26,700	42,400	24,800	13,500	19,000	9,820	69,100	16,200	27,400	5,190	3,420	3,420
9	21,600	36,700	23,800	15,000	18,500	6,390	60,800	15,500	23,100	5,800	1,150	3,560
10	15,400	29,500	24,000	12,000	17,000	9,350	59,300	15,100	19,600	7,840	889	3,960
11	10,100	25,800	19,000	12,500	14,000	12,100	62,500	15,400	17,700	14,600	3,590	4,120
12	10,600	22,500	18,200	12,000	14,500	17,000	63,100	27,900	16,000	10,300	4,600	3,190
13	16,500	19,200	17,700	10,500	15,000	18,800	56,200	39,300	13,700	1,040	6,390	1,020
14	5,010	13,600	15,800	10,000	13,000	19,700	55,800	34,200	13,000	4,620	6,120	a520
15	8,160	18,800	10,000	12,000	14,000	16,500	66,100	28,600	11,600	5,840	6,600	3,260
16	9,760	19,900	6,720	*15,000	11,000	14,000	65,700	27,800	11,700	5,650	1,040	3,450
17	9,210	24,400	10,000	16,500	10,000	12,800	*60,500	23,300	10,900	4,550	911	3,100
18	9,820	23,500	9,000	17,500	10,500	13,200	56,200	20,400	10,600	4,450	4,190	3,480
19	9,230	20,000	8,500	17,500	12,000	13,900	55,600	18,400	9,440	1,900	3,600	3,200
20	6,930	18,200	9,500	18,500	12,500	13,500	55,300	17,500	9,930	*648	4,550	1,520
21	2,840	16,900	12,500	18,500	12,500	15,000	56,400	19,200	8,610	4,660	5,670	912
22	6,860	12,700	17,000	16,000	12,000	*15,600	52,500	25,400	3,690	5,710	5,230	2,900
23	6,890	11,000	15,500	17,000	11,500	13,900	48,900	*24,000	7,570	5,360	1,380	3,750
24	7,420	13,300	16,500	15,000	8,680	18,000	48,300	22,400	7,640	4,670	a480	4,720
25	11,500	16,000	15,000	17,000	9,900	19,600	44,900	19,800	8,950	4,240	3,520	3,560
26	13,700	16,100	14,500	18,000	11,700	20,400	42,200	25,800	8,070	1,700	3,010	3,580
27	12,200	17,200	15,000	23,000	10,500	23,400	37,100	28,300	9,550	1,100	3,970	1,010
28	8,610	13,600	13,000	25,000	9,290	27,900	33,800	25,000	10,400	3,880	3,750	a450
29	11,000	10,700	12,000	24,000	10,900	27,500	43,000	20,900	10,300	5,050	4,210	2,880
30	13,000	11,700	11,000	21,000	-	23,900	37,800	20,200	*9,760	5,000	1,190	3,110
31	10,300	-	15,000	18,000	-	20,700	-	17,000	-	4,850	a600	-
Total	507,260	658,700	467,520	508,000	412,470	471,580	*1,620.1	695,100	683,990	149,992	99,880	96,292
Mean	9,912	21,960	15,080	16,590	14,220	15,210	54,000	22,420	22,800	4,838	3,222	3,210
(†)	-796	+826	-243	-1,126	-3,561	-4,281	+8,580	+2,461	+797	-2,266	-1,580	-1,488

Adjusted for change in reservoir contents

	Mean	9,614	22,280	14,990	15,970	12,800	13,610	57,310	23,340	23,110	3,992	2,632	2,636
Cfsm	1.22	2.83	1.91	2.03	1.63	1.73	7.29	2.97	2.94	0.508	0.335	0.335	
In.	1.41	3.16	2.20	2.34	1.76	2.00	8.13	5.42	3.28	0.59	0.39	0.375	

	Observed						Adjusted					
Calendar year 1951:	Max	94,600	Min	851	Mean	15,540	Mean	15,760	Cfsm	2.00	In.	27.19
Water year 1951-52:	Max	99,800	Min	450	Mean	16,860	Mean	16,760	Cfsm	2.13	In.	29.05

Peak discharge (base, 61,000 cfs).--Apr. 6 (7:30 to 8:30 p.m.) 93,900 cfs (30.99 ft); Apr. 15 (2:30 to 3:30 p.m.) 67,200 cfs (25.97 ft); June 2 (3:30 to 5 p.m.) 108,000 cfs (33.27 ft).

\* Discharge measurement made on this day.

† Change in contents in all reservoirs from First Connecticut and Second Connecticut Lakes to 2 reservoirs in Deerfield River Basin listed on p. 302, in millions of cubic feet.

\* Expressed in thousands.

a No gage-height record; discharge estimated on basis of weather records, shape of normal recession graph, and records for Connecticut River at Turners Falls and Deerfield River near West Deerfield.

Note.--Stage-discharge relation affected by ice Dec. 17 to Feb. 23.



Mill River at Northampton, Mass.

Location.--Lat 42°19'05", long. 72°39'21", on right bank at Northampton, Hampshire County, 3½ miles upstream from mouth.

Drainage area.--52.8 sq mi.

Records available.--November 1938 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 140 ft (from topographic map).

Average discharge.--14 years, 93.5 cfs.

Extremes.--Maximum discharge during year, 2,850 cfs Apr. 5 (gage height, 7.58 ft), from rating curve extended above 2,000 cfs on basis of computations of flow over dam at gage heights 7.58 and 9.38 ft; minimum, 6.1 cfs July 25; minimum daily, 9.2 cfs Aug. 29.

1938-52: Maximum discharge, 3,840 cfs Mar. 31, 1951 (gage height, 9.38 ft), from rating curve extended above 2,000 cfs as explained above; minimum, 2.2 cfs Oct. 1, 1950; minimum daily, 5.5 cfs Sept. 27-30, 1941, Sept. 10, 1944.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those shown in the water-supply papers indicated.

Water Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
891, 921.....	1940	Apr. 9, 1940	2,000	6.14
	1941	Feb. 8, 1941	†1,800	-
951, 971, 1001	1942	Mar. 22, 1942	2,180	6.43
1001.....	1944	Nov. 9, 1943	2,110	6.31
1031.....	1945	Apr. 26, 1945	2,560	7.06
1111.....	1948	Mar. 22, 1948	2,240	6.53
1141, 1171....	1949	Dec. 31, 1948	2,640	7.20

† Not previously published.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by mill above station.

Revisions (water years).--W 921: 1940. Revised figures of discharge, in cubic feet per second, for the high-water period in the water year 1949, superseding those published in Water-Supply Paper 1141, are given herewith:

Dec. 30, 1948..... 490  
Dec. 31, 1948..... 1,950

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
December 1948.....	3,000	1,950	11	96.8	1.85	2.11
Calendar year 1948	33,515.1	1,950	7.6	91.0	1.72	23.48
Water year 1948-49	28,245.5	1,950	6.7	77.4	1.47	19.88

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	93	86	145	205	72	294	*195	*1,490	40	39	90
2	16	101	97	210	172	71	601	167	317	28	21	205
3	21	823	105	190	167	70	458	152	342	25	18	48
4	25	358	92	160	341	68	411	141	256	23	18	32
5	23	201	305	150	394	78	*1,240	127	263	30	16	26
6	29	152	388	140	279	79	1,080	127	203	25	19	20
7	27	657	192	120	223	90	486	123	182	25	36	16
8	295	473	162	110	187	94	377	109	134	22	25	17
9	88	263	205	120	185	92	330	97	111	17	17	15
10	48	209	203	115	169	94	300	90	105	182	24	14
11	68	185	*152	105	155	382	279	112	94	342	39	14
12	247	162	138	105	135	515	232	629	86	62	31	13
13	95	*145	121	105	110	266	215	246	78	42	122	12
14	61	167	98	102	115	206	351	185	70	*35	49	12
15	57	235	100	107	*115	174	283	167	65	29	32	13
16	42	192	98	141	110	152	203	179	64	23	28	*19
17	42	220	88	117	105	145	169	143	62	21	52	16
18	49	164	100	177	130	152	162	174	78	20	39	13
19	50	143	105	150	110	172	150	157	61	18	31	34
20	48	127	100	161	105	159	138	143	50	15	30	44
21	47	103	280	156	101	179	123	270	40	18	23	23
22	43	97	320	100	95	203	117	214	40	17	18	18
23	42	103	200	280	90	259	113	150	43	17	14	13
24	57	113	170	170	64	300	105	121	40	16	12	13
25	286	103	140	134	64	*244	121	245	39	12	13	19
26	119	105	140	220	82	298	260	314	40	14	16	16
27	84	105	125	419	80	361	172	*190	34	15	14	15
28	68	86	125	363	78	315	589	141	28	27	9.8	16
29	77	92	125	230	76	250	*503	125	58	18	9.2	17
30	61	84	120	220	-	247	247	141	58	15	9.8	18
31	57	-	150	215	-	256	-	138	-	12	10	-
Total	2,292	6,061	4,810	5,223	4,282	6,041	10,089	5,512	5,011	1,205	833.8	841
Mean	73.9	202	155	168	148	195	336	178	167	38.9	26.9	28.0
Cfs/m	1.40	3.83	2.94	3.18	2.80	3.89	6.36	3.37	3.16	0.737	0.509	0.550
In.	1.61	4.27	3.59	3.68	3.02	4.26	7.11	3.88	3.53	0.85	0.59	0.59

Calendar year 1951: Max 1,950 Min 15 Mean 122 Cfs/m 2.31 In. 31.54

Water year 1951-52: Max 1,490 Min 9.2 Mean 143 Cfs/m 2.71 In. 36.78

Peak discharge (base, 1,250 cfs).--Nov. 3 (1:30 p.m.) 1,400 cfs (5.23 ft); Nov. 7 (4:30 p.m.) 1,810 cfs (5.82 ft); Apr. 5 (11 p.m.) 2,850 cfs (7.58 ft); Apr. 28 (9 p.m.) 1,340 cfs (5.15 ft); June 1 (5 p.m.) 2,790 cfs (7.46 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 20 to Jan. 14; discharge estimated on basis of weather records, recorded range in stage, and records for stations in Westfield River basin. Stage-discharge relation affected by ice Nov. 26-28, Dec. 14-19, Jan. 22, 23, Jan. 29 to Feb. 1, Feb. 11-20, Feb. 24 to Mar. 3, and at times during period of no gage-height record.

## Ware River near Barre, Mass.

Location.--Lat 42°25'35", long. 72°01'30", on left bank 1,100 ft downstream from bridge at Barre Falls, 1.6 miles upstream from Burnshirt River, and 4 miles east of Barre, Worcester County.

Drainage area.--55.0 sq mi.

Records available.--July 1946 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 745 ft (from topographic map).

Average discharge.--6 years, 89.2 cfs.

Extremes.--Maximum discharge during year, 525 cfs Jan. 28 (gage height, 4.61 ft); maximum gage height, 6.24 ft Dec. 20 (backwater from ice); minimum discharge, 4.8 cfs July 27.

1946-52: Maximum discharge, 1,450 cfs Mar. 23, 1948 (gage height, 5.93 ft), from rating curve extended above 700 cfs by logarithmic plotting; minimum, 1.4 cfs Aug. 28, 29, 1949.

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

Some regulation by Long Pond and other small reservoirs.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	4.5	3.0	73
2.0	6.1	3.5	154
2.1	8.4	4.0	289
2.3	16	4.6	520
2.5	28		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	65	110	180	b245	b76	221	232	112	37	15	14
2	9.3	83	106	202	224	b81	252	187	257	29	13	91
3	9.6	170	105	213	b210	b73	292	152	329	22	11	111
4	10	379	100	b205	216	b68	286	132	284	20	9.3	82
5	10	394	111	177	249	71	280	118	202	42	9.6	58
6	10		315	156	b160	255	85	336	108	159	34	18
7	12	258	190	b120	235	92	354	100	127	25	22	32
8	71	292	187	*b128	b200	89	302	94	99	19	18	23
9	77	306	177	b140	187	82	258	87	86	16	14	19
10	61	287	187	b135	170	80	224	81	76	18	15	16
11	*53	226	182	b120	159	108	197	76	71	39	31	14
12	83	190	161	b110	*142	182	177	122	66	37	29	12
13	85	163	*b125	b105	b130	205	161	154	59	28	54	11
14	69	150	b115	103	b125	200	180	138	52	22	64	9.6
15	58	172	b105	105	b105	b170	235	121	47	*17	48	9.3
16	50	*190	a94	136	b93	b155	229	113	41	14	41	10
17	43	229	a96	b145	90	148	194	100	39	12	112	9.3
18	39	241	a98	172	b72	136	168	100	48	10	123	8.4
19	36	210	b110	210	b108	136	146	102	42	9.0	86	17
20	33	b170	b190	216	b110	136	130	97	37	8.2	57	44
21	30	150	b230	b235	103	*148	120	125	31	7.5	41	41
22	27	132	270	b195	b96	166	106	144	24	7.2	*41	29
23	26	129	289	241	b92	182	99	*134	22	6.3	36	24
24	28	138	249	b235	b92	213	92	111	21	5.8	27	22
25	77	148	b215	b210	b92	216	*94	103	25	5.5	21	19
26	39	146	b180	238	b85	226	156	130	23	5.1	17	17
27	87	148	b165	386	b61	258	187	129	27	6.2	14	18
28	77	b140	b155	488	b78	270	210	106	34	8.4	12	16
29	74	134	b150	b400	77	264	270	92	29	7.0	11	14
30	69	b118	138	b340	-	244	277	96	48	6.1	10	12
31	61	-	154	b290	-	226	-	90	-	7.2	9.3	-
Total	1,482.9	5,853	4,900	6,337	4,121	4,786	6,233	3,674	2,497	530.5	1,029.2	843.6
Mean	47.8	195	158	204	142	154	208	119	83.2	17.1	33.2	28.1
Cfsm	0.869	3.55	2.87	3.71	2.58	2.80	3.78	2.16	1.51	0.311	0.604	0.511
In.	1.00	3.96	3.31	4.28	2.79	3.24	4.21	2.48	1.69	0.36	0.70	0.57
Calendar year 1951:	Max	450		Min	9.0	Mean	116	Cfsm	2.11	In.	28.57	
Water year 1951-52:	Max	488		Min	5.1	Mean	116	Cfsm	2.11	In.	28.59	

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Ware River at Coldbrook, Mass.

Location.--Lat 42°23'30". long. 72°03'40", on right bank above diversion dam at Ware River intake works at Coldbrook, Worcester County, 2 miles east of South Barre and 2.7 miles downstream from Burnshirt River.

Drainage area.--96.8 sq mi.

Records available.--January 1928 to September 1952.

Gage.--Venturi meters and water-stage recorder. Datum of gage is 5.65 ft below mean sea level, datum of 1929. Prior to Feb. 1, 1936, water-stage recorder at site 0.2 mile downstream at datum 631.91 ft above mean sea level, unadjusted.

Average discharge.--24 years, 163 cfs.

Extremes.--Maximum daily discharge during year, 969 cfs Jan. 28; minimum daily, 14 cfs July 25, 26.  
1928-52: Maximum discharge, 14,000 cfs Sept. 21, 1938 (gage height, 664.28 ft), by computation of flow over dam; minimum daily, 5 cfs Aug. 2, 3, 1931.

Remarks.--Records good. Figures of discharge include diversion as needed for Boston metropolitan district during period Oct. 15 to June 14 of each year; diversion began in March 1931. No diversion during current year.

Cooperation.--Computations of daily discharge made in cooperation with Water Division, Metropolitan District Commission, which collected gage-height and Venturi-meter records.

Revisions (water years).--W 781: Drainage area. W 1031: 1944.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	129	181	309	447	143	355	368	272	63	42	59
2	22	151	182	351	390	150	468	297	504	48	30	165
3	22	527	180	354	368	144	521	250	507	40	25	152
4	22	710	171	323	396	140	495	222	364	51	21	112
5	22	676	219	286	467	154	538	198	277	72	29	79
6	22	504	313	273	454	170	666	182	214	52	45	60
7	57	495	326	240	389	175	835	175	198	41	44	47
8	122	560	310	244	336	170	526	161	163	37	34	38
9	80	516	323	265	322	159	430	148	140	32	27	33
10	86	434	340	257	290	153	360	136	129	48	37	30
11	89	361	311	230	278	241	310	147	123	87	56	26
12	143	307	267	221	242	323	277	270	118	69	55	24
13	129	267	208	207	243	330	261	264	103	52	133	22
14	106	260	189	200	229	288	389	229	98	41	117	21
15	90	310	180	215	209	258	424	205	77	34	81	20
16	78	353	159	272	185	242	387	193	81	29	106	21
17	69	417	164	278	163	243	329	171	76	26	230	20
18	63	391	167	340	155	234	283	175	93	23	176	17
19	57	336	186	351	195	237	248	172	77	22	122	57
20	53	278	317	390	201	244	221	227	65	19	82	96
21	49	233	386	404	194	268	198	241	58	18	62	72
22	46	210	462	333	186	291	186	209	51	18	64	53
23	46	211	461	481	175	313	175	175	48	17	53	47
24	56	241	420	442	167	339	163	197	45	15	42	42
25	196	246	350	365	168	330	196	197	50	14	34	37
26	177	254	300	540	168	376	319	234	45	14	30	32
27	144	239	265	904	160	445	324	207	43	19	26	33
28	128	226	260	969	161	460	427	170	48	20	24	30
29	128	217	250	760	155	422	487	157	69	18	23	26
30	114	188	273	537	-	380	457	160	85	16	19	23
31	101	-	282	485	-	354	-	152	-	29	19	-
Total	2,541	10,247	8,400	11,826	7,493	6,176	11,055	6,289	4,231	1,084	1,888	1,494
Mean	82.0	342	271	381	258	264	369	203	141	35.0	60.9	49.8
Cfsm	0.847	3.53	2.80	3.94	2.67	2.73	3.80	2.10	1.46	0.362	0.629	0.514
In.	0.98	3.94	3.23	4.54	2.88	3.14	4.25	2.42	1.63	0.42	0.73	0.57

Calendar year 1951: Max 890 Min 22 Mean 208 Cfsm 2.15 In. 29.10  
Water year 1951-52: Max 969 Min 14 Mean 204 Cfsm 2.11 In. 28.73

Note.--Stage-discharge relation affected by ice Dec. 25-29.

## Ware River at Gibbs Crossing, Mass.

Location.--Lat 42°14'07", long. 72°16'45", on right bank half a mile upstream from Gibbs Crossing, Hampshire County, 1.8 miles upstream from Beaver Brook and 2½ miles south-west of Ware.

Drainage area.--199 sq mi.

Records available.--August 1912 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 379.79 ft above mean sea level, datum of 1929. Prior to Mar. 1, 1930, at site half a mile downstream at different datum.

Average discharge.--40 years, 318 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 1,940 cfs Jan. 27 (gage height, 4.90 ft); minimum, 29 cfs Sept. 14, 15; minimum daily, 29 cfs Sept. 14.

1912-52: Maximum discharge, 22,700 cfs Sept. 21, 1938 (gage height, 18.2 ft, from floodmarks), by slope-area determination; minimum, 5.0 cfs Oct. 26, 1914; minimum daily, 6.0 cfs Oct. 4, 1914.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by mills above station. During period Oct. 15 to June 14 of each year, water may be diverted as needed from 97 sq mi in Ware River basin for supply of Boston metropolitan district; diversion began in March 1931. No diversion during current year.

Revisions (water years).--W 661: Drainage area. W 1031: 1944.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Backwater from aquatic vegetation Sept. 23-30)

1.7	24	3.0	450
1.8	34	3.5	750
2.0	65	4.0	1,140
2.2	110	5.0	2,030
2.5	215		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	261	307	655	710	200	655	730	450	159	85	54
2	64	320	340	757	737	220	744	*613	986	119	98	265
3	66	705	390	737	730	315	895	452	925	105	35	318
4	66	1,640	385	687	750	240	858	428	757	49	80	258
5	65	1,290	355	565	813	255	835	452	*625	138	76	194
6	55	994	488	559	828	282	1,140	380	511	161	111	116
7	43	828	589	530	740	309	1,120	363	369	236	107	44
8	327	1,140	535	460	625	249	962	345	360	77	103	163
9	390	970	535	425	585	268	805	328	381	89	66	71
10	212	771	655	422	571	358	704	211	212	127	50	63
11	183	667	571	395	582	407	595	262	285	250	122	63
12	277	577	494	300	547	835	523	527	213	193	122	54
13	192	472	422	370	400	835	511	590	211	62	183	49
14	225	461	355	406	370	744	637	506	126	196	259	29
15	285	583	265	395	360	601	806	431	101	102	210	*69
16	168	619	280	*517	*294	553	730	409	280	65	117	68
17	126	842	350	535	284	547	637	305	171	*73	404	64
18	154	771	300	698	315	488	559	340	202	72	462	55
19	119	673	360	764	308	517	472	439	270	38	348	71
20	110	545	395	737	345	505	444	359	100	54	183	77
21	41	455	697	902	360	583	450	409	86	98	133	129
22	171	370	1,120	675	320	631	372	479	48	71	148	205
23	117	428	948	828	260	704	353	440	252	56	86	118
24	91	456	771	925	265	*842	326	318	105	62	45	103
25	295	483	692	720	355	764	315	340	88	60	173	86
26	*428	529	613	757	288	764	484	527	89	51	76	80
27	309	540	490	1,580	276	842	649	468	124	51	65	57
28	860	420	480	1,820	279	858	828	391	83	97	84	35
29	344	405	417	1,620	258	799	1,000	326	54	83	65	56
30	251	*385	472	1,050	-	737	880	279	273	69	52	99
31	206	-	619	1,800	-	704	-	336	-	42	32	-
Total	5,708	19,600	15,670	22,571	13,555	16,956	20,290	12,791	8,737	3,085	4,120	3,153
Mean	184	653	505	728	467	547	676	413	291	99.5	133	105
(f)	0	0	0	0	0	0	0	0	0	0	0	0

Adjusted for diversion

Mean	184	653	505	728	467	547	676	413	291	99.5	133	105
Cfs	0.925	3.28	2.54	3.66	2.35	2.75	3.40	2.08	1.46	0.500	0.668	0.528
In.	1.07	3.66	2.93	4.22	2.53	3.17	3.79	2.39	1.63	0.58	0.77	0.59

Observed

Adjusted

Calendar year 1951:	Max	1,640	Min	31	Mean	361	Mean	396	Cfs	1.99	In.	27.00
Water year 1951-52:	Max	1,820	Min	29	Mean	400	Mean	400	Cfs	2.01	In.	27.33

Peak discharge (base, 1,300 cfs).--Nov. 4 (6:30 to 7:30 a.m.) 1,780 cfs (4.72 ft); Jan. 27 (6 p.m.) 1,940 cfs (4.90 ft).

\* Discharge measurement made on this day.

† Diversion, in millions of gallons, from 97 sq mi in Ware River basin for supply of Boston-metropolitan district, furnished by Metropolitan District Commission.

Note.--Stage-discharge relation affected by ice Nov. 20, 21, 27-29, Dec. 15-20, 27, 28, Jan. 7-9, 11, 12, 22, 25, Jan. 30 to Feb. 1, Feb. 7-9, 13-15, 18, 22-25, Mar. 1-3.

Hop Brook near New Salem, Mass.

Location.--Lat 42°28'42", long. 72°20'05", on right bank 1.5 miles upstream from mouth and  $\frac{1}{2}$  miles south of New Salem, Franklin County.

Drainage area.--3.39 sq mi.

Records available.--November 1947 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 725 ft (from topographic map).

Extremes.--Maximum discharge during year, 118 cfs Nov. 3 (gage height, 2.54 ft), from rating curve extended above 42 cfs by logarithmic plotting; minimum, 0.15 cfs July 26, 27.

1947-52: Maximum discharge, 152 cfs Mar. 31, 1951 (gage height, 2.71 ft), from rating curve extended above 42 cfs by logarithmic plotting; maximum gage height, 2.94 ft Feb. 7, 1951 (backwater from ice); minimum discharge, 0.01 cfs Aug. 10-12, 21-29, 1949.

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

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Backwater from debris July 19)

Oct. 1 to July 10

July 11 to Sept. 30

0.6	0.35	1.3	6.6	0.5	0.19	1.1	3.6
.7	.70	1.4	9.5	.6	.44	1.2	4.8
.8	1.25	1.7	24	.8	1.25	1.3	6.6
1.0	2.8	2.0	45	.9	1.8		
1.2	4.9	2.2	65				

Note.--Same as preceding table above 1.3 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.81	8.8	6.3	14.2	16	4.1	13	12	44	2.05	2.9	12.2
2	.81	6.6	6.9	16.0	15.5	3.8	30	10	28	1.5	1.3	7.6
3	.87	62	6.3	13.1	13.6	4.2	25	8.8	14.5	1.15	1.09	2.15
4	.92	26	6.3	10.4	23	4.5	27	7.9	11	4.8	1.89	1.45
5	.81	18.0	14.6	12	22	7.0	60	7.2	18.0	3.6	1.18	1.10
6	.66	14.0	14.2	8.9	17.0	6.6	54	6.8	10.0	1.6	1.8	.96
7	3.0	36	8.9	8.2	13.6	6.8	35	7.0	9.5	1.08	*1.65	.76
8	19.8	20.0	*8.6	8.0	11.8	5.4	23	6.4	7.2	.87	1.02	.71
9	3.9	18.5	15.5	7.5	12.2	4.8	17	5.8	6.1	.87	.84	.67
10	2.7	15.5	11.5	7.2	9.5	4.5	*15	5.6	5.8	24	3.6	.63
11	*8.9	*13.6	8.3	6.6	12.6	10	13	5.4	5.0	8.9	2.6	.56
12	12.1	11.8	7.5	6.4	9.0	25	11	*25	4.7	3.5	2.3	.44
13	4.6	10.8	6.4	6.3	7.2	15	10	12.9	4.3	2.1	14.6	.38
14	3.8	15.0	6.1	6.3	6.2	10	22	8.9	4.0	1.55	2.5	.41
15	3.5	19.0	6.6	9.0	6.1	8.3	15	9.6	3.5	1.22	1.4	.63
16	3.3	18.5	6.2	10.3	6.1	7.4	12	9.0	2.8	1.03	2.3	.81
17	3.0	18.0	5.8	8.1	6.2	6.8	10	7.2	3.5	.85	8.3	.51
18	2.9	12.2	8.0	*21	6.0	6.4	9.0	10.0	3.7	.78	2.2	*.44
19	2.8	10.0	12	11.3	6.0	6.2	7.6	7.5	2.7	.90	1.4	6.0
20	2.6	8.9	7.0	15.7	5.7	12	7.0	8.5	2.2	.67	1.11	2.15
21	2.6	8.0	40	12.7	5.5	11	6.4	16.2	1.95	.69	1.00	1.14
22	2.7	7.5	21	13	5.2	10	6.0	11.6	2.15	*.68	1.13	.94
23	2.6	8.0	13.1	29	5.0	18	5.8	7.8	1.85	.41	.81	1.17
24	3.9	9.5	10.8	15	4.6	15	5.6	6.3	1.55	.36	.61	1.25
25	29	7.5	9.7	12	4.4	13	5.6	12.4	9.8	.28	.50	1.06
26	7.2	9.6	9.0	35	4.4	25	15	12.0	2.7	.23	.44	1.00
27	5.8	7.9	8.0	50	4.4	19	10	7.5	2.0	6.2	.38	1.3
28	7.2	6.8	7.7	34	4.3	*16	40	5.9	1.55	2.1	.35	.90
29	6.8	6.3	8.3	23	4.1	15	23	5.8	6.5	1.04	.35	.76
30	5.2	6.1	9.6	18	-	14	15	5.6	3.8	.63	.35	.67
31	4.9	-	13.1	17.5	-	13	-	5.6	-	6.3	.38	-
Total	159.68	440.4	323.3	465.7	267.2	327.8	548.0	281.2	224.35	81.94	61.28	50.75
Mean	5.15	1.7	10.4	15.0	9.21	10.6	18.3	9.07	7.48	2.64	1.98	1.69
Cfsm	1.52	4.34	3.07	4.42	2.72	3.13	5.40	2.68	2.21	0.779	0.584	0.499
In.	1.75	4.83	3.55	5.11	2.93	3.60	6.01	3.08	2.46	0.90	0.67	0.56

Calendar year 1951: Max 70 Min 0.56 Mean 8.15 Cfsm 2.40 In. 32.64  
Water year 1951-52: Max 62 Min 0.23 Mean 8.83 Cfsm 2.60 In. 35.45

Peak discharge (base, 72 cfs).--Oct. 25 (2 a.m.) 107 cfs (2.48 ft); Nov. 3 (12 m. to 1 p.m.) 118 cfs (2.54 ft); Nov. 7 (4:30 p.m.) 80 cfs (2.31 ft); Apr. 5 (time unknown) 86 cfs (2.35 ft); Apr. 28 (time unknown) 81 cfs (2.32 ft); June 1 (9 to 9:30 p.m.) 86 cfs (2.35 ft); July 10 (4 p.m.) 108 cfs (2.49 ft); Sept. 1 (8 p.m.) 74 cfs (2.27 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Mar. 3 to May 12, June 4, 10-16; discharge estimated on basis of recorded range in stage, 3 discharge measurements, weather records, and records for Moss Brook at Wendell Depot and for stations on other nearby streams. Stage-discharge relation affected by ice Dec. 14-22, 25-28, Jan. 5, 7, 8, 12, 22, 24, 25, 29, 30, Feb. 1, Feb. 12 to Mar. 2.

## East Branch Swift River near Hardwick, Mass.

Location.--Lat 42°23'36", long. 72°14'21", on left bank 100 ft above spillway of regulating dam and 4.6 miles northwest of Hardwick, Worcester County.

Drainage area.--43.7 sq mi.

Records available.--January 1937 to September 1952.

Gage.--Water-stage recorder and concrete spillway. Datum of gage is 504.70 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 69.2 cfs.

Extremes.--Maximum discharge during year, 547 cfs Jan. 27 (gage height, 20.51 ft); minimum, 1.7 cfs July 26.

1937-52: Maximum discharge, 6,780 cfs Sept. 21, 1938, average of slope-area and contracted-opening determinations; maximum gage height, 22.49 ft June 25, 1944; no flow Aug. 7, 14-21, 1939 (result of regulation by construction operations), Aug. 26-28, 1949.

Remarks.--Records good except those for periods of backwater from Quabbin Reservoir, which are fair.

Rating table, water year 1951-52, except periods of backwater from Quabbin Reservoir (gage height, in feet, and discharge, in cubic feet per second)

19.2	1.6	19.6	67
19.3	7.2	20.0	239
19.4	18	20.5	540
19.5	36		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	65	71	153	141	59	154	123	74	21	13	17
2	8.0	78	69	179	147	56	206	96	205	18	11	75
3	8.8	196	69	190	150	56	245	87	176	15	8.8	75
4	9.3	398	67	164	158	56	224	79	111	16	7.6	50
5	9.8	258	82	144	186	69	222	70	92	22	12	33
6	9.8	172	136	130	191	67	323	66	79	17	25	24
7	13	155	150	111	165	65	281	65	79	14	23	19
8	66	229	132	94	133	64	218	60	63	11	19	15
9	82	200	132	90	128	61	172	55	54	9.5	15	12
10	59	150	166	90	117	57	142	50	46	16	15	11
11	50	117	142	86	115	86	128	50	40	40	17	10
12	62	99	115	78	119	170	112	89	40	39	20	9.8
13	62	86	94	78	94	183	102	135	33	28	91	8.8
14	51	88	76	78	76	164	138	106	26	20	96	8.8
15	40	136	66	84	68	134	195	85	25	14	59	8.0
16	36	153	67	115	63	117	162	76	21	12	44	8.4
17	34	179	62	128	73	105	128	66	21	11	100	8.0
18	32	159	76	164	83	96	108	69	28	8.7	102	7.2
19	30	126	97	190	73	105	92	69	24	8.0	69	35
20	27	101	105	179	66	109	78	67	20	6.8	44	88
21	24	84	182	200	68	117	69	80	15	5.7	31	65
22	23	73	339	155	69	130	81	102	15	5.3	30	42
23	23	73	272	206	70	150	60	85	14	4.7	23	32
24	27	88	200	234	66	186	58	68	12	3.8	18	26
25	89	94	153	170	63	173	63	70	22	2.8	15	24
26	111	103	138	196	61	179	122	90	21	2.3	13	23
27	86	109	113	472	62	217	143	89	17	5.4	11	24
28	67	94	67	484	62	221	166	71	14	7.2	10	21
29	64	84	94	355	61	198	239	60	17	6.4	8.8	19
30	61	75	103	226	-	169	185	53	23	4.4	8.8	17
31	54	-	132	162	-	158	-	50	-	7.0	7.2	-
Total	1,326.7	4,032	3,817	5,385	2,926	3,783	4,594	2,379	1,427	402.0	987.2	816.0
Mean	42.8	134	123	174	101	122	153	76.7	47.6	13.0	31.2	27.2
Cfsm	0.979	3.07	2.81	3.98	2.31	2.79	3.50	1.76	1.09	0.297	0.714	0.622
In.	1.13	3.43	3.25	4.58	2.49	3.22	3.91	2.02	1.21	0.34	0.82	0.69
Calendar year 1951: Max	466				Min 6.0	Mean 85.0	Cfsm 1.95	In. 26.40				
Water year 1951-52: Max	464				Min 2.3	Mean 87.0	Cfsm 1.99	In. 27.09				

Peak discharge (base, 350 cfs).--Nov. 4 (6 to 8 a.m.) 434 cfs (20.34 ft); Jan. 27 (7 to 12 p.m.) 547 cfs (20.51 ft).

Notg.--Backwater from Quabbin Reservoir Jan. 29 to Feb. 26, Mar. 24 to July 18.

Swift River at West Ware, Mass.

Location.--Lat 42°16'04", long. 72°19'59", on left bank at West Ware, Hampshire County, 1.4 miles downstream from Quabbin Reservoir and 3½ miles east of Belchertown.

Drainage area.--188 sq mi, includes 1.6 sq mi drained by Beaver Brook, flow of which is diverted from Ware River basin. Prior to January 1937, 186 sq mi.

Records available.--July 1910 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 365.18 ft above mean sea level, datum of 1929. Prior to Aug. 25, 1912, chain gage at site 400 ft upstream at same datum.

Average discharge.--40 years (1912-52), 304 cfs (adjusted for change in contents in Quabbin Reservoir and for diversion to and from Quabbin Reservoir).

Extremes.--Maximum discharge during year, 817 cfs June 2 (gage height, 5.52 ft); minimum daily, 40 cfs Sept. 14.

1910-52: Maximum discharge, 7,590 cfs Mar. 19, 1936 (gage height, 15.00 ft); minimum, 2.5 cfs Sept. 20, 1940; minimum daily, 15 cfs Sept. 20, 1940.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow completely regulated since August 1939 by Quabbin Reservoir (see p. 302).

Revisions (water years).--W 401: Drainage area. W 451: 1916. W 871: 1919. W 1031: 1944 (changes in reservoir contents and adjusted figures only).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.0	36	4.0	399
2.2	54	5.0	663
2.5	93	5.5	810
3.0	182		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	99	53	44	381	282	425	596	445	168	95	45
2	92	97	43	111	356	255	459	539	729	142	54	104
3	93	82	107	101	325	329	475	458	700	115	41	92
4	93	45	100	102	438	327	484	414	644	57	102	92
5	93	109	101	56	445	336	515	460	633	88	96	91
6	52	98	100	43	449	334	574	411	585	55	94	52
7	43	100	101	108	454	332	706	407	518	138	96	41
8	110	101	55	99	442	278	703	364	432	118	95	100
9	98	98	43	124	398	248	674	358	a480	104	53	93
10	96	54	109	146	374	323	633	264	a420	152	43	92
11	97	41	99	148	*454	338	617	267	401	220	107	91
12	42	41	99	85	460	351	528	418	364	149	101	*90
13	62	*106	98	58	429	347	492	431	314	118	78	51
14	41	99	95	*167	410	351	652	429	226	184	96	40
15	106	99	55	225	387	296	507	421	177	139	95	102
16	95	101	41	229	*320	269	383	414	256	122	59	92
17	96	56	109	228	338	343	360	324	248	*108	49	92
18	96	42	99	241	476	*339	358	323	279	96	106	91
19	96	99	100	186	427	346	296	379	246	62	96	100
20	52	98	100	170	404	353	276	388	218	58	96	52
21	56	99	108	265	395	352	349	411	131	112	95	41
22	97	41	56	262	305	297	*320	413	94	95	*96	101
23	96	107	44	280	326	286	310	380	170	95	52	92
24	96	57	110	280	294	377	288	307	152	98	42	92
25	102	43	43	281	365	383	296	309	185	96	103	92
26	97	*111	110	243	354	379	327	434	179	56	93	93
27	52	99	112	250	352	394	332	*422	185	57	92	51
28	41	97	99	356	346	401	582	383	108	114	91	41
29	107	96	a55	389	339	353	641	377	90	95	93	a100
30	96	98	a44	a90	300	230	647	301	210	82	52	a92
31	97	-	101	368	-	406	-	339	-	91	41	-
Total	2,590	2,495	2,589	6,053	11,223	10,235	14,209	12,121	9,819	3,382	2,502	2,398
Mean	83.5	83.2	83.5	195	387	330	474	391	327	109	80.7	79.9
(†)	+171	+510	+449	+655	+89.3	+195	+309	+55.4	-11.0	-3.8	+112	+67.8

Adjusted for diversion and change in reservoir contents

Year	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Mean	254	593	532	751	446	525	782	446	316	105	193	148
Cfsm	1.35	3.15	2.83	3.99	2.37	2.79	4.16	2.37	1.68	0.559	1.03	0.787
W.	1.56	3.52	3.27	4.60	2.56	3.22	4.64	2.74	1.88	0.65	1.18	0.88

Observed

Adjusted

Calendar year 1951:	Max	650	Min	35	Mean	120	Mean	391	Cfsm	2.08	In.	28.22
Water year 1951-52:	Max	729	Min	40	Mean	218	Mean	424	Cfsm	2.26	In.	30.70

\* Discharge measurement made on this day.

† Change in contents in Quabbin Reservoir (adjusted for diversion from Ware River; none during water year), diversion to Wachusett Reservoir, and diversion to Chicopee Valley Aqueduct, equivalent in cubic feet per second.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, typical regulation pattern, and records of release from Quabbin Reservoir.

## Quaboag River at West Brimfield, Mass.

Location.--Lat 42°10'31", long. 72°15'46", on left bank 15 ft upstream from site of former highway bridge at West Brimfield, Hampden County, 0.4 mile upstream from Blodgett Mill Brook, and  $3\frac{1}{2}$  miles northeast of Palmer.

Drainage area.--151 sq mi.

Records available.--August 1909 to September 1952.

Gage.--Water-stage recorder. Concrete control since June 15, 1937. Datum of gage is 377.36 ft above mean sea level, datum of 1929. Prior to Aug. 19, 1912, staff gage on right bank at upstream side of former highway bridge and Aug. 19, 1912, to May 30, 1923, water-stage recorder at downstream end of bridge pier at same datum.

Average discharge.--40 years (1912-52), 237 cfs.

Extremes.--Maximum discharge during year, 973 cfs Jan. 28 (gage height, 4.59 ft); maximum gage height, 4.83 ft Dec. 21 (ice jam); minimum daily discharge, 38 cfs Oct. 4-6. 1909-52: Maximum discharge, 8,470 cfs Sept. 21, 1938 (gage height, 11.8 ft, from floodmarks), by slope-area determination; minimum daily, 7.8 cfs Oct. 11, 19, 1930.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow by mill above station; regulation much greater prior to 1938.

Revisions (water years).--W 451: 1916. W 711: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	38	3.5	321
2.9	98	4.0	585
3.2	192	5.0	1,280

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	188	367	530	770	225	530	514	428	114	52	80
2	43	212	345	580	756	190	519	488	591	106	48	139
3	40	471	336	580	723	212	504	456	615	98	46	114
4	38	563	316	540	730	208	477	414	639	89	45	106
5	38	585	331	510	723	220	519	393	*639	89	48	103
6	38	585	393	500	684	240	621	367	585	86	59	95
7	43	672	388	450	664	270	621	351	530	72	67	89
8	138	762	372	400	627	265	621	302	488	73	61	84
9	109	736	398	440	560	261	603	298	445	69	59	77
10	106	742	393	400	560	261	574	274	403	77	68	75
11	117	697	398	370	550	416	525	270	341	106	93	71
12	140	645	388	400	470	568	498	372	312	91	98	65
13	144	603	350	380	290	645	472	367	293	86	120	61
14	140	580	330	357	450	645	519	341	265	80	114	57
15	134	585	300	367	430	597	525	346	223	77	109	*55
16	128	580	270	*408	410	574	504	326	192	73	118	57
17	125	597	270	400	385	552	482	312	192	*67	192	53
18	122	563	290	488	330	536	456	316	240	65	160	50
19	114	541	310	509	280	536	424	307	215	61	140	71
20	106	504	350	558	330	530	382	298	181	57	131	75
21	101	466	520	558	336	552	362	326	174	53	122	61
22	96	445	650	480	315	563	346	302	167	55	128	55
23	93	424	630	670	298	603	316	298	156	52	112	55
24	84	440	600	670	280	*645	298	283	144	52	103	55
25	179	429	570	530	265	645	298	293	134	43	93	53
26	174	445	530	742	252	645	388	321	125	45	89	52
27	174	408	500	910	244	639	393	298	112	51	80	53
28	174	350	460	955	212	615	545	283	106	71	77	50
29	187	405	450	940	227	603	580	279	113	55	73	50
30	170	*390	450	860	-	574	541	293	131	48	67	48
31	163	-	490	810	-	552	-	298	-	50	65	-
Total	3,479	15,623	12,748	17,243	13,172	14,577	14,443	10,356	9,179	2,211	2,837	2,179
Mean	112	521	411	556	454	470	481	334	308	71.3	91.5	70.3
Cfsm	0.742	3.45	2.72	3.68	3.01	3.11	3.19	2.21	2.03	0.472	0.606	0.466
In.	0.86	3.85	3.14	4.25	3.24	3.59	3.56	2.55	2.26	0.54	0.70	0.52
Calendar year 1951: Max	1,060			Min 38		Mean 302		Cfsm 2.00		In. 27.15		
Water year 1951-52: Max	966			Min 38		Mean 322		Cfsm 2.13		In. 29.06		

Peak discharge (base, 840 cfs).--Jan. 28 (5 to 6 p.m.) 973 cfs (4.59 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 28-30, Dec. 13 to Jan. 13, Jan. 17, 22-25, Jan. 29 to Feb. 1, Feb. 9-20, 24, Mar. 1, 2, 5 (no gage-height record Dec. 14-20).



## Chicopee River at Indian Orchard, Mass.

**Location.**--Lat 42°09'38", long. 72°30'52", on left bank 1,000 ft downstream from West Street Bridge at Indian Orchard, Hampden County, and 1.1 miles upstream from Fuller Brook.

**Drainage area.**--688 sq mi.

**Records available.**--August 1928 to September 1952. Published as "at Bircham Bend" prior to November 1938.

**Gage.**--Water-stage recorder. Altitude of gage is 125 ft (from topographic map). Prior to Nov. 1, 1938, at site 1½ miles downstream at different datum.

**Average discharge.**--24 years, 1,072 cfs (adjusted to present drainage area and for storage and diversions).

**Extremes.**--Maximum discharge during year, 4,500 cfs Jan. 28 (gage height, 9.02 ft); minimum daily, 46 cfs July 20.

1928-52: Maximum discharge, 45,200 cfs Sept. 21, 1938, by computation of flow over dam; minimum daily, 16 cfs several times in 1929-31.

**Note.**--The maximum discharge for the water year 1939, not previously published has been estimated as 4,600 cfs Apr. 7, 1939.

**Remarks.**--Records excellent except those for period of backwater from aquatic vegetation, which are good. Diversion since 1941 from 186 sq mi in Swift River basin and as needed during period Oct. 15 to June 14 of each year since 1931 from 97 sq mi in Ware River basin for Boston metropolitan district and, since 1950, for city of Chicopee. Diversion from Ludlow Reservoir for Springfield and, prior to 1952, for Chicopee. No diversion during 1952 water year from Ware River basin. Flow regulated by powerplants above station, and by Quabbin Reservoir on Swift River since 1939 (see p. 302) and smaller reservoirs.

**Revisions.**--W 711: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1934, superseding figures published in Water-Supply Paper 756, are given herewith:

July 21, 1934..... 89

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
July.....	891	31	426	0.606	0.70
Water year 1933-34....	5,660	31	1,234	1.76	23.85

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	249	739	962	1,760	2,420	967	1,970	2,500	1,570	837	286	207
2	330	838	866	2,000	2,390	825	2,020	2,130	3,050	518	199	558
3	506	1,300	1,130	1,980	2,320	1,120	2,280	1,870	3,090	523	227	784
4	238	3,080	1,040	1,780	2,510	1,070	2,290	1,570	2,630	380	277	610
5	293	2,720	1,050	1,600	2,640	1,060	2,270	1,680	2,540	287	291	634
6	212	2,160	1,190	1,470	2,550	1,090	3,100	1,510	2,200	470	341	407
7	179	1,910	1,320	1,510	2,390	1,190	3,260	1,410	1,860	470	487	240
8	536	2,510	1,260	1,240	2,190	1,170	2,970	1,360	1,630	516	329	358
9	922	2,320	1,180	1,250	2,020	972	2,690	1,200	1,550	342	164	421
10	745	1,910	1,490	1,280	1,870	1,200	2,430	1,120	1,470	451	375	395
11	574	1,710	1,390	1,180	2,000	1,520	2,240	853	1,180	846	355	180
12	616	1,670	1,270	1,060	1,970	2,800	1,920	1,750	1,190	858	407	388
13	533	1,390	1,160	988	1,570	2,730	1,810	1,900	1,030	514	505	167
14	490	1,380	976	1,200	1,390	2,470	2,170	1,720	882	472	586	199
15	573	1,590	813	*1,160	1,460	2,130	2,620	1,540	630	549	606	516
16	663	1,620	678	1,600	1,300	1,780	2,200	1,530	866	*419	489	237
17	510	1,880	*827	1,530	1,220	1,860	1,940	1,300	912	393	766	*318
18	433	1,800	882	1,860	1,440	1,760	1,770	1,140	1,030	419	1,060	306
19	476	1,750	1,080	2,090	1,430	1,760	1,550	1,490	925	280	901	362
20	364	1,470	1,100	1,910	*1,300	1,810	1,380	1,400	897	46	*714	404
21	328	1,310	1,750	2,380	1,430	1,960	1,460	1,400	552	389	495	349
22	327	995	2,980	1,900	1,250	2,000	1,350	1,500	482	309	422	442
23	469	1,200	2,370	2,290	1,210	2,030	1,270	1,410	542	322	449	538
24	417	1,190	2,090	2,630	1,060	2,560	1,220	1,210	819	305	283	389
25	*696	1,250	1,820	1,970	1,270	*2,460	1,100	1,130	544	258	412	490
26	882	1,430	1,770	2,210	1,210	2,320	1,440	1,670	555	308	405	392
27	736	*1,490	1,470	3,460	1,140	2,360	1,760	1,560	560	156	387	286
28	558	1,260	1,290	4,240	1,150	2,380	2,480	1,360	453	165	308	85
29	812	1,110	1,290	3,970	1,090	2,240	3,420	1,210	358	322	284	345
30	660	1,130	1,250	2,990	-	2,040	*2,930	1,210	684	318	203	295
31	621	-	1,650	2,510	-	2,060	-	1,210	-	305	276	-
Total	15,768	48,112	41,394	60,998	49,190	55,674	63,310	45,903	36,701	12,747	13,289	11,102
Mean	509	1,604	1,335	1,968	1,696	1,796	2,110	1,481	1,223	411	429	370
(+)	+486	+1,357	+1,208	+1,499	+146	+537	+807	+152	-28	-8	+324	+189

Adjusted for diversion and change in reservoir contents

Mean	690	2,127	1,786	2,527	1,754	1,997	2,422	1,538	1,213	408	550	443
Cfsm	1.00	3.08	2.60	3.67	2.55	2.30	3.32	2.24	1.76	0.595	0.799	0.644
In.	1.16	3.45	2.99	4.23	2.75	3.35	3.83	2.58	1.97	0.68	0.92	0.72

	Observed			Adjusted		
Calendar year 1951:	Max	3,700	Min	179	Mean	1,083
Water year 1951-52:	Max	4,240	Min	46	Mean	1,241
					Mean	1,452
					Cfsm	2.02
					Cfsm	2.11
					In.	27.47
					In.	28.73

\* Discharge measurement made on this day.

† Change in contents in Quabbin Reservoir (adjusted for diversion from Ware River; none during water year), diversion to Wachusett Reservoir and city of Chicopee, change in contents in Ludlow Reservoir, and diversion from Ludlow Reservoir, in millions of cubic feet.

**Note.**--Backwater from aquatic vegetation June 21 to Sept. 30.

## Westfield River at Knightville, Mass.

Location.--Lat 42°17'16", long. 72°51'53", on left bank at Knightville, Hampshire County, 0.2 mile downstream from Knightville Dam, 0.2 mile upstream from Sykes Brook, 2.4 miles upstream from Middle Branch, and 3.5 miles north of Huntington.

Drainage area.--162 sq mi.

Records available.--August 1909 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 461.25 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Jan. 11, 1935, chain gage at site 0.5 mile upstream at different datum. Jan. 11, 1935, to May 20, 1940, water-stage recorder at site 700 ft upstream at datum 10.57 ft higher. May 21 to Dec. 19, 1940, staff gage at site 700 ft upstream at datum 18.75 ft higher.

Average discharge.--43 years, 321 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 3,330 cfs June 6 (gage height, 6.02 ft; minimum, 4.2 cfs Feb. 17; minimum daily, 29 cfs Aug. 31.  
1909-52: Maximum discharge, 37,900 cfs Sept. 21, 1938 (gage height, 29.58 ft, from floodmarks, site and datum then in use), from rating curve extended above 3,800 cfs on basis of slope-area determinations at gage heights 24.07 and 29.58 ft; minimum, 0.6 cfs Aug. 11, 1941; minimum daily, 4 cfs Aug. 10, 1913.  
Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
-	1910	Jan. 22, 1910	†8,120	†9.8
351,415.....	1913	Mar. 27, 1913	6,860	**8.9
381.....	1914	Mar. 28, 1914	5,680	†8.0
401,541.....	1915	Aug. 4, 1915	8,260	†9.9
431.....	1916	Feb. 26, 1916	3,940	†6.6
451.....	1917	Mar. 28, 1917	3,230	†6.0
471.....	1918	Mar. 23, 1918	2,140	†4.9
501.....	1919	May 22, 1919	7,210	†9.4
521.....	1921	Dec. 14, 1920	6,730	†9.0
541.....	1922	May 19, 1922	5,710	†7.6
561.....	1923	Apr. 5, 1923	4,480	†6.7
601.....	1925	July 27, 1925	8,140	†9.4
621.....	1926	Apr. 25, 1926	5,710	†7.6
641.....	1927	Mar. 14, 1927	4,870	†7.0
681.....	1929	Apr. 21, 1929	5,170	†7.2
696.....	1930	Mar. 26, 1930	3,050	†5.6
711.....	1931	May 23, 1931	8,950	†10.0
726.....	1932	Apr. 1, 1932	4,630	†6.8
741.....	1933	Sept. 16, 1933	15,800	†15.1
781.....	1935	Jan. 10, 1935	4,900	†7.0
-	1942	Mar. 22, 1942	†3,500	6.11

\*\* From floodmark.

† From graph based on gage readings.

‡ Not previously published.

Remarks.--Records excellent except those for periods of ice effect or shifting control, which are good. Flow regulated by Knightville Reservoir since 1941 (see p. 302).

Revisions (water years).--W 415: 1909, 1911 calendar years. W 1001: 1941-43. Revised figures of discharge, in cubic feet per second, for the water years 1910, 1912, 1914, and 1915, superseding figures published in Water-Supply Papers 281, 321, 381, 401, 415, and 1105, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1910		1912		1914	
Jan. 22.....	6,860	Mar. 16.....	3,020	Mar. 29.....	1,890
23.....	3,460	17.....	2,080		
24.....	2,580			1915	
		1914		Feb. 25.....	5,030
1912		Mar. 27.....	2,380	26.....	1,980
Mar. 15.....	6,460	Mar. 28.....	4,900		

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
January 1910.....	6,860	45	657	4.06	4.67
Water year 1909-10.....	6,860	8.0	308	1.90	25.83
Calendar year 1910.....	6,860	8.0	309	1.91	25.94
March 1912.....	6,460	245	1,090	6.73	7.76
Water year 1911-12.....	6,460	13	385	2.38	32.37
Calendar year 1912.....	6,460	13	360	2.22	30.27
March 1914.....	4,900	240	796	4.91	5.66
Water year 1913-14.....	4,900	11	364	2.25	30.46
February 1915.....	5,030	130	626	3.86	4.02
Water year 1914-15.....	5,030	12	256	1.58	21.46

## Westfield River at Knightville, Mass.--Continued

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	26	4.0	750
2.3	59	4.5	1,170
2.6	114	5.0	1,730
3.0	225	6.0	3,290
3.5	440		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	321	288	456	490	b155	916	430	277	119	62	99
2	56	371	326	562	556	b140	1,480	343	73	88	52	1,210
3	56	313	352	539	574	215	2,280	322	874	77	45	877
4	56	1,550	330	430	592	225	1,760	280	2,660	77	39	209
5	58	2,850	659	371	1,050	154	887	243	3,060	116	38	136
6	54	1,140	1,260	352	948	184	357	229	3,110	86	71	104
7	70	490	959	b345	645	193	932	232	2,190	67	124	80
8	1,200	1,800	617	b240	484	190	2,540	209	473	58	80	69
9	500	2,180	645	b260	517	184	3,020	187	395	58	58	59
10	215	773	853	339	395	178	3,000	170	352	342	55	56
11	238	592	586	257	390	478	2,930	202	304	728	128	52
12	1,280	512	446	b220	b350	1,180	2,040	996	280	281	101	47
13	613	425	342	273	b260	788	855	1,810	243	146	400	44
14	317	430	269	269	b245	550	1,570	1,130	209	104	199	42
15	239	863	269	296	b275	410	1,440	556	190	*77	*110	47
16	199	678	269	471	b250	334	1,010	580	170	67	80	*62
17	176	680	261	381	241	339	855	435	161	58	291	67
18	167	556	257	603	278	304	765	528	257	52	170	52
19	167	439	285	594	212	348	687	484	181	47	95	90
20	156	357	261	500	296	326	598	405	156	49	69	204
21	143	304	456	673	284	395	500	772	131	49	56	112
22	141	280	765	386	252	528	420	885	121	49	55	79
23	146	300	900	673	216	586	385	539	121	54	49	67
24	143	462	580	608	b220	780	339	415	112	40	45	70
25	974	495	425	371	250	631	343	675	152	39	*59	69
26	500	381	395	585	206	*722	722	1,120	156	38	38	64
27	317	343	b305	1,180	199	1,020	478	645	108	43	36	65
28	273	254	b270	1,660	215	964	740	456	91	59	35	62
29	385	*254	317	1,290	212	701	*1,580	376	97	55	33	56
30	277	265	322	b535	-	838	729	446	170	42	31	49
31	236	-	415	b435	-	750	-	410	-	36	22	-
Total	9,410	20,658	14,664	16,154	11,102	14,590	36,178	16,510	16,874	3,185	2,701	4,099
Mean	304	689	473	521	383	471	1,206	533	562	103	87.1	137
(+)	+0.3	+8.8	+4.5	+0.2	-4.5	-4.2	-4.1	-0.4	-0.5	-0.2	0	0

Adjusted for change in reservoir contents

	Mean	Cfem	In.	Mean	Cfem	In.	Mean	Cfem	In.	Mean	Cfem	In.
Calendar year 1951:	304	692	475	521	381	469	1,204	532	562	103	87.1	137
Water year 1951-52:	1.88	4.27	2.93	3.22	2.35	2.90	7.43	3.28	3.47	0.636	0.538	0.846
	2.16	4.77	3.38	3.71	2.54	3.34	6.29	3.79	3.87	0.73	0.62	0.94
				Observed				Adjusted				
Calendar year 1951: Max				3,880	Min	45	Mean	405	Mean	405	Cfem	2.50
Water year 1951-52: Max				3,110	Min	29	Mean	454	Mean	454	Cfem	2.80
											In.	33.95
											In.	38.14

\* Discharge measurement made on this day.

† Change in contents in Knightville Reservoir, in millions of cubic feet.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used June 7 to Sept. 20.

## Sykes Brook at Knightville, Mass.

Location.--Lat 42°17'27", long. 72°52'15", on right bank 200 ft downstream from bridge on State Highway 112 at Knightville, Hampshire County, 0.4 mile upstream from mouth, 0.4 mile west of Knightville Dam, and 3.5 miles north of Huntington.

Drainage area.--1.64 sq mi.

Records available.--June 1945 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 641.40 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 2.61 cfs.

Extremes.--Maximum discharge during year, 58 cfs Apr. 5 (gage height, 2.52 ft); maximum gage height, 3.045 ft Jan. 31 (backwater from ice); minimum discharge, 0.11 cfs Aug. 27 to Sept. 1.  
1945-52: Maximum discharge, 187 cfs Dec. 31, 1948 (gage height, 3.09 ft), from rating curve extended above 25 cfs; minimum, 0.04 cfs Aug. 27, 28, 1949.

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.05	1.7	3.7
1.2	.13	1.8	6.0
1.3	.28	1.9	9.7
1.4	.53	2.1	20
1.5	1.10	2.3	35
1.6	2.1		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.19	2.8	2.2	3.4	5.2	1.78	11.1	5.0	33	0.78	0.24	4.4
2	.20	2.8	2.6	4.2	4.8	1.72	21	4.3	21	.57	.18	4.3
3	.21	18.8	2.6	5.9	4.6	1.67	15.6	3.8	*10.6	.42	.18	1.37
4	.21	8.3	2.2	5.4	8.8	1.82	13.7	3.4	7.9	1.81	.16	.81
5	.20	5.4	7.8	3.3	9.1	1.72	34	3.2	7.5	2.0	.21	.53
6	.18	4.3	7.4	3.2	6.8	1.72	26	3.0	5.4	.84	.37	.39
7	.90	15.4	4.8	2.9	5.4	1.78	15.1	2.8	4.7	.55	.42	.28
8	5.3	11.9	4.2	2.7	4.6	1.84	11.1	2.6	3.7	.42	.27	.24
9	1.67	7.0	5.4	2.8	4.3	1.67	9.1	2.3	3.2	.45	.22	.22
10	1.05	5.3	4.9	2.4	3.9	1.67	7.9	2.1	2.8	7.6	.48	.27
11	3.6	4.4	4.0	2.3	3.6	11.4	7.1	3.6	2.4	5.3	.47	.19
12	4.6	3.9	3.5	2.2	3.4	10.1	6.0	17.7	2.1	2.2	.55	.16
13	2.2	3.5	3.2	2.2	2.8	6.4	5.3	7.5	1.78	1.32	*3.1	.15
14	1.67	4.2	2.8	2.3	2.9	5.0	10.1	5.3	1.52	.90	.78	.15
15	1.42	4.9	2.5	3.0	3.0	4.4	7.3	5.0	1.37	*.65	.40	.21
16	1.27	4.4	2.5	3.3	2.6	3.8	5.7	4.6	1.18	.50	.51	*.34
17	1.10	4.7	2.7	2.9	2.4	3.3	4.9	3.9	1.77	.39	.70	.26
18	.98	3.7	3.4	4.7	2.4	3.7	4.4	4.6	2.1	.32	.39	.20
19	.87	3.2	2.8	3.7	2.3	3.5	4.0	3.8	1.37	.30	.27	2.4
20	.78	2.9	2.4	4.4	2.2	3.8	3.5	4.3	1.05	.26	.21	1.43
21	.68	2.6	7.6	4.0	2.2	4.4	3.2	6.3	.90	.28	.20	.65
22	.65	2.3	5.8	3.0	2.2	5.2	3.0	4.7	.90	.28	.22	.44
23	.61	2.6	4.5	6.4	2.1	8.2	2.8	3.7	.84	.22	.17	.45
24	1.47	2.8	3.8	4.0	2.1	7.3	2.6	3.2	.75	.19	.14	.45
25	*6.3	2.4	3.4	3.5	2.0	7.4	4.0	7.2	.98	.17	*.12	.40
26	2.6	2.8	3.2	7.0	2.0	10.1	7.1	7.1	.72	.16	.12	.34
27	2.0	2.6	2.9	11.8	1.96	*11.5	4.7	4.7	.65	.31	.11	.36
28	1.96	2.2	2.8	11.3	1.90	9.3	13.8	3.7	.53	.25	.11	.36
29	1.84	*2.1	2.8	7.3	1.84	7.7	10.5	3.3	1.48	.21	.11	.26
30	1.52	2.1	2.9	6.0	-	7.7	6.3	3.4	1.40	.16	.11	.23
31	1.37	-	3.3	5.4	-	8.1	-	5.3	-	.22	.11	-
Total	49.60	146.9	116.9	132.9	103.40	159.49	280.9	143.4	125.59	30.02	11.63	22.09
Mean	1.60	4.90	3.77	4.29	3.57	5.14	9.36	4.63	4.19	0.968	0.375	0.736
Cfsm	0.976	2.99	2.30	2.62	2.18	3.13	5.71	2.82	2.55	0.590	0.229	0.449
In.	1.12	3.33	2.65	3.01	2.34	3.62	6.37	3.25	2.85	0.68	0.26	0.50
Calendar year 1951: Max	40				Min 0.12	Mean 3.08	Cfsm 1.88	In. 25.45				
Water year 1951-52: Max	34				Min 0.11	Mean 3.61	Cfsm 2.20	In. 29.98				

Peak discharge (base, 35 cfs).--Apr. 5 (8 p.m.) 58 cfs (2.52 ft); June 1 (2:15 p.m.) 57 cfs (2.51 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26, Dec. 14-18, 21, 23, 25-29, Jan. 7, 8, 17, 21-26, Jan. 29 to Feb. 2, Feb. 8, 11-16, 18, Mar. 15-16.

## Middle Branch Westfield River at Goss Heights, Mass.

Location.--Lat 42°15'31", long. 72°52'23", on right bank at upstream side of highway bridge at Goss Heights, Hampshire County, 0.35 mile upstream from mouth and 1.7 miles north of Huntington.

Drainage area.--52.6 sq mi.

Records available.--July 1910 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 400.30 ft above mean sea level, datum of 1929. Prior to Sept. 7, 1912, chain gage at same site. Prior to June 25, 1930, at datum 1.00 ft higher.

Average discharge.--42 years, 104 cfs.

Extremes.--Maximum discharge during year, 4,980 cfs June 1 (gage height, 7.06 ft), from rating curve extended above 2,600 cfs on basis of slope-area determination at gage height 8.65 ft and contracted-opening determinations at gage height 10.61 ft; minimum, 6.7 cfs Aug. 30 to Sept. 1. 1910-52: Maximum discharge, 19,900 cfs Sept. 21, 1938 (gage height, 10.61 ft), mean of two contracted-opening determinations; maximum gage height, 13.87 ft Mar. 12, 1936 (ice jam); practically no flow Sept. 3, 22, Oct. 20, 1910, July 30, 1912, Oct. 26, 27, 1914.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some diurnal fluctuation at low flow caused by mill above station.

Revisions (water years).--W 415: 1910-12 calendar years. W 781: 1933(M), drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Jan. 26)

Oct. 1 to Jan. 26

Jan. 27 to Sept. 30

1.1	5.6	2.0	110	0.9	5.8	2.5	325
1.2	12	2.5	230	1.0	9.1	3.0	565
1.3	20	3.0	401	1.1	15	4.0	1,210
1.5	38	4.0	930	1.3	31	5.0	2,040
1.7	62	5.0	1,800	1.6	73	6.0	3,140
				2.0	160		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	121	90	125	205	52	483	*150	2,600	30	16	242
2	12	122	105	200	230	57	934	127	1,030	20	13	465
3	12	1,270	97	170	230	52	656	111	*353	18	11	96
4	11	444	86	135	350	50	588	99	270	20	9.0	59
5	11	242	343	120	440	51	*1,630	89	260	70	8.0	36
6	10	174	407	115	325	49	*1,260	84	200	30	20	26
7	15	714	270	100	257	49	*527	80	220	20	35	21
8	350	574	181	90	200	48	365	73	175	15	18	18
9	116	279	229	100	190	47	321	67	140	14	13	16
10	65	199	240	90	160	46	341	62	120	230	15	14
11	96	164	166	*80	145	250	357	87	95	180	38	13
12	446	139	137	80	125	500	247	858	85	67	26	12
13	161	122	110	80	90	270	217	318	75	40	*110	11
14	101	149	84	75	90	200	518	205	60	28	44	10
15	78	265	86	100	95	170	374	178	55	*21	24	11
16	66	194	84	160	90	155	260	175	45	18	18	*18
17	58	199	75	120	80	140	217	134	50	15	57	16
18	53	150	85	220	70	115	193	157	110	13	42	13
19	*48	122	95	165	80	132	172	134	55	12	23	32
20	45	103	90	170	*75	109	150	131	43	12	17	38
21	40	92	250	150	72	140	125	274	36	12	13	23
22	39	92	280	120	70	211	109	238	35	14	13	18
23	38	94	185	260	66	268	101	152	35	12	12	16
24	40	122	150	170	70	264	89	120	31	10	10	18
25	351	108	120	130	68	238	105	285	35	9.0	*8.7	17
26	147	103	115	320	64	316	241	348	33	9.0	7.9	17
27	101	95	105	916	62	415	157	199	31	11	7.6	18
28	90	75	100	620	58	*329	357	142	28	12	7.3	18
29	116	*85	105	350	54	254	352	116	35	11	7.0	15
30	86	85	100	230	-	248	202	134	50	10	7.0	14
31	75	-	130	200	-	292	-	125	-	9.0	7.0	-
Total	2,888	6,697	4,640	5,961	4,111	5,517	11,648	5,450	6,390	992.0	657.5	1,341
Mean	93.2	223	150	192	142	178	368	176	213	32.0	21.2	44.7
Cfsm	1.77	4.24	2.85	3.65	2.70	3.38	7.38	3.35	4.05	0.608	0.403	0.850
In.	2.04	4.73	3.28	4.21	2.91	3.90	8.24	3.85	4.52	0.70	0.46	0.95

Calendar year 1951: Max 2,380 Min 7.0 Mean 128 Cfsm 2.43 In. 32.99  
Water year 1951-52: Max 2,600 Min 7.0 Mean 154 Cfsm 2.93 In. 39.79

Peak discharge (base, 1,650 cfs).--Nov. 3 (1 p.m.) 2,450 cfs (5.58 ft); Nov. 7 (4 p.m.) 1,930 cfs (5.13 ft); Apr. 5 (11 p.m.) 3,230 cfs (6.07 ft); May 12 (6 a.m.) 1,730 cfs (4.66 ft); June 1 (8 p.m.) 4,980 cfs (7.06 ft); Sept. 1 (10:30 p.m.) 1,790 cfs (4.72 ft).

\* Discharge measurement made on this day.  
Note.--No gage-height record Jan. 7-11, June 4 to July 10, July 13, 14, 24-26, 29-31, Aug. 3-5; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for West Branch Westfield River at Huntington and Westfield River at Knightville. Stage-discharge relation affected by ice Nov. 20-22, Nov. 26 to Dec. 1, Dec. 13 to Jan. 26, Jan. 29 to Feb. 4, Feb. 8 to Mar. 18.

## West Branch Westfield River at Huntington, Mass.

Location.--Lat 42°14'14", long. 72°53'46", on left bank at Huntington, Hampshire County, 0.4 mile downstream from Roaring Brook and 1½ miles upstream from mouth.

Drainage area.--93.7 sq mi.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 388.60 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 186 cfs.

Extremes.--Maximum discharge during year, 5,420 cfs June 1 (gage height, 7.85 ft), from rating curve extended above 2,700 cfs on basis of computation of flow over dam at gage heights 11.93 and 12.95 ft; minimum, 11 cfs Aug. 30, 31.  
1935-52: Maximum discharge, 21,800 cfs Sept. 21, 1938 (gage height, 15.5 ft, from floodmarks), mean of slope-area determination and computation of flow over dam; minimum, 4.2 cfs Aug. 28, 29, 1949.

Remarks.--Records good except those for periods of ice effect or shifting control, which are fair. Some diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1951-52, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27				Jan. 28 to Sept. 30			
0.8	20	2.5	400	0.48	11	2.0	300
1.1	39	3.0	690	.5	12	2.5	580
1.4	70	4.0	1,370	.8	32	3.0	950
1.7	116	5.0	2,150	1.1	58	4.0	1,650
2.0	189			1.4	100	6.0	3,400
				1.7	175		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	192	135	216	335	95	902	275	3,070	56	23	360
2	22	220	172	335	395	105	1,570	226	1,650	45	23	569
3	22	1,760	172	295	400	95	1,100	192	*692	39	19	142
4	21	769	150	234	539	89	1,000	169	535	46	16	87
5	21	390	511	213	678	92	2,650	151	520	138	18	59
6	20	282	604	203	514	89	*1,960	142	385	60	41	48
7	25	1,070	371	175	390	89	*888	138	430	43	86	40
8	485	939	269	150	310	86	636	125	300	36	42	34
9	165	444	329	175	310	86	538	116	242	36	31	31
10	96	321	359	169	265	84	508	108	210	527	36	29
11	143	269	269	145	246	370	490	179	172	442	70	26
12	601	231	231	143	215	800	375	1,610	154	158	46	24
13	222	209	170	141	155	448	325	588	130	86	176	21
14	141	242	140	138	160	360	721	365	110	62	78	31
15	113	438	145	*170	170	300	562	315	97	*50	45	42
16	106	317	140	290	160	280	400	300	83	43	37	*53
17	96	331	125	206	145	245	325	218	88	38	74	36
18	90	246	135	399	130	206	280	260	194	34	53	25
19	*83	209	*145	321	140	222	238	210	97	31	36	75
20	77	170	130	354	*145	196	206	208	77	30	28	87
21	71	150	400	320	130	246	175	448	65	29	25	47
22	69	148	499	210	125	*365	163	354	62	32	25	37
23	68	160	312	471	118	448	154	214	63	28	23	34
24	70	220	253	320	125	472	140	169	57	23	19	36
25	528	203	206	235	120	418	170	449	57	21	*16	35
26	231	180	203	590	115	562	478	549	55	19	15	31
27	153	165	180	1,630	110	720	315	577	23	14	33	33
28	136	120	175	1,130	105	587	708	210	50	27	13	34
29	169	145	180	630	95	448	*692	166	61	23	12	58
30	128	132	174	380	-	442	385	192	87	19	11	25
31	114	-	220	330	-	538	-	175	-	19	12	-
Total	4,308	10,671	7,454	10,718	6,845	9,583	19,039	9,136	9,860	2,263	1,163	2,159
Mean	139	356	240	346	236	309	635	295	329	73.0	37.5	72.0
Cfsm	1.48	3.80	2.56	3.69	2.52	3.30	6.78	3.15	3.51	0.779	0.400	0.768
In.	1.71	4.24	2.96	4.25	2.72	3.80	7.56	3.63	3.91	0.90	0.46	0.86

Calendar year 1951: Max 3,290 Min 15 Mean 217 Cfsm 2.32 In. 31.44  
Water year 1951-52: Max 3,070 Min 11 Mean 255 Cfsm 2.72 In. 37.00

Peak discharge (base, 2,150 cfs).--Nov. 3 (1:30 p.m.) 3,030 cfs (5.94 ft); Nov. 7 (4:15 p.m.) 2,610 cfs (5.51 ft); Apr. 5 (9:30 p.m.) 4,630 cfs (7.16 ft); May 12 (5 a.m.) 3,280 cfs (5.87 ft); June 1 (8 p.m.) 5,420 cfs (7.85 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 20, 21, 26-29, Dec. 1, 13-21, 27, 28, Jan. 7-9, 11, 21, 22, 24-26, Jan. 29 to Feb. 2, Feb. 8, 12-16, 18-20, Feb. 24 to Mar. 3, Mar. 15-17.

Shifting-control method used Dec. 21 to Jan. 27, Mar. 11 to Apr. 5.

Westfield Little River at outlet of Cobble Mountain Reservoir,  
near Westfield, Mass.

Location.--Lat 42°07'34", long. 72°53'37", at Cobble Mountain Dam, 7½ miles west of Westfield, Hampden County.

Drainage area.--45.8 sq mi.

Records available.--July 1905 to September 1952. Published as "near Blandford" 1905-11 and as "near Westfield" 1912-35.

Gage.--Venturi meters at outlet tunnel at powerhouse 2.4 miles downstream. Prior to Mar. 1, 1910, staff or chain gages at site a quarter of a mile upstream and Mar. 1, 1910, to Sept. 30, 1935, water-stage recorder at diversion dam 2¼ miles downstream.

Average discharge.--42 years (1910-52), 89.1 cfs (adjusted to present drainage area).

Remarks.--Discharge computed on basis of flow through Venturi meters and flow over reservoir spillway or through bypass tunnel. No flow through bypass tunnel during year. Flow regulated by Borden Brook Reservoir since 1910 and Cobble Mountain Reservoir since August 1931 (see p. 302); discharge adjusted for effect of this regulation.

Cooperation.--Records furnished by Board of Water Commissioners, Springfield.

Revisions.--W 501: Drainage area.

Monthly discharge, in cubic feet per second, 1951-52

Month	Mean	Per square mile	Runoff in inches
October.....	65.0	1.42	1.64
November.....	188	4.10	4.57
December.....	145	3.17	3.65
Calendar year 1951...	110	2.40	32.53
January.....	179	3.91	4.50
February.....	115	2.51	2.70
March.....	160	3.49	4.02
April.....	329	7.18	8.02
May.....	153	3.34	3.84
June.....	149	3.25	3.64
July.....	40.5	.884	1.02
August.....	9.85	.215	.25
September.....	33.9	.740	.82
Water year 1951-52...	130	2.84	38.67

## CONNECTICUT RIVER BASIN

## Westfield River near Westfield, Mass.

Location.--Lat 42°06'24", long. 72°41'58", on left bank 0.7 mile downstream from Great Brook and 3 miles east of Westfield, Hampden County.

Drainage area.--497 sq mi.

Records available.--June 1914 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 98.25 ft above mean sea level, datum of 1929. Prior to Nov. 3, 1933, on right bank at same datum.

Average discharge.--38 years, 933 cfs (adjusted for diversion and, since October 1931, for storage).

Extremes.--Maximum discharge during year, 14,800 cfs June 2 (gage height, 14.97 ft); minimum, 91 cfs Sept. 1; minimum daily, 142 cfs Aug. 30.

1914-52: Maximum discharge, 55,500 cfs Sept. 21, 22, 1938 (gage height, 29.40 ft, from floodmarks), from rating curve extended above 18,000 cfs on basis of computations of flow over dam at gage heights 27.20 and 29.40 ft; minimum, 9 cfs Oct. 2, 1921.

Revisions.--The figures of maximum discharge for the water years 1915 and 1916 have been revised to 22,200 cfs Feb. 25, 1915 (gage height, 18.28 ft) and 11,800 cfs Dec. 26, 1915 (gage height, 13.39 ft), superseding those published in Water-Supply Papers 401 and 431, respectively.

Remarks.--Records excellent except those for periods of ice effect, no gage-height record, or backwater from aquatic vegetation, which are good. Flow regulated by diversion from Westfield Little River for municipal supply of Springfield, by Borden Brook Reservoir, Cobble Mountain Reservoir since 1931, and by Knightville Reservoir since 1941 (see p. 302).

Revisions (water years).--W 601: 1924(M). W 756: Drainage area. W 1051: 1919-21(M), 1925(M). Revised figures of discharge, in cubic feet per second, for the water year 1920, superseding those published in Water-Supply Papers 501 and 1105, are given here-with:

Date	Discharge	Date	Discharge	Date	Discharge
1920		1920		1920	
Jan. 12	310	Jan. 31	225	Feb. 19	220
13	320	Feb. 1	220	20	220
14	300	2	230	21	210
15	290	3	225	22	210
16	270	4	220	23	210
17	250	5	220	24	210
18	230	6	230	25	210
19	250	7	230	26	200
20	240	8	220	27	180
21	230	9	240	28	170
22	225	10	220	29	160
23	220	11	230	Mar. 1	200
24	215	12	220	2	220
25	210	13	230	3	190
26	230	14	220	4	180
27	260	15	210	5	250
28	255	16	220	6	720
29	245	17	230	7	1,250
30	230	18	220	8	1,300

Month	Observed			Adjusted		
	Maximum	Minimum	Mean	Mean	Per square mile	Runoff in inches
January 1920.....	555	210	298	319	0.642	0.74
February.....	240	180	215	236	1.475	.51
March.....	7,300	180	2,690	2,710	5.45	6.28
Water year 1919-20.	7,300	150	1,050	1,080	2.17	29.44
Calendar year 1920.	8,200	150	1,220	1,220	2.45	33.51



## Westfield River near Westfield, Mass--Continued

Rating table, water year 1951-52, except periods of ice effect or backwater from aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)

3.2	139	6.0	1,710
3.5	228	8.0	3,670
4.0	418	12.0	9,350
5.0	960		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	730	756	1,180	1,520	692	2,580	1,730	6,950	468	279	196
2	190	1,150	846	1,540	1,580	515	5,080	1,490	*8,070	393	199	2,730
3	155	3,890	981	1,680	1,650	774	4,950	1,260	5,450	401	206	1,650
4	152	3,310	967	1,390	2,170	975	4,340	1,120	4,400	273	181	667
5	217	4,130	1,870	1,180	2,350	998	6,260	1,100	4,960	376	434	401
6	161	2,600	3,160	1,050	2,620	802	6,780	1,090	4,440	369	412	378
7	196	2,980	2,250	1,120	1,970	965	3,500	981	4,090	306	452	323
8	1,910	4,280	1,570	1,090	1,700	719	4,250	918	1,690	245	470	264
9	1,440	3,920	1,550	954	1,600	608	4,620	804	1,310	248	276	288
10	726	2,070	2,040	1,170	1,500	866	4,530	774	1,200	1,050	262	181
11	505	1,530	1,830	988	1,330	2,080	4,490	659	1,060	2,100	404	178
12	2,400	1,320	1,490	768	1,350	4,200	3,670	4,110	906	995	624	391
13	1,580	1,170	1,330	b720	1,150	2,590	2,110	3,630	780	630	816	389
14	882	1,150	1,230	1,050	1,130	1,930	3,260	2,660	696	463	742	190
15	702	1,950	906	*1,120	1,040	1,470	3,540	1,770	615	a550	466	226
16	580	1,950	b760	1,300	876	1,160	2,570	1,680	678	*520	405	274
17	525	1,790	*b840	1,420	736	1,250	2,240	1,340	621	560	460	*308
18	458	1,480	b1,100	1,540	995	1,160	1,930	1,370	950	574	690	169
19	477	1,250	b1,150	1,690	*996	1,500	1,670	1,410	829	547	451	338
20	*389	1,250	b1,050	1,410	894	1,350	1,470	1,300	605	231	360	486
21	317	1,090	b1,500	1,660	1,060	1,490	1,370	2,070	486	273	*326	347
22	384	882	2,440	1,510	868	1,770	1,330	2,110	434	544	287	303
23	356	846	1,960	1,820	804	1,950	1,220	1,540	511	396	190	248
24	393	1,110	1,610	1,920	595	2,620	1,050	1,220	436	515	216	242
25	1,980	1,180	1,150	1,280	960	*2,150	981	1,550	436	338	254	231
26	1,410	1,100	1,110	1,680	893	2,250	2,040	3,120	468	255	282	248
27	870	*1,040	1,190	4,070	1,000	3,010	1,690	2,150	477	175	250	225
28	655	852	1,230	4,250	923	2,950	2,520	1,500	364	167	144	218
29	864	786	1,110	3,300	882	2,180	*4,060	1,380	360	327	225	196
30	744	780	967	2,000	-	1,850	2,390	1,380	528	227	142	184
31	660	-	1,090	1,650	-	2,140	-	1,200	-	168	152	-
Total	22,430	53,566	43,033	49,500	37,522	50,944	92,491	50,616	52,780	14,744	11,057	12,469
Mean	724	1,786	1,388	1,597	1,294	1,643	3,083	1,633	1,759	476	357	416
(+)	+145.7	+343.3	+10.1	+92.4	-131.1	-59.4	+527.3	+254.7	-24.7	-239.2	-256.5	-41.7

Adjusted for diversion and change in reservoir contents

	Mean	778	1,918	1,392	1,631	1,242	1,621	3,286	1,728	1,750	386	261	400
Cfsm	1.57	3.86	2.80	3.28	2.50	3.26	6.61	3.48	3.52	0.777	0.525	0.805	
In.	1.80	4.31	3.23	3.78	2.69	3.76	7.38	4.01	3.93	0.90	0.61	0.90	
Observed													
Adjusted													
Calendar year 1951:	Max	9,990	Min	127	Mean	1,146	Mean	1,168	Cfsm	2.39	In.	32.45	
Water year 1951-52:	Max	8,070	Min	142	Mean	1,342	Mean	1,362	Cfsm	2.74	In.	37.30	

\* Discharge measurement made on this day.

+ Diversion from Westfield Little River and change in contents in Knightville, Borden Brook, and Cobble Mountain Reservoirs, in millions of cubic feet.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for other stations in Westfield River basin.

b Stage-discharge relation affected by ice.

Note.--Backwater from aquatic vegetation Oct. 1-8, 10-12, 14-24, Oct. 27 to Nov. 1, June 8 to Sept. 30.

## Connecticut River at Thompsonville, Conn.

Location--Lat 41°59'14", long. 72°36'21", on right bank just upstream from Enfield Dam and 1 mile downstream from Thompsonville, Hartford County.

Drainage area--9,661 sq mi.

Records available--July 1928 to September 1952.

Gage--Water-stage recorder on river and on canal of Connecticut Light and Power Co. Datum of gage is 38.48 ft above mean sea level, datum of 1929.

Average discharge--24 years, 16,230 cfs (adjusted for storage and diversion).

Extremes--Maximum discharge during year, 113,000 cfs June 3 (gage height, 7.60 ft); minimum daily, 1,490 cfs Sept. 1.

1928-52: Maximum discharge, 282,000 cfs Mar. 20, 1936 (gage height, 16.6 ft, from floodmarks); minimum daily, 1,060 cfs Aug. 28, 1949.

Remarks--Records excellent except those below 4,000 cfs and those for periods of ice effect, which are good. Discharge includes water diverted around station by canal of Connecticut Light & Power Co. Flow regulated by powerplants, by diversion from Chicopee River basin, and by First Connecticut and Second Connecticut Lakes, Lake Francis since 1940, Comerford Station Pond since 1930, Quabbin Reservoir since 1939 (see p. 302), and other reservoirs (combined usable capacity, about 88½ billion cu ft).

Revisions (water years)--W 741: 1932. W 891: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,800	12,900	15,800	21,500	23,400	13,500	29,500	43,500	29,600	11,300	5,060	1,490
2	7,180	15,000	13,700	23,300	23,000	10,200	37,600	58,000	82,300	9,420	3,180	7,880
3	7,780	20,900	13,600	23,700	23,800	10,100	50,900	32,800	110,000	7,700	2,340	13,300
4	7,080	54,200	15,300	23,000	25,400	12,700	59,200	29,300	*89,600	4,870	3,420	7,730
5	6,440	60,600	16,500	22,800	29,900	13,000	67,800	24,200	70,700	3,570	4,440	6,890
6												
7	5,820	47,200	27,400	21,900	33,000	12,600	90,900	18,700	57,800	2,820	4,960	5,820
8	3,240	39,500	35,200	*21,000	32,100	14,200	104,000	16,100	49,300	2,800	4,910	2,680
9	16,400	49,500	32,900	18,800	28,900	13,500	92,700	18,900	39,400	4,650	3,850	2,680
10	30,300	52,900	30,300	17,500	26,300	11,500	78,500	19,200	31,200	6,130	2,750	3,630
11	21,300	43,300	31,200	16,400	25,300	10,100	72,200	18,800	27,600	7,900	2,050	4,130
12	15,200	35,100	27,600	b15,900	22,400	15,500	72,400	18,300	23,100	13,400	3,880	4,460
13	16,000	31,200	23,600	15,700	20,000	27,900	74,700	27,200	20,900	17,000	5,080	4,420
14	21,100	26,600	22,300	14,100	b19,200	27,900	69,700	48,400	17,800	5,390	7,140	2,850
15	15,200	20,400	21,000	14,000	17,000	28,100	64,600	45,900	15,200	4,730	2,020	1,590
16	9,280	22,300	17,100	13,800	16,400	25,700	72,900	37,800	13,900	5,700	7,950	2,890
17	10,200	25,700	b10,200	16,200	16,600	21,200	76,900	34,200	14,600	*6,580	6,500	3,990
18	11,100	28,600	b9,420	19,400	15,500	18,300	72,800	32,100	14,300	6,160	3,800	3,790
19	11,100	32,000	11,700	22,300	12,200	17,300	66,500	27,300	13,100	5,530	5,260	3,740
20	11,400	28,400	b11,300	25,300	11,200	18,100	63,300	26,000	13,200	3,610	*6,270	5,310
21	10,400	24,400	12,400	24,300	15,600	18,600	62,300	22,600	11,200	2,100	5,560	3,470
22	7,330	21,900	15,000	25,900	16,900	18,800	62,300	23,600	10,600	3,280	5,680	2,230
23	5,370	19,000	22,300	24,700	16,400	21,800	61,200	28,400	8,880	5,570	6,690	3,280
24	7,670	15,400	25,400	22,000	16,400	21,500	56,800	30,700	5,950	5,730	4,360	4,440
25	*8,140	16,200	24,200	23,700	14,300	24,100	53,500	29,000	8,670	5,660	*1,920	5,130
26	11,600	18,800	23,600	21,300	12,300	26,300	52,400	26,700	9,380	4,980	2,780	4,710
27	16,800	20,900	20,400	23,700	13,400	27,400	51,000	30,100	10,000	3,150	4,000	4,360
28	15,800	21,600	20,100	31,200	14,400	*29,800	48,300	34,400	9,820	1,870	4,060	3,120
29	13,300	*19,500	b18,800	37,400	12,600	34,000	43,800	33,200	10,500	5,600	4,130	1,650
30	12,600	15,000	16,600	38,600	12,400	36,600	52,400	28,600	11,200	4,990	4,920	2,600
31	14,300	13,900	15,000	30,900	-	33,700	*51,800	25,800	12,600	5,490	3,350	3,720
Mean	11,900	28,420	19,840	22,480	19,530	20,760	63,760	28,760	28,050	5,981	4,549	4,266
(+)	-303	+2,402	+849	+337	-3,664	-3,930	+9,793	+2,735	+583	-2,695	-1,673	-1,492

Adjusted for change in contents and diversion

	Observed	Adjusted
Mean	11,790	29,350
Cfsm	1.22	3.04
In.	1.41	3.39

Calendar year 1951:	Max	102,000	Min	3,410	Mean	19,170	Max	19,430	Cfsm	2.01	In.	27.31
Water year 1951-52:	Max	110,000	Min	1,490	Mean	21,430	Max	21,520	Cfsm	2.23	In.	30.33

\* Discharge measurement made on this day.

† Change in contents in all reservoirs from First Connecticut and Second Connecticut Lakes to Borden Brook and Cobble Mountain Reservoirs listed on p. and diversion from Chicopee River basin in millions of cubic feet.

\* Expressed in thousands.

b Stage-discharge relation affected by ice.

## Scantic River at Broad Brook, Conn.

Location.--Lat 41°54'42" long. 72°33'48", on left bank 300 ft upstream from bridge on State Highway 140, half a mile downstream from Broad Brook, 1 mile southwest of town of Broad Brook, Hartford County, and 8½ miles upstream from mouth.

Drainage area.--98.4 sq mi.

Records available.--August 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 26.23 ft above mean sea level, datum of 1929.

Average discharge.--24 years, 137 cfs.

Extremes.--Maximum discharge during year, 995 cfs Mar. 12 (gage height, 7.40 ft); minimum, 30 cfs July 30; minimum gage height, 0.63 ft Oct. 5; minimum daily discharge, 39 cfs July 26 and Sept. 14.

1928-52: Maximum discharge, 7,360 cfs Sept. 21, 1938 (gage height, 16.08 ft, from floodmark), on basis of computation of peak flow over dams 7 and 9 miles above station, adjusted for flow from intervening area on basis of computation of peak flow over dam on Broad Brook; minimum, 10 cfs Aug. 13 and 14, 1944; minimum daily, 16 cfs Aug. 13, 1944.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by mills and small reservoirs above station.

Revisions (water years).--W 726: 1931. W 781: Drainage area. W 851: 1936(M). W 921: 1940. W 1201: 1929(M), 1934(M), 1938-39, 1948-49.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-30			Oct. 31 to Sept. 30		
0.7	40		0.7	32	3.0 345
1.4	130		1.0	68	6.0 706
1.7	161		1.5	138	7.0 901
			2.0	196	

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	113	156	a320	307	156	202	345	271	111	62	68
2	*46	161	150	a330	321	144	202	266	470	88	62	150
3	44	374	150	321	367	150	202	223	480	73	55	150
4	42	513	144	284	378	144	196	202	369	68	54	107
5	44	553	161	248	400	166	257	184	248	68	57	82
6	42	372	202	216	378	184	410	178	209	64	73	70
7	50	309	196	202	327	209	420	166	209	64	100	60
8	134	*367	184	172	284	216	350	161	190	60	109	62
9	138	345	184	b160	275	216	275	156	166	80	91	53
10	118	275	196	b170	256	223	231	150	144	115	91	52
11	92	209	184	b160	256	482	209	150	132	239	150	50
12	107	178	166	b150	256	901	190	306	121	196	112	48
13	116	161	150	b150	b200	768	184	314	115	161	100	47
14	97	161	133	161	*b170	513	276	292	108	106	103	39
15	83	209	126	178	166	410	333	216	103	82	78	43
16	76	216	b121	248	161	339	356	*190	100	73	82	54
17	72	266	b117	284	166	300	292	166	102	65	166	57
18	70	239	*a125	396	166	256	231	161	184	60	156	57
19	66	209	a315	400	b165	256	202	172	216	55	128	67
20	62	178	a325	389	b170	321	184	166	184	52	91	106
21	62	156	a460	378	178	345	166	190	122	58	75	103
22	64	138	a590	327	172	356	*161	190	106	53	*96	82
23	60	144	a630	440	166	367	156	166	107	52	69	68
24	62	166	a460	430	161	410	150	144	99	49	71	65
25	134	196	a350	*358	161	400	161	156	92	43	64	65
26	151	256	a300	412	161	356	284	216	88	39	58	61
27	142	275	a250	548	161	*314	321	202	89	42	55	58
28	110	231	a220	613	156	275	410	172	82	47	53	58
29	*93	196	a220	524	156	248	460	144	83	43	52	61
30	86	166	a250	400	-	251	460	166	118	40	46	58
31	*84	-	a339	321	-	216	-	184	-	43	57	-
Total	2,595	7,332	7,585	9,670	6,641	9,872	7,931	6,094	5,107	2,369	2,638	2,101
Mean	83.7	244	245	312	229	318	264	197	170	77.1	85.1	70.0
Cfsm	0.851	2.46	2.49	3.17	2.33	3.23	2.68	2.00	1.73	0.784	0.865	0.711
In.	0.98	2.77	2.87	3.66	2.51	3.72	2.99	2.31	1.93	0.90	1.00	0.79

Calendar year 1951: Max 921 Min 34 Mean 182 Cfsm 1.85 In. 25.11  
 Water year 1951-52: Max 901 Min 39 Mean 191 Cfsm 1.94 In. 26.43

Peak discharge (base, 550 cfs).--Nov. 5 (6:30 a.m.) 599 cfs (5.30 ft); Dec. 23 (time unknown) 689 cfs (5.88 ft); Jan. 28 (12:30 p.m.) 627 cfs (5.48 ft); Mar. 12 (8:30 p.m.) 995 cfs (7.40 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

## CONNECTICUT RIVER BASIN

West Branch Farmington River near New Boston, Mass.

Location.--Lat 42°04'45", long. 73°04'24", on left bank 5 ft downstream from highway bridge, 0.3 mile downstream from Clam River, and 1 mile south of New Boston, Berkshire County.

Drainage area.--92.0 sq mi.

Records available.--May 1913 to September 1952. Prior to October 1948, published as Farmington River near New Boston.

Gage.--Water-stage recorder. Datum of gage is 758.21 ft above mean sea level, datum of 1929.

Average discharge.--39 years, 182 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 4,060 cfs June 1 (gage height, 7.96 ft); minimum, 11 cfs Aug. 30; minimum daily, 12 cfs Aug. 29, 30.

1913-52: Maximum discharge, 18,500 cfs Sept. 21, 1938 (gage height, 12.94 ft), from rating curve extended above 1,400 cfs on basis of contracted-opening and slope-area determinations at gage heights 10.65 and 12.94 ft; minimum recorded, 4.4 cfs Aug. 27, 1913; minimum daily, 5.7 cfs Aug. 31, 1929.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Otis Reservoir (see p. 302).

Revisions (water years).--W 641: 1924(M). W 756: Drainage area. W 781: 1928(M).

Revised figures of discharge, in cubic feet per second, for the high-water period in October of the water year 1914, superseding those published in Water-Supply Papers 381, 415, and 1105, are given herewith:

1913  
Oct. 26..... 1,200  
27..... 1,220  
28..... 570

Month	Observed			Change in contents in Otis Reservoir (millions of cubic feet)	Adjusted for change in reservoir contents		
	Maximum	Minimum	Mean		Mean	Per square mile	Runoff in inches
October 1913.....	1,220	18	155	+47	172	1.87	2.18
Water year 1913-14....	1,900	9.6	185	+16	185	2.01	27.36

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 11				Mar. 12 to Sept. 30			
2.5	22	4.0	278	2.5	10	3.5	143
2.7	38	5.0	660	2.5	20	4.0	259
3.1	81	5.5	910	2.7	34	4.5	420
3.5	152	6.0	1,290	3.1	76	5.0	640

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	234	159	287	249	84	452	*270	1,780	54	30	234
2	102	183	244	335	328	92	1,050	220	*1,640	43	18	342
3	100	1,090	241	271	381	81	762	193	751	35	16	212
4	90	682	236	186	431	76	610	167	550	32	14	189
5	24	443	547	181	507	80	1,730	151	545	72	*19	76
6	23	300	524	211	431	78	*1,600	143	373	53	42	51
7	120	737	322	248	384	77	760	135	311	38	45	119
8	495	703	275	336	220	74	509	122	285	30	30	113
9	264	447	332	249	207	73	402	92	254	34	23	110
10	204	326	381	204	200	72	380	82	240	277	71	108
11	292	258	329	*116	266	340	402	172	217	346	169	*106
12	442	214	297	150	246	509	352	1,090	185	245	51	34
13	255	188	232	225	190	363	330	527	103	91	120	27
14	241	237	142	210	165	296	526	349	87	60	82	103
15	210	356	180	254	105	235	484	287	77	44	44	104
16	186	312	230	312	160	186	409	254	68	35	39	113
17	165	*342	220	255	225	169	343	205	75	29	70	106
18	137	332	*225	311	210	155	305	220	135	25	44	103
19	81	290	230	275	220	155	276	193	87	23	32	86
20	94	258	200	366	220	155	254	248	69	21	27	123
21	154	238	600	353	*168	208	232	349	58	21	24	139
22	146	191	536	294	105	270	220	296	57	21	26	126
23	*139	154	510	495	140	331	214	230	56	18	21	122
24	144	236	410	366	200	346	172	180	49	15	17	122
25	455	241	340	238	190	323	166	361	46	14	14	107
26	202	275	300	453	185	389	363	464	43	13	14	29
27	170	255	250	1,090	180	*460	279	348	62	16	13	50
28	212	233	180	662	139	394	608	290	48	12	13	111
29	225	218	210	587	84	317	578	259	50	16	12	106
30	202	130	280	415	-	299	363	202	72	14	12	104
31	186	-	294	305	-	323	-	155	-	19	49	-
Total	5,860	10,103	9,456	10,341	6,734	7,010	15,131	8,255	8,353	1,773	1,181	3,475
Mean	189	337	305	334	232	226	504	266	278	57.2	38.1	116
(f)	-101	+90	-104	-97	-41	+185	+194	+92	+4	-8	-8	-164

Adjusted for change in reservoir contents

	Mean	151	372	266	297	216	295	579	301	280	54.2	35.1	52.6
Cfs/m	1.64	4.04	2.89	3.23	2.35	3.21	6.29	3.27	3.04	0.589	0.382	0.572	
In.	1.90	4.51	3.34	3.73	2.53	3.70	7.02	3.77	3.40	0.68	0.44	0.64	

	Observed				Adjusted			
Calendar year 1951:	Max	2,430	Min	17	Mean	221	Mean	218
Water year 1951-52:	Max	1,780	Min	12	Mean	240	Mean	241
							Cfs/m	2.37
							Cfs/m	2.62
							In.	32.23
								35.66

Peak discharge (base, 1,400 cfs).--Nov. 3 (12 m. to 12:30 p.m.), 1,730 cfs (6.44 ft); Nov. 6 (1:30 p.m.), 1,520 cfs (6.24 ft); Apr. 5 (9 p.m.), 3,350 cfs (7.58 ft); May 12 (3 a.m.), 1,990 cfs (6.66 ft); June 1 (7 p.m.), 4,060 cfs (7.96 ft).

\* Discharge measurement made on this day.

† Change in contents in Otis Reservoir, in millions of cubic feet.

Note.--Stage-discharge relation affected by ice Nov. 30, Dec. 15-21, 23-30, Jan. 12, 31, Feb. 10, 13-20, 23, 26, 27, Mar. 1-3, 9, 11.

## Still River at Robertsville, Conn.

Location.--Lat 41°58'04", long. 73°02'03", on left bank 1,500 ft downstream from Sandy Brook, 1 mile southeast of Robertsville, Litchfield County, 1 mile northwest of Riverton, and 1 mile upstream from mouth.

Drainage area.--84.4 sq mi.

Records available.--July 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 510.24 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,030 cfs June 1 (gage height, 6.17 ft); minimum, 13 cfs Sept. 12; minimum daily, 15 cfs July 25; minimum gage height, 0.50 ft July 25, Aug. 4.

1948-52: Maximum discharge, 9,550 cfs Dec. 31, 1948 (gage height, 10.12 ft), from rating curve extended above 2,600 cfs on basis of slope-area determination at gage height 10.12 ft; minimum, 5.6 cfs Oct. 4, 5, 1950; minimum daily, 8.0 cfs Aug. 27, 28, 1949; minimum gage height, 0.30 ft Aug. 28, 29, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Ordinary flow regulated by powerplant above station.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 1				Sept. 2-30	
0.5	15	2.5	310	0.6	15
.8	30	3.0	520	1.0	38
1.1	54	4.0	1,110	1.5	93
1.5	100	4.8	1,700	2.2	220
2.0	180			2.2	220

Note.--Same as preceding table above 2.2 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	172	162	245	310	117	443	a300	a1,400	71	35	226
2	50	188	184	334	377	b100	1,090	a250	a1,700	60	17	429
3	44	1,060	188	338	393	*113	788	a220	728	51	16	205
4	55	752	173	*275	490	113	580	a200	425	28	28	145
5	69	448	497	248	*570	118	1,470	a180	425	34	42	105
6	51	292	800	222	480	122	1,680	a170	317	32	81	59
7	54	766	385	216	377	117	830	a150	300	67	93	41
8	306	890	300	b180	317	114	550	a140	238	20	42	62
9	161	480	303	203	269	82	434	a130	200	53	45	41
10	95	310	*310	176	230	114	345	a85	161	344	62	38
11	164	232	242	150	240	560	314	a300	146	306	96	35
12	368	218	228	b150	230	920	275	a1,200	136	128	47	17
13	178	198	186	118	161	650	254	a620	122	96	139	72
14	142	221	171	150	b160	510	534	a360	138	79	97	18
15	122	401	142	168	b140	385	490	a300	93	59	68	44
16	96	345	b160	240	135	303	452	a265	99	50	43	69
17	96	353	b155	200	140	260	342	a200	105	54	141	46
18	81	286	b175	330	145	245	275	a215	151	26	107	40
19	81	238	b210	320	b155	260	235	a220	97	41	65	120
20	68	185	b195	358	b160	254	203	a225	84	23	58	138
21	61	155	b770	334	144	324	210	a340	57	*19	37	93
22	80	142	728	240	142	430	*188	a250	55	54	74	77
23	79	150	456	510	134	520	194	a220	73	24	40	69
24	66	240	345	397	124	545	178	a200	72	48	22	58
25	292	235	269	275	b130	495	224	a360	65	15	26	68
26	195	232	242	646	122	525	495	a560	68	18	51	50
27	137	216	220	1,220	124	*605	397	a370	64	32	45	36
28	126	182	b200	980	127	535	683	a280	50	16	18	36
29	136	180	b210	615	122	425	650	a250	50	32	38	54
30	116	167	206	409	-	385	425	a210	102	31	27	34
31	118	-	235	328	-	385	-	a140	-	30	41	-
Total	5,742	9,932	8,847	10,555	6,648	10,631	15,208	8,930	7,721	1,941	1,741	2,475
Mean	121	331	255	340	229	343	507	288	257	62.6	56.2	82.5
Cfs/m	1.43	3.92	3.38	4.03	2.71	4.06	6.01	3.41	3.05	0.742	0.666	0.977
In.	1.65	4.37	3.90	4.65	2.92	4.68	6.70	3.93	3.40	0.86	0.77	1.09

Calendar year 1951: Max 2,260 Min 18 Mean 214 Cfs/m 2.54 In. 34.39  
Water year 1951-52: Max 1,700 Min 15 Mean 241 Cfs/m 2.86 In. 38.92

Peak discharge (base, 1,200 cfs).--Nov. 3 (1:30 p.m.) 1,540 cfs (4.59 ft); Nov. 7 (4:30 p.m.) 1,390 cfs (4.42 ft); Jan. 27 (10 a.m.) 1,320 cfs (4.30 ft); Mar. 11 (3:30 p.m.) 1,220 cfs (4.15 ft); Apr. 2 (9 a.m.) 1,280 cfs (4.23 ft); Apr. 5 (9:15 p.m.) 2,660 cfs (5.84 ft); May 12 (time unknown) 1,680 cfs (4.73 ft); June 1 (time unknown) 3,030 cfs (6.17 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station on West Branch Farmington River at Riverton.

b Stage-discharge relation affected by ice.

## West Branch Farmington River at Riverton, Conn.

Location.--Lat 41°57'13", long. 73°00'50", on right bank 0.4 mile downstream from Still River, 0.6 mile south of Riverton, Litchfield County, 8.2 miles upstream from East Branch, and at mile 51.3.

Drainage area.--216 sq mi.

Records available.--September 1929 to September 1952. Prior to October 1948, published as Farmington River at Riverton.

Gage.--Water-stage recorder. Datum of gage is 472.22 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 392 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 7,140 cfs June 1 (gage height, 7.99 ft); minimum, 32 cfs Aug. 30 (gage height, 0.64 ft); minimum daily, 35 cfs Aug. 28.

1929-52. Maximum discharge, 37,100 cfs Sept. 21, 1938 (gage height, 17.95 ft, from floodmarks), from rating curve extended above 5,700 cfs on basis of velocity-area study and records for other stations on Farmington River; minimum, 17 cfs Sept. 28, 1929, Aug. 1, 1936; minimum daily, 23 cfs Aug. 1, 1936; minimum gage height, 0.45 ft Aug. 28, 1949.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Otis Reservoir (see p. 302) and at low flow by plants above station.

Revisions (water years).--W 781: Drainage area. W 1081: 1930-36. W 1301: 1935(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.0	72	3.0	850	0.6	28	2.5	510
1.5	165	4.0	1,620	.8	48	3.0	790
2.0	325	5.1	2,730	1.1	85	4.0	1,540
2.5	550			1.5	165	5.0	2,550
				2.0	300	6.0	3,840

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a170	486	369	654	652	b220	1,100	730	3,470	143	71	422
2	a170	465	505	829	784	b200	2,570	600	<b>3,680</b>	117	48	<b>915</b>
3	a160	<b>2,450</b>	515	794	916	b230	1,860	525	1,720	99	40	452
4	a170	1,780	475	*590	1,070	218	1,460	470	1,180	72	48	355
5	119	1,100	1,230	545	<b>*1,260</b>	230	3,460	428	1,220	100	60	237
6	73	*756	1,480	520	1,090	228	<b>3,740</b>	400	895	104	119	118
7	141	1,790	920	555	860	222	1,860	364	755	112	147	166
8	980	1,980	738	b490	658	215	1,300	332	622	66	80	194
9	500	1,170	774	535	595	b180	1,040	291	535	88	71	171
10	346	829	*885	485	535	272	888	<b>246</b>	480	662	90	163
11	533	648	708	b310	605	1,070	874	419	420	768	269	159
12	990	560	642	329	595	<b>1,810</b>	772	<b>2,490</b>	<b>364</b>	<b>416</b>	134	110
13	515	490	540	410	428	1,220	712	1,380	273	238	271	<b>54</b>
14	446	543	393	428	412	986	1,280	951	264	164	182	108
15	381	990	<b>353</b>	485	300	748	1,180	748	208	122	117	163
16	328	836	b460	708	295	595	1,040	664	199	100	91	206
17	301	885	436	570	404	520	825	550	197	94	249	174
18	272	762	b480	801	408	475	706	560	304	66	172	182
19	195	648	b610	762	440	315	610	510	222	74	110	241
20	171	535	b560	885	448	495	550	*535	180	59	88	292
21	240	465	b1,550	885	388	622	520	846	137	*52	71	255
22	253	418	1,490	636	297	881	*475	670	129	82	104	226
23	240	369	1,060	1,250	b290	1,040	475	520	147	55	71	210
24	228	575	885	990	b390	1,130	<b>424</b>	460	138	69	48	198
25	869	575	720	b650	b370	1,010	<b>445</b>	815	123	<b>39</b>	49	200
26	505	618	660	1,280	b350	1,090	1,080	1,260	126	39	66	115
27	357	590	570	<b>2,680</b>	332	*1,340	839	874	131	50	62	76
28	381	485	b420	2,150	b320	1,180	1,510	652	115	45	<b>35</b>	158
29	397	<b>485</b>	470	1,420	<b>243</b>	944	1,540	550	<b>109</b>	56	52	172
30	365	<b>365</b>	575	965	-	860	1,010	485	196	51	40	155
31	329	-	656	760	-	891	-	408	-	48	54	-
Total	11,145	24,648	22,109	25,351	15,735	21,567	36,145	20,743	18,558	4,249	3,109	6,627
Mean	360	822	713	818	543	696	1,205	669	619	137	100	221
(†)	-37.7	+34.7	-38.8	-36.2	-16.4	+69.1	+74.8	+34.3	+1.5	-3.0	-3.0	-63.3

Adjusted for change in reservoir contents

Mean	322	857	674	782	527	765	1,280	703	621	134	97.0	158
Cfm	1.49	3.97	3.12	3.62	2.44	3.54	5.93	3.25	2.88	0.620	0.449	0.731
In.	1.72	4.43	3.60	4.17	2.63	4.08	6.62	3.75	3.21	0.71	0.52	0.82

	Observed						Adjusted					
Calendar year 1951:	Max	5,300	Min	55	Mean	515	Mean	512	Cfm	2.37	In.	32.19
Water year 1951-52:	Max	3,740	Min	35	Mean	574	Mean	575	Cfm	2.66	In.	36.26

Peak discharge (base, 3,100 cfs).--Nov. 3 (3 p.m.) 3,730 cfs (5.92 ft); Nov. 7 (4 p.m.) 3,600 cfs (5.85 ft); Apr. 2 (8 a.m.) 3,150 cfs (5.48 ft); Apr. 5 (10:30 p.m.) 6,420 cfs (7.64 ft); May 12 (5:45 a.m.) 4,140 cfs (6.23 ft); June 1 (9 p.m.) 7,140 cfs (7.99 ft).

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Otis Reservoir; furnished by The Collins Co.

a No gage-height record; discharge estimated on basis of weather records, gate operations at Otis Reservoir, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

## Burlington Brook near Burlington, Conn.

Location.--Lat 41°47'10", long. 72°57'55", on left bank  $1\frac{1}{2}$  miles north of Burlington, Hartford County, 3 miles upstream from mouth, and 3 miles southwest of Collinsville.

Drainage area.--4.12 sq mi.

Records available.--September 1931 to September 1952.

Gage.--Water-stage recorder and sharp-edged square orifice and rectangular weir. Datum of gage is 714.00 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 7.98 cfs.

Extremes.--Maximum discharge during year, 191 cfs June 1 (gage height, 3.73 ft); minimum, 0.30 cfs (regulated) Aug. 1 (gage height, 0.20 ft); minimum daily, 0.9 cfs Oct. 1.

1931-52: Maximum discharge, 676 cfs Sept. 21, 1938 (gage height, 7.24 ft), from rating curve extended above 320 cfs on basis of one current-meter measurement and form of theoretical rating; minimum, 0.13 cfs June 21, 1933; minimum daily, 0.64 cfs Sept. 23, 24, 27-29, 1941, Aug. 27, 28, 1949; minimum gage height, 0.03 ft Oct. 11, 13, 1943 (orifice plate removed).

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Infrequent low-water regulation.

Revisions (water years).--W 1301: 1933-45(M).

Rating table, water year 1951-52, except periods of ice effect and backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

0.4	0.61	1.3	10.3
.9	2.67	1.7	29.0
1.0	3.11	2.5	82
1.1	4.55	2.9	114

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.9	6.46	5.26	15.3	b11	5.77	12.6	15.1	109	2.89	a1.0	17.9
2	a1.1	5.02	6.30	20.2	16.0	b5.3	15.6	12.2	60	2.71	a1.4	22.8
3	a1.1	30.3	5.77	15.1	14.6	5.26	13.4	11.1	21.7	2.46	a1.3	7.41
4	a1.1	14.2	5.26	10.3	23.2	5.26	10.7	10.3	16.4	2.46	a1.2	5.02
5	a1.1	7.13	22.6	9.27	21.2	7.41	74	9.27	19.7	2.46	a3.0	3.57
6	.96	*5.02	27.0	8.63	14.6	6.85	47.5	9.27	15.1	2.25	a8.6	3.07
7	1.57	43.6	11.5	7.71	11.9	6.30	20.7	8.95	16.0	2.13	a7.1	2.71
8	9.41	a35	9.27	b7.1	10.3	6.03	16.4	8.32	10.3	2.17	a3.6	2.50
9	2.46	a15	11.1	b6.8	11.1	6.03	14.6	8.32	8.95	2.62	a2.8	2.46
10	1.85	a9.0	9.93	6.57	9.60	6.30	13.0	7.71	8.00	17.9	a6.3	2.29
11	c2.8	a7.0	7.71	6.57	11.9	40.6	11.5	12.7	7.41	7.52	a6.3	2.13
12	c5.0	a6.0	6.85	6.03	10.3	57	10.7	47.7	7.13	4.15	a4.6	2.05
13	c2.6	a5.0	6.03	6.03	b8.0	26.1	10.3	17.8	6.30	3.02	a7.1	1.93
14	c2.0	a7.0	5.77	7.41	b6.8	19.7	32.7	12.6	5.52	2.76	a3.1	1.97
15	c1.7	a15	8.32	12.4	b6.0	15.1	30.9	11.5	5.26	2.62	a2.7	2.29
16	c1.6	a20	b6.6	16.0	b6.0	12.2	29.6	10.7	4.78	2.67	a23	2.99
17	c1.5	15.3	b4.8	10.7	b9.8	11.5	c16.0	9.27	5.02	2.46	a80	2.25
18	c1.4	8.32	b13	*29.3	8.32	14.2	c13.0	11.5	6.03	2.46	a19	2.01
19	1.40	6.30	37.4	16.4	7.13	4.6	c11.5	*9.27	4.78	1.57	a5.0	9.70
20	1.33	5.26	26.4	12.4	6.85	14.6	c10.3	13.2	4.55	2.74	a3.2	7.56
21	1.29	4.55	60	16.4	6.85	a21	c9.27	21.2	4.13	2.21	a3.0	3.74
22	1.29	4.33	32.3	b9.9	6.57	29.0	*c8.95	12.6	4.78	2.05	a14	3.02
23	1.29	4.78	13.0	51	6.57	32.8	8.63	9.27	4.55	1.89	a4.1	2.93
24	1.46	9.60	10.3	18.4	b6.3	32.3	8.32	8.32	3.32	1.58	a3.1	2.89
25	6.16	7.71	8.63	b11	b6.3	25.3	14.4	30.5	2.67	1.54	*a3.0	2.76
26	2.78	9.27	8.95	45.0	6.30	*27.4	29.0	36.3	2.93	1.54	3.43	2.46
27	2.13	8.95	b6.8	53	6.30	26.9	22.2	16.4	2.89	1.66	2.50	2.33
28	2.05	6.03	b6.6	31.8	6.03	20.2	49.1	11.1	2.76	a1.6	2.29	2.17
29	2.17	5.02	b6.0	19.2	6.03	16.4	32.8	9.93	3.70	a1.1	2.21	2.17
30	1.81	4.78	b8.0	b12	-	14.2	17.4	10.3	3.29	a1.7	2.17	1.93
31	1.74	-	b12	b11	-	13.0	-	9.27	-	a1.4	2.33	-
Total	67.05	330.93	409.45	517.92	261.85	548.61	615.07	431.97	376.95	90.29	232.43	131.01
Mean	2.16	11.0	13.2	16.7	9.72	17.6	20.5	13.9	12.6	2.91	7.50	4.37
Cfsm	0.524	2.671	3.20	4.05	2.36	4.27	4.98	3.37	3.06	0.705	1.82	1.06
In.	0.60	2.98	3.69	4.67	2.54	4.92	5.56	3.68	3.41	0.81	2.10	1.18

Calendar year 1951: Max 118 Min 0.9 Mean 9.63 Cfsm 2.34 In. 31.71  
Water year 1951-52: Max 109 Min 0.9 Mean 11.0 Cfsm 2.67 In. 36.34

Peak discharge (base, 140 cfs).--Apr. 5 (5:30 p.m.) 146 cfs (3.25 ft); June 1 (10:30 a.m.) 191 cfs (3.73 ft); Aug. 17 (time unknown) 156 cfs (3.37 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, records for nearby stations, and (biweekly) outside gage readings by Metropolitan Water Bureau.

b Stage-discharge relation affected by ice.

c Backwater from debris on control.

## Pequabuck River at Forestville, Conn.

Location.--Lat 41°40'23", long. 72°54'04", on left bank 700 ft upstream from station of New York, New Haven & Hartford Railroad at Forestville, Hartford County, a quarter of a mile downstream from Coppermine Brook, and  $6\frac{1}{2}$  miles upstream from mouth.

Drainage area.--45.2 sq mi.

Records available.--July 1941 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 197.72 ft above mean sea level, datum of 1929 (levels by Connecticut State Water Commission).

Average discharge.--11 years, 81.8 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 1,170 cfs June 1 (gage height, 3.85 ft, from floodmark); minimum, 11 cfs Oct. 1 (gage height, 0.73 ft).

1941-52: Maximum discharge, 3,260 cfs Dec. 31, 1948 (gage height, 6.70 ft), from rating curve extended above 1,100 cfs as explained below; minimum, 6.5 cfs Sept. 21, 22, 1941 (gage height, 0.64 ft).

Flood of September 1938 reached a stage of about 7.3 ft, from floodmarks (discharge, 3,800 cfs, from rating curve extended above 1,100 cfs on basis of slope-area determination of peak flow and computation of peak flow over dam).

Remarks.--Records good except those for periods affected by faulty intake action, which are fair. Flow regulated by Whigville Reservoir (see p. 303) and mills above station. Diversion for municipal water supply of city of New Britain from Coppermine Brook.

Revisions (water years).--W 971: 1941-42. W 1111: 1947.

Rating tables, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5				Apr. 6 to Sept. 30			
0.7	10	1.6	138	0.9	19	2.0	245
.8	15	2.2	330	1.1	37	3.0	715
1.0	33	3.0	715	1.6	124	3.5	975
1.3	75						

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	72	56	125	133	67	114	155	950	46	44	146
2	16	54	56	150	160	61	121	132	855	42	25	133
3	16	264	55	140	152	81	119	117	271	40	23	64
4	16	140	53	100	240	66	110	109	208	38	23	49
5	16	*80	147	95	213	95	530	102	223	37	76	41
6	15	64	153	85	160	86	534	96	171	35	84	37
7	33	362	93	80	138	89	231	94	174	37	80	33
8	120	224	80	75	121	79	169	86	132	37	41	33
9	34	106	86	75	121	77	149	79	120	42	33	32
10	27	82	86	75	108	82	139	74	106	235	79	33
11	41	72	73	70	126	549	126	91	98	96	54	32
12	44	65	69	70	114	538	113	385	98	53	80	32
13	28	62	62	70	80	290	109	183	80	42	81	30
14	23	77	55	75	75	228	350	132	72	40	45	28
15	23	106	62	100	70	177	350	106	68	37	36	37
16	22	108	55	130	72	152	280	100	67	36	140	49
17	21	112	*51	*95	97	*136	190	84	75	33	318	37
18	21	79	86	210	110	138	*145	109	80	33	88	31
19	20	69	141	190	*93	154	125	96	77	31	*54	95
20	18	61	88	180	82	192	115	125	64	30	45	58
21	16	56	650	160	80	231	105	166	56	36	58	36
22	18	53	240	111	80	252	100	113	60	34	98	32
23	19	56	120	383	75	272	96	*86	60	31	54	32
24	35	82	95	186	72	266	86	77	56	30	41	32
25	101	67	80	121	72	225	146	207	53	27	38	31
26	39	110	85	385	72	201	265	258	50	25	37	29
27	30	89	80	420	73	186	220	149	47	24	35	26
28	26	61	70	298	72	160	454	98	46	26	34	24
29	27	61	75	216	72	138	334	129	68	25	34	25
30	27	58	90	152	-	128	199	120	56	23	35	22
31	25	-	110	131	-	119	-	98	-	20	32	-
Total	931	2,955	3,302	4,753	3,133	5,495	6,104	3,956	4,332	1,321	1,945	1,319
Mean	30.0	98.5	107	153	108	177	203	128	144	42.6	62.7	44.0
( $\bar{x}$ )	+6.2	+8.0	+8.4	+7.7	+7.5	+7.9	+7.7	+7.7	+6.6	+4.0	+6.7	+4.8

Adjusted for change in reservoir contents

Mean	36.2	106	115	161	116	185	211	136	151	46.6	69.4	48.8
Cfm	0.901	2.35	2.54	2.56	2.57	4.09	4.67	3.01	3.34	1.03	1.54	1.08
In.	0.92	2.62	2.93	4.10	2.77	4.72	5.21	3.47	3.73	1.19	1.78	1.20

		Observed				Adjusted						
Calendar year 1951:	Max	915	Min	12	Mean	93.0	Mean	100	Cfm	2.21	In.	30.00
Water year 1951-52:	Max	950	Min	14	Mean	108	Mean	115	Cfm	2.54	In.	34.64

Peak discharge (base, 660 cfs).--Nov. 7 (1 p.m.) 948 cfs (3.47 ft); Dec. 21 (about 10 a.m.) 1,080 cfs (3.7 ft); Mar. 11 (2:30 p.m.) 1,030 cfs (3.59 ft); Apr. 5 (about 6 p.m.) 1,030 cfs (3.6 ft); June 1 (about 12 m.) 1,170 cfs (3.85 ft); July 10 (12:30 p.m.) 690 cfs (2.95 ft); Aug. 5 (5 p.m.) 675 cfs (2.92 ft); Aug. 17 (1 a.m.) 685 cfs (2.94 ft).

\* Discharge measurement made on this day.

† Net diversion and change in contents, equivalent in cubic feet per second, at Whigville Reservoir; furnished by city of New Britain.

Note.--Doubtful or no gage-height record Dec. 21 to Jan. 20, Apr. 14-22, June 1; discharge estimated on basis of recorder graph, weather records, engineer's notes, and records for nearby streams.



## Salmon Brook near Granby, Conn.

Location.--Lat 41°56'14", long. 72°46'36", on left bank 50 ft upstream from New York, New Haven & Hartford Railroad bridge, 0.5 mile downstream from confluence of East Branch and West Branch, 1.2 miles southeast of Granby, Hartford County, and 1.9 miles upstream from mouth.

Drainage area.--60.6 sq mi.

Records available.--July 1946 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 147.54 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 120 cfs.

Extremes.--Maximum discharge during year, 2,350 cfs June 1 (gage height, 10.80 ft); minimum, 18 cfs Oct. 6, 7 (gage height, 1.60 ft).  
1946-52: Maximum discharge, 3,440 cfs Dec. 31, 1948 (gage height, 13.55 ft); minimum, 10 cfs Aug. 26, 1949 (gage height, 1.42 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good. Some regulation at low flow.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	18	4.0	395
2.0	48	6.0	860
2.5	101	8.2	1,480
3.0	166		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	65	92	195	240	104	252	275	1,460	72	31	102
2	*20	90	102	285	302	b100	405	228	1,290	64	30	224
3	20	490	102	285	302	98	355	195	515	56	32	84
4	22	358	96	202	436	86	278	178	365	53	31	59
5	21	183	291	173	465	120	798	168	315	53	40	50
6	19	125	405	158	365	121	1,050	166	260	50	69	45
7	21	470	232	136	290	129	475	161	232	47	72	40
8	128	545	166	b122	242	124	365	145	166	46	49	38
9	70	270	173	125	250	121	315	125	146	46	43	36
10	51	171	176	125	215	134	272	121	135	325	60	35
11	46	134	135	b112	235	680	240	180	122	254	68	34
12	92	115	121	113	228	1,100	208	653	114	115	52	32
13	59	105	111	111	b145	613	192	365	105	81	66	31
14	46	112	b92	113	b125	445	410	240	98	68	56	30
15	42	225	b90	144	b120	b340	365	195	92	57	46	31
16	40	198	b94	208	120	b275	302	*183	86	52	81	40
17	38	278	b80	158	120	240	238	148	87	48	214	35
18	34	158	b90	320	121	240	198	161	161	46	98	32
19	33	125	b155	270	121	260	168	146	108	43	68	72
20	31	b106	b125	302	b120	278	151	163	91	42	52	80
21	31	b94	514	302	123	345	139	345	82	42	46	55
22	30	b92	465	186	120	395	*135	220	80	42	*54	45
23	29	95	b270	441	119	445	133	154	82	40	47	41
24	30	126	b210	325	114	455	125	131	77	39	42	40
25	110	119	b165	*b190	110	385	153	254	74	36	39	39
26	73	140	b145	498	109	375	385	465	68	35	37	38
27	58	146	b135	735	109	385	302	285	67	35	36	36
28	48	b103	b125	615	108	*345	630	178	62	*34	35	34
29	46	99	b128	415	108	290	567	174	75	32	34	33
30	42	90	133	b300	-	252	365	198	96	31	33	32
31	*41	-	185	b250	-	240	-	173	-	52	32	-
Total	1,392	5,417	5,591	7,894	5,582	9,530	9,971	6,773	6,711	2,017	1,691	1,523
Mean	44.9	181	174	255	192	307	332	218	224	65.1	54.5	50.8
Cfs/m	0.741	2.99	2.87	4.21	3.17	5.07	5.48	3.60	3.70	1.07	0.899	0.838
In.	0.85	3.34	3.31	4.85	3.42	5.84	6.11	4.15	4.13	1.23	1.04	0.94

Calendar year 1951: Max 1,720 Min 19 Mean 148 Cfs/m 2.44 In. 33.17  
Water year 1951-52: Max 1,460 Min 19 Mean 175 Cfs/m 2.89 In. 39.21

Peak discharge (base, 1,000 cfs).--Nov. 7 (9 p.m.) 1,120 cfs (6.98 ft); Mar. 11 (10:30 p.m.) 1,720 cfs (8.98 ft); Apr. 6 (12:30 a.m.) 1,930 cfs (9.56 ft); June 1 (5 p.m.) 2,350 cfs (10.80 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Farmington River at Rainbow, Conn.

Location.--Lat 41°54'41", long. 72°41'16", on left bank at Rainbow, Hartford County, 300 ft from Stevens Paper Mill, 0.4 mile downstream from Farmington River Power Co. dam, 1.3 miles upstream from Poquonock, 6.4 miles downstream from Salmon Brook and 8 miles upstream from mouth.

Drainage area.--584 sq mi.

Records available.--August 1928 to September 1952. Prior to 1940, published as "at Tariffville."

Gage.--Water-stage recorder. Datum of gage is 35.36 ft above mean sea level, datum of 1929. Prior to July 1, 1939, water-stage recorder at site  $5\frac{1}{2}$  miles upstream at different datum.

Average discharge.--24 years (1928-52), 1,041 cfs (adjusted to present site; adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 10,300 cfs June 3 (gage height, 7.68 ft); minimum daily, 18 cfs Oct. 27, 31, Nov. 30, Dec. 1, 15, Jan. 12 (gage height, 0.74 ft).

1928-52: Maximum discharge, 29,900 cfs Sept. 22, 1938, by computation of flow over Tariffville Dam; maximum gage height, 13.83 ft Jan. 1, 1949; minimum daily discharge, 5.1 cfs Mar. 5, 1944, Oct. 28, Nov. 11, 1945, Feb. 22, 1947.

See Water-Supply Paper 891, page 180, for peak discharges for some outstanding floods.

Remarks.--Records good. Flow regulated by powerplant, by Otis, Barkhamsted, East Branch, Nepaug and Whigville Reservoirs, having a combined capacity of about 6,450,000,000 cu ft (see p. 302), and by diversions for domestic water supply from Barkhamsted, Nepaug, and Whigville Reservoirs and Whites Bridge pumping plant.

Revisions (water years).--W 851: 1936. W 1171: Drainage area. W 1051: 1945(m).

W 1301: 1928-43 (adjusted figures of monthly and yearly discharge and runoff).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.8	30	3.0	1,840
1.0	90	4.0	3,220
1.5	350	5.0	4,870
2.0	740	6.0	6,760
2.5	1,250	7.3	9,460

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	274	1,120	660	1,350	2,200	1,290	1,790	2,860	3,150	662	474	368
2	245	1,020	184	1,680	2,090	1,130	2,420	2,360	732	422	1,440	
3	474	1,540	1,280	2,060	2,040	1,070	3,560	1,850	9,460	656	356	1,750
4	518	3,810	1,200	1,990	2,590	1,200	2,830	1,450	6,380	422	286	1,140
5	1,000	2,760	1,340	1,160	3,360	1,280	3,070	1,440	3,830	310	402	680
6	250	1,900	2,300	1,350	3,070	1,340	6,560	1,340	3,020	308	499	562
7	65	1,800	2,450	1,510	2,640	1,510	7,160	1,220	2,640	363	718	416
8	1,100	3,960	1,770	1,120	2,570	1,340	4,730	1,120	1,860	294	996	325
9	1,120	3,170	1,190	1,180	2,200	1,260	2,850	930	1,540	314	361	471
10	974	2,230	1,600	1,620	1,990	1,510	2,500	1,040	1,490	1,040	351	654
11	932	1,260	1,640	1,280	1,980	1,780	2,150	864	1,260	1,840	622	561
12	905	1,450	1,210	822	1,730	5,340	1,900	2,440	1,120	1,420	674	576
13	893	1,010	1,180	354	1,980	4,510	1,910	4,420	987	858	853	483
14	597	1,210	1,220	1,480	*1,220	3,160	2,190	3,010	794	509	675	156
15	888	1,300	402	1,360	1,690	2,500	3,510	2,210	662	435	799	206
16	669	1,650	292	1,620	1,220	1,860	3,390	*1,970	774	430	592	506
17	854	1,810	1,320	1,710	1,370	1,580	2,720	1,640	653	410	1,510	701
18	927	1,070	1,010	1,800	1,430	1,660	2,470	1,660	1,120	417	966	564
19	820	1,530	1,000	2,140	1,470	1,410	2,020	1,500	922	366	986	640
20	290	1,210	1,500	1,790	1,480	1,460	1,560	1,510	920	40	562	732
21	39	1,160	1,660	*2,270	1,450	1,700	1,540	1,580	844	243	729	712
22	411	358	3,140	2,030	1,510	2,040	*1,450	2,190	500	462	594	542
23	618	1,520	2,690	2,160	1,350	2,530	1,330	1,630	572	413	624	748
24	619	832	2,250	2,810	1,070	2,700	1,240	1,560	713	408	351	1,150
25	932	472	2,010	2,290	1,290	2,660	1,230	1,580	720	383	411	620
26	1,540	1,600	1,440	2,110	1,280	2,330	1,710	2,730	660	404	336	377
27	750	1,220	1,240	4,300	1,140	2,430	2,640	2,890	630	362	579	164
28	542	1,210	1,480	4,990	1,110	*2,500	3,030	2,270	707	342	508	59
29	*958	1,179	810	4,440	1,210	2,290	4,540	1,660	604	272	500	428
30	542	1,020	1,330	2,930	1,780	1,780	3,960	1,480	479	356	350	536
31	912	-	1,530	2,500	-	1,800	-	1,700	-	360	203	-
Total	21,636	47,292	44,508	62,406	51,730	62,350	83,760	58,084	56,971	15,831	18,309	18,286
Mean	698	1,576	1,436	2,013	1,784	2,011	2,792	1,899	511	591	610	610
(†)	-79	+320	+192	+147	-195	+265	+306	+91	+6	-37	-67	-95

Adjusted for diversion and change in reservoir contents

Mean	619	1,896	1,628	2,160	1,589	2,276	3,098	1,965	1,905	474	524	515
Cfsm	1.06	3.25	2.79	5.70	2.72	3.90	5.30	3.36	3.26	0.812	0.897	0.882
In.	1.22	3.63	3.22	4.27	2.93	4.50	5.91	3.87	3.64	0.94	1.03	0.98

		Observed				Adjusted						
Calendar year 1951:	Max	9,460	Min	39	Mean	1,257	Mean	1,347	Cfsm	2.31	In.	31.33
Water year 1951-52:	Max	9,460	Min	39	Mean	1,479	Mean	1,551	Cfsm	2.66	In.	36.14

\* Discharge measurement made on this day.

† Change in contents in Otis, Barkhamsted, East Branch, Nepaug and Whigville Reservoirs, and diversion cubic feet per second; furnished by Collins Co., Water Bureau of Hartford Metropolitan District Commission, and Board of Water Commissioners of New Britain.

Note.--Gage-height graph estimated for hours of lowest regulated stages during period Jan. 14 to Sept. 10; intake not functioning properly. No record for entire day July 20.

## South Branch Park River at Hartford, Conn.

Location.--Lat 41°44'02", long. 72°42'51", on left bank at upstream side of bridge on Newfield Avenue in Hartford, Hartford County, 0.7 mile downstream from confluence of Trout Brook and Piper Brook, and 3.3 miles upstream from confluence with North Branch.

Drainage area.--40.6 sq mi.

Records available.--October 1936 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 31.07 ft above mean sea level, datum of 1929 (levels by Department of Engineering, city of Hartford).

Average discharge.--16 years, 70.1 cfs.

Extremes.--Maximum discharge during year, 1,380 cfs June 1; maximum gage height, 9.48 ft June 1; minimum discharge recorded, 20 cfs Aug. 31; minimum gage height recorded, 1.74 ft Oct. 7.

1936-52: Maximum discharge, 3,600 cfs Sept. 21, 1938 (gage height, 13.6 ft, adjusted; 13.78 ft, unadjusted), from rating curve extended above 1,200 cfs on basis of records for North Branch Park River and Park River at Hartford; minimum, 7.3 cfs Oct. 6, 1941 (gage height, 1.31 ft); minimum daily, 9.4 cfs Oct. 6, 1941.

Flood of Mar. 12, 1936, reached a stage of 12.1 ft, as determined by Hartford city engineers from floodmarks.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some regulation by mills and reservoirs above station.

Revisions (water years).--W 1201: 1939-40(P), 1941(M), 1943-44(P), 1950.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 7			Nov. 8 to Sept. 1			Sept. 2-30		
1.8	24		1.7	19	6.0	280	1.9	20
2.0	30		2.0	28	7.0	440	2.0	23
4.0	127		4.0	127	8.5	870	3.0	72
6.0	280						4.7	173
6.6	362							

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	118	56	130	100	85	92	142	844	50	*32	139
2	*28	85	56	166	145	72	92	118	614	46	30	169
3	25	348	*56	*173	139	*74	92	102	280	*37	41	54
4	26	294	55	121	216	78	82	98	176	31	38	*36
5	26	102	128	90	*204	142	312	92	170	36	50	34
6	24	73	136	82	133	127	315	72	121	36	145	30
7	42	349	88	80	112	145	152	66	98	33	115	27
8	220	355	75	80	100	124	105	61	72	25	55	27
9	51	124	82	72	105	130	95	58	66	38	38	29
10	32	82	82	74	92	142	88	52	64	240	120	29
11	47	68	70	74	112	536	74	66	62	212	165	26
12	53	66	70	66	108	462	70	240	53	53	65	25
13	32	62	64	62	85	232	73	118	49	40	85	27
14	28	78	58	75	82	170	256	85	38	36	50	22
15	29	*110	61	102	75	118	208	80	42	34	36	26
16	32	102	55	130	59	98	184	62	46	31	65	35
17	31	108	60	102	85	95	110	51	42	30	120	30
18	30	74	87	252	95	98	92	70	63	26	80	25
19	30	70	152	154	90	100	82	68	52	24	45	58
20	29	62	105	174	90	182	74	87	47	24	36	38
21	27	55	524	162	90	184	70	148	40	37	40	25
22	28	52	365	98	88	133	66	88	38	36	75	32
23	30	62	159	464	80	158	68	65	53	32	45	29
24	35	82	115	202	75	184	60	48	44	30	29	28
25	129	66	102	115	80	148	106	116	40	29	32	26
26	46	152	108	366	85	121	209	181	38	24	33	25
27	33	104	102	354	88	115	173	105	39	21	30	24
28	30	68	90	298	82	102	424	98	34	22	30	22
29	31	62	82	221	90	95	324	123	50	25	28	28
30	32	60	95	140	-	88	209	164	54	26	25	26
31	32	-	127	110	-	92	-	108	-	28	24	-
Total	1,298	3,493	3,465	4,789	2,995	4,630	4,357	3,030	3,429	1,392	1,802	1,151
Mean	41.9	116	112	154	103	149	145	97.7	114	44.9	58.1	38.4
Cfsm	1.03	2.86	2.76	3.79	2.54	3.67	3.57	2.41	2.81	1.11	1.43	0.946
In.	1.19	3.19	3.18	4.37	2.74	4.23	3.98	2.78	3.14	1.28	1.65	1.06

Calendar year 1951: Max 988 Min 21 Mean 82.7 Cfsm 2.04 In. 27.63  
Water year 1951-52: Max 844 Min 21 Mean 97.9 Cfsm 2.41 In. 32.79

Peak discharge (base, 550 cfs).--Nov. 3 (6 p.m.) 568 cfs (7.47 ft at 10 p.m.); Nov. 7 (6 p.m.) 810 cfs (8.14 ft at 9:30 p.m.); Dec. 21 (5 p.m.) 775 cfs (8.18 ft at 8:30 p.m.); Jan. 23 (6 a.m.) 700 cfs (7.70 ft at 9 a.m.); Jan. 26 (2 p.m.) 610 cfs (7.50 ft at 6 p.m.); Mar. 11 (7 p.m.) 990 cfs (8.62 ft at 10 p.m.); Apr. 5 (7 p.m.) 670 cfs (7.64 ft at 10 p.m.); Apr. 28 (12 m.) 518 cfs (7.30 ft at 4 p.m.); June 1 (7 p.m.) 1,380 cfs (9.48 ft at 9 p.m.); July 10 (10 p.m.) 555 cfs (7.18 ft at 11:30 p.m.).

\* Discharge measurement made on this day.

Note.--No gage-height record July 19 to Aug. 1, Aug. 4 to Aug. 26, Sept. 8-30; discharge estimated on basis of recorded range in stage, weather records and records for Park River at Hartford.

## North Branch Park River at Hartford, Conn.

Location.--Lat 41°47'03", long. 72°42'31", on right bank 60 ft downstream from stone-arch bridge on Albany Avenue, Hartford, Hartford County, and 3 miles upstream from confluence with South Branch.

Drainage area.--25.3 sq mi.

Records available.--October 1936 to September 1952.

Gage.--Water-stage recorder and masonry control. Datum of gage is 34.20 ft above mean sea level, datum of 1929 (levels by Department of Engineering, city of Hartford).

Average discharge.--16 years, 36.0 cfs.

Extremes.--Maximum discharge during year, 1,260 cfs Mar. 11; maximum gage height, 7.55 ft Mar. 11; minimum discharge, 1.9 cfs July 30; minimum gage height, 0.98 ft Oct. 1; minimum daily discharge, 2.0 cfs July 31.

1936-52: Maximum discharge, 3,000 cfs Jan. 25, 1938 (gage height, 11.6 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 0.04 cfs Sept. 24, 1943 (gage height, 0.75 ft); minimum daily, 0.04 cfs Sept. 24, 1943.

Flood of Mar. 12, 1936, reached a stage of 11.2 ft as determined from floodmarks by city engineers of Hartford (discharge, about 2,800 cfs).

Remarks.--Records good except those for periods of no gage-height record and backwater from debris, which are fair. Some regulation by mills upstream and by storage and diversion at Hartford water-supply reservoirs above station.

Revisions (water years).--W 891: 1939. W 1201: 1937(M), 1938, 1939(M), 1940, 1941(M), 1942(P), 1943, 1944(M), 1945, 1946(P), 1947(M), 1948-49(P), 1950.

Rating tables, water year 1951-52, except periods of ice effect and backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 10

July 10 to Sept. 30

1.0	2.2	2.1	45	1.0	1.8	2.0	33
1.2	4.3	2.5	96	1.1	2.7	2.2	51
1.4	7.3	3.0	210	1.4	6.4	2.5	93
1.6	13	5.3	700	1.6	12	2.9	184
1.8	22			1.8	20		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	45	20	103	a60	27	*30	*53	588	8.0	2.3	22
2	a2.5	50	22	135	a100	25	31	40	388	*6.2	2.7	59
3	a2.5	370	*21	*118	a95	20	36	32	*99	5.8	2.4	22
4	2.5	224	20	68	a200	20	30	27	55	5.3	*2.5	*12
5	2.7	58	91	b43	129	53	394	23	48	5.5	10	8.0
6	2.7	30	113	b35	73	62	351	22	40	5.3	25	6.4
7	7.8	369	55	b30	53	92	94	22	34	4.9	43	5.3
8	75	265	42	b28	43	88	65	19	24	4.6	13	5.0
9	18	67	56	b23	52	105	52	17	18	5.3	7.1	4.8
10	10	40	60	b21	42	112	44	15	17	57	37	4.6
11	9.4	30	38	b20	52	692	37	25	15	66	44	4.5
12	17	24	32	b19	b49	437	30	164	13	20	15	4.4
13	11	21	b24	b18	b32	129	28	79	12	9.7	20	4.3
14	7.5	27	b16	b27	19	93	150	44	11	6.4	11	4.3
15	6.3	*74	b15	68	16	63	149	27	11	5.6	6.6	5.2
16	5.9	67	b13	105	15	50	128	26	10	4.9	29	8.0
17	5.6	89	b12	72	16	45	63	20	9.4	4.4	162	7.5
18	5.3	45	b20	347	18	44	45	30	12	4.0	39	6.4
19	5.0	30	68	138	24	45	35	27	10	3.7	13	18
20	4.8	22	58	153	25	122	30	33	9.1	3.5	7.5	25
21	4.5	b17	457	b110	26	152	23	112	8.2	3.3	7.4	14
22	4.6	b16	372	77	26	98	20	64	8.8	3.7	44	9.1
23	4.8	70	96	369	b25	133	21	30	9.4	3.2	18	6.2
24	5.0	43	60	b12	b24	135	20	20	8.2	2.7	9.1	5.5
25	7.9	41	47	b64	b24	93	36	71	7.5	2.3	6.2	5.2
26	29	96	42	341	24	71	151	142	7.1	2.1	5.3	4.9
27	15	78	40	306	*a25	57	112	60	8.0	2.1	4.9	4.8
28	12	b34	30	a150	a28	49	357	30	6.2	2.3	4.8	4.6
29	11	26	a90	a27	42	191	32	8.2	2.4	4.6	4.5	4.5
30	8.5	b22	33	a70	-	36	84	42	14	2.2	4.5	4.5
31	7.8	-	74	a60	-	30	-	42	-	2.0	4.4	-
Total	384.7	2,340	2,077	3,318	1,342	3,220	2,835	1,390	1,509.3	264.4	605.3	300.0
Mean	12.4	78.0	67.0	107	46.3	104	94.5	44.8	50.3	8.53	19.5	10.0
Cfsm	0.490	3.08	2.65	4.23	1.83	4.11	3.74	1.77	1.99	0.337	0.771	0.395
In.	0.56	3.44	3.06	4.88	1.97	4.74	4.17	2.04	2.22	0.39	0.89	0.44

Calendar year 1951: Max 1,050 Min 1.7 Mean 47.1 Cfsm 1.86 In. 25.27

Water year 1951-52: Max 692 Min 2.0 Mean 53.5 Cfsm 2.11 In. 28.80

Peak discharge (base, 500 cfs).--Nov. 3 (5:30 p.m.) 640 cfs (4.92 ft at 7:30 p.m.); Nov. 7 (5:30 p.m.) 870 cfs (6.02 ft at 6:30 p.m.); Dec. 21 (4:30 p.m.) 810 cfs (5.78 ft at 7 p.m.); Jan. 18 (2 p.m.) 540 cfs (4.45 ft at 3 p.m.); Jan. 23 (9:30 a.m.) 600 cfs (4.68 ft at 12 m.); Jan. 26 (4 p.m.) 660 cfs (4.92 ft at 6 p.m.); Mar. 11 (6 p.m.) 1,260 cfs (7.55 ft at 8 p.m.); Apr. 5 (8 p.m.) 965 cfs (6.39 ft at 9:30 p.m.); Apr. 28 (2 p.m.) 500 cfs (4.28 ft at 4 p.m.); June 1 (5 p.m.) 870 cfs (6.12 ft at 8 p.m.).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records and records for Park River at Hartford.

b Stage-discharge relation affected by ice.

Note.--Backwater from debris June 20 to July 7, Aug. 3, 4, 15, Sept. 2, 4, 6-30.

## Park River at Hartford, Conn.

Location.--Lat 41°45'36", long. 72°41'42", on left bank at downstream side of plate-girder footbridge on Riverside Street in Hartford, Hartford County, 1,300 ft downstream from confluence of North and South Branches, 1,300 ft upstream from Capitol Avenue Bridge, 0.9 mile upstream from inlet of Park River conduit, and 2.0 miles upstream from mouth.

Drainage area.--74.0 sq mi.

Records available.--October 1936 to September 1952.

Gage.--Water-stage recorder above spillway of timber dam. Datum of gage is 27.13 ft above mean sea level, datum of 1929 (levels by Department of Engineering, city of Hartford).

Average discharge.--16 years, 116 cfs.

Extremes.--Maximum discharge during year, 2,160 cfs Mar. 11 (gage height, 6.27 ft); minimum, 22 cfs July 27 (gage height, 2.35 ft); minimum daily discharge, 25 cfs July 27, 1936-52: Maximum discharge, 5,650 cfs Jan. 25, 1938 (gage height, 9.16 ft); minimum, about 4 cfs Sept. 23, 1937; minimum gage height, 1.58 ft July 23, Aug. 15, 1943, result of temporary diversions upstream; minimum daily discharge, 11 cfs Oct. 6, 1941. Flood of Mar. 12, 1936, reached a stage of 9.0 ft, as determined from floodmarks by city engineers of Hartford (discharge, 5,400 cfs). A stage of 10.7 ft, from floodmarks, was caused Mar. 21, 1936 (backwater from Connecticut River).

Remarks.--Records good. Some regulation by mills above station and by storage and diversion at Hartford water-supply reservoirs on small headwater streams.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	170	88	254	174	125	*141	*242	1,200	64	*37	129
2	*32	161	88	339	240	99	147	189	<u>1,330</u>	*54	35	<u>272</u>
3	32	628	*88	331	250	99	154	158	<u>*474</u>	48	41	94
4	29	699	82	219	378	105	137	144	265	38	44	*57
5	29	208	218	152	*387	219	564	137	238	41	78	48
6	32	128	299	135	233	222	<u>960</u>	109	182	45	182	41
7	62	544	163	115	184	264	316	103	147	41	192	36
8	<u>327</u>	<u>972</u>	128	112	160	236	208	94	106	36	75	36
9	85	230	142	105	170	258	175	88	91	43	50	38
10	49	132	166	102	149	283	158	<u>77</u>	85	268	175	38
11	57	105	118	99	174	<u>984</u>	137	94	82	<u>383</u>	235	34
12	77	96	112	93	180	<u>1,310</u>	121	<u>443</u>	72	88	88	32
13	52	88	99	<u>88</u>	118	<u>461</u>	118	242	67	61	118	34
14	38	109	82	105	105	325	413	141	57	46	67	<u>29</u>
15	36	*205	82	177	99	223	425	121	57	44	48	<u>34</u>
16	43	184	76	261	90	178	389	97	59	39	103	48
17	41	233	70	202	115	164	212	80	62	37	<u>316</u>	41
18	38	135	105	500	132	164	164	109	82	33	<u>134</u>	34
19	38	109	233	360	125	172	141	106	67	31	67	84
20	36	96	188	330	128	321	121	121	62	31	48	69
21	34	85	837	332	132	407	112	284	54	44	53	43
22	36	76	846	156	125	280	103	178	52	44	137	48
23	38	85	299	*834	118	316	106	106	67	39	69	41
24	41	138	198	407	109	394	97	77	59	37	41	38
25	223	128	166	191	118	292	152	178	52	35	41	36
26	91	260	174	630	125	234	420	376	52	29	41	36
27	57	238	166	830	*125	208	337	182	52	<u>25</u>	38	34
28	45	118	135	526	118	182	796	134	<u>48</u>	27	38	32
29	45	99	128	371	125	164	699	182	64	31	36	36
30	45	95	149	236	-	147	371	265	77	31	34	34
31	43	-	230	184	-	141	-	161	-	33	<u>29</u>	-
Total	1,862	6,455	5,955	8,776	4,686	8,977	8,394	5,018	5,362	1,846	2,680	1,606
Mean	60.1	215	192	283	162	290	280	162	179	59.5	86.5	53.5
Cfsm	0.812	2.91	2.59	3.82	2.19	3.92	3.78	2.19	2.42	0.804	1.17	0.723
In.	0.94	3.25	2.99	4.4Q	2.36	4.52	4.22	2.52	2.70	0.93	1.35	0.81

Calendar year 1951: Max 2,140 Min 22 Mean 145 Cfsm 1.96 In. 26.55  
 Water year 1951-52: Max 1,330 Min 25 Mean 168 Cfsm 2.27 In. 30.99

Peak discharge (base, 1,000 cfs).--Nov. 3 (11:30 p.m.) 1,150 cfs (4.84 ft); Nov. 7 (12 p.m.) 1,460 cfs (5.45 ft); Dec. 21 (10 p.m.) 1,400 cfs (5.36 ft); Jan. 23 (1:30 p.m.) 1,130 cfs (4.92 ft); Jan. 26 (9:30 p.m.) 1,220 cfs (5.03 ft); Mar. 11 (11:30 p.m.) 2,160 cfs (6.27 ft); Apr. 6 (12:30 a.m.) 1,590 cfs (5.52 ft); Apr. 28 (7:30 p.m.) 1,120 cfs (4.82 ft); June 1 (11 p.m.) 2,010 cfs (6.12 ft).  
 \* Discharge measurement made on this day.

## Hockanum River near East Hartford, Conn.

Location.--Lat 41°46'59", long. 72°35'16", on left bank 700 ft downstream from dam at Case Bros., Inc. paper mill,  $1\frac{1}{2}$  miles downstream from Hop Brook, and  $2\frac{1}{2}$  miles east of East Hartford, Hartford County.

Drainage area.--74.5 sq mi.

Records available.--September 1919 to September 1921, July 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 54.5 ft above mean sea level, datum of 1929 (levels by Department of Engineering, city of Hartford).

Average discharge.--26 years, 113 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 940 cfs Mar. 12 (gage height, 6.14 ft); minimum, 14 cfs June 21 (gage height, 1.00 ft); minimum daily, 25 cfs July 29.  
1919-21, 1928-52: Maximum discharge, 5,160 cfs Sept. 21, 1938 (gage height, 13.78 ft, from floodmark), by computation of flow over dam just above gage; practically no flow at times caused by regulation; minimum daily, 1.2 cfs Sept. 2, 1920.

Remarks.--Records good. Flow regulated by Shenipsit Lake (see p. 303), other small reservoirs and industrial plants above station.

Revisions (water years).--W 781: Drainage area. W 851: 1934(M), 1936(M). W 1051: 1920-21 and 1928-45 (monthly and yearly discharge and runoff). W 1201: 1920(M), 1929(M), 1931, 1932-34(m), 1944.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.2	25	3.0	244
1.6	60	4.0	430
2.0	104	5.4	750
2.5	168		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	99	60	186	209	81	151	279	263	70	59	34
2	101	116	89	217	229	50	180	236	372	73	56	184
3	56	214	123	174	270	170	172	141	290	73	50	109
4	57	244	102	197	291	160	170	169	274	73	106	88
5	57	215	185	166	289	171	144	214	228	65	92	84
6	40	144	182	182	259	145	360	172	209	60	138	39
7	30	177	154	194	228	159	295	168	118	111	218	28
8	154	*174	120	135	221	80	246	169	137	78	155	101
9	95	145	97	183	196	87	215	182	208	38	58	80
10	73	105	141	176	210	207	205	86	136	182	129	73
11	83	100	122	193	227	372	147	77	136	204	317	67
12	99	122	83	129	208	729	179	291	120	76	140	66
13	63	120	97	148	192	404	164	224	138	72	104	35
14	44	143	123	180	176	303	261	196	99	124	93	30
15	55	141	68	147	169	217	263	204	90	81	135	50
16	80	103	37	180	125	198	203	*160	84	71	68	66
17	66	83	95	175	175	229	223	78	86	70	110	63
18	61	111	*100	209	225	179	188	90	90	73	177	63
19	49	125	100	179	*174	183	117	191	108	38	112	72
20	38	104	120	197	185	221	146	171	136	32	87	38
21	33	106	450	*238	186	244	199	153	41	92	76	29
22	38	52	470	162	182	200	*152	155	35	73	*89	55
23	56	119	270	288	130	231	135	193	74	66	42	65
24	66	78	252	242	151	283	153	104	89	64	34	65
25	104	115	234	157	188	259	188	114	92	67	100	66
26	100	169	254	272	164	235	142	245	113	34	81	64
27	45	158	229	360	161	*220	208	199	138	28	75	34
28	39	132	197	351	156	215	370	92	63	26	75	29
29	92	117	163	313	122	157	360	134	41	25	75	47
30	100	111	204	253	-	179	281	131	43	33	40	77
31	84	-	210	218	-	209	-	137	-	48	33	-
Total	2,113	3,942	5,111	6,381	5,698	6,777	6,217	5,135	4,051	2,220	3,122	1,900
Mean	68.2	131	165	206	196	219	207	166	135	71.6	101	63.3
(t)	-9.2	+32.6	+8.8	+8.8	-19.2	+28.5	+8.3	-3.4	-12.3	-20.8	-9.2	-13.3

Adjusted for change in contents in Shenipsit Lake

	Mean	59.0	164	174	215	177	248	215	163	123	50.8	91.8	50.0
Cfsm	0.792	2.20	2.34	2.89	2.38	3.33	2.89	2.19	1.65	0.682	1.23	0.671	
In.	0.91	2.46	2.70	3.33	2.57	3.84	3.22	2.52	1.84	0.79	1.42	0.75	

	Observed						Adjusted					
Calendar year 1951:	Max	764	Min	28	Mean	141	Max	143	Cfsm	1.92	In.	26.00
Water year 1951-52:	Max	729	Min	25	Mean	144	Max	144	Cfsm	1.93	In.	26.35

Peak discharge (base, 900 cfs).--Mar. 12 (2 a.m.) 940 cfs (6.14 ft).

\* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Shenipsit Lake; furnished by Rockville Water & Aqueduct Co.

## Salmon River near East Hampton, Conn.

Location.--Lat 41°33'11", long. 72°26'57", on right bank at Old Comstock Bridge, a short distance downstream from New London-Middlesex county line, 0.6 mile downstream from Dickinson Creek, and 3½ miles southeast of East Hampton, Middlesex County.

Drainage area.--105 sq mi.

Records available.--July 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 69.50 ft above mean sea level, datum of 1929.

Average discharge.--24 years (1928-52), 175 cfs.

Extremes.--Maximum discharge during year, 4,390 cfs Mar. 11 (gage height, 5.66 ft); minimum, 12 cfs Oct. 1-3, July 31; minimum daily, 12 cfs Oct. 1-3, July 31; minimum gage height, 0.60 ft Oct. 1-3.

1928-52: Maximum discharge, 12,400 cfs Sept. 21, 1938 (gage height, 10.96 ft), by computation of flow over dam half a mile upstream; minimum, 1.0 cfs Oct. 31, 1935 (gage height, -0.17 ft); minimum daily, about 1 cfs Oct. 13, 1929.

Remarks.--Records good. Slight regulation at low flow by mills above station.

Revisions (water years).--W 1201: 1929.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 12				Mar. 13 to Sept. 30			
0.6	12	2.0	370	0.6	12	1.5	170
.8	34	3.0	1,020	.7	17	2.0	345
1.0	65	4.2	2,280	.9	40	3.0	910
1.5	184			1.2	95		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	152	138	317	334	190	206	329	685	50	14	64
2	12	215	153	289	435	182	200	278	777	37	15	242
3	12	866	123	321	a470	176	200	250	426	31	17	150
4	13	793	116	270	a500	173	191	226	278	27	16	72
5	14	360	148	248	a550	278	478	210	239	25	26	51
6	14	215	270	235	a420	289	762	200	216	23	80	40
7	15	340	215	b200	a360	313	426	194	203	21	136	34
8	93	460	184	b175	a320	285	321	179	165	20	69	31
9	74	278	187	185	a300	266	278	162	143	21	43	35
10	*45	193	*196	178	a290	281	253	148	143	146	416	26
11	38	159	162	b155	a280	2,000	232	170	130	359	592	25
12	50	135	146	b155	a320	*2,020	210	*604	116	160	219	20
13	44	120	128	164	238	868	200	421	100	74	406	22
14	34	130	111	*167	212	640	522	282	84	48	208	19
15	29	228	140	225	193	490	555	232	76	36	111	19
16	26	225	b120	343	190	403	475	216	69	30	95	31
17	23	270	b100	278	250	353	345	188	61	25	292	25
18	22	209	b290	455	313	329	282	210	74	22	173	22
19	22	162	586	388	338	333	250	210	67	24	100	50
20	21	b130	455	352	321	495	226	236	65	22	*67	102
21	20	b110	2,220	343	289	535	*210	394	53	19	56	58
22	20	b100	1,150	272	259	435	188	286	61	19	165	43
23	19	113	b520	1,420	b230	421	185	218	80	17	102	37
24	22	176	370	690	224	*421	173	179	60	16	65	36
25	135	203	309	384	*216	365	212	210	46	14	48	34
26	111	278	334	918	b205	317	373	305	37	14	39	30
27	65	274	b275	1,140	212	282	381	242	40	14	35	27
28	50	b180	225	759	203	256	842	185	36	14	31	25
29	45	159	258	580	200	239	694	162	52	14	44	23
30	38	146	274	379	-	222	440	185	78	13	30	22
31	35	-	352	313	-	210	-	216	-	12	27	-
Total	1,173	7,379	10,215	12,298	8,672	14,067	10,310	7,525	4,660	1,367	3,737	1,395
Mean	37.8	246	330	397	299	454	344	243	155	44.1	121	46.5
Cfsm	0.360	2.34	3.14	3.78	2.85	4.32	3.28	2.31	1.48	0.420	1.15	0.443
In.	0.42	2.61	3.62	4.36	3.07	4.98	3.66	2.68	1.65	0.48	1.33	0.49

Calendar year 1951: Max 2,220 Min 9 Mean 211 Cfsm 2.01 In. 27.33

Water year 1951-52: Max 2,220 Min 12 Mean 226 Cfsm 2.15 In. 29.33

Peak discharge (base, 1,300 cfs),--Nov. 3 (6 p.m.) 1,430 cfs (3.44 ft); Dec. 21 (12:30 p.m.) 3,080 cfs (4.79 ft); Jan. 23 (7 a.m.) 1,700 cfs (3.70 ft); Jan. 26 (8 to 9 p.m.) 1,490 cfs (3.50 ft); Mar. 11 (7 p.m.) 4,390 cfs (5.66 ft).

\* Discharge made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

## East Branch Eightmile River near North Lyme, Conn.

Location.--Lat 41°25'40", long. 72°20'05", on left bank at highway bridge on Connecticut Highway 156, 0.4 mile upstream from confluence with West Branch, 1.1 miles north of North Lyme, New London County, 1.2 miles south of North Plain, and 5½ miles upstream from mouth of Eightmile River.

Drainage area.--22.0 sq mi.

Records available.--September 1937 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 55.21 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 44.4 cfs.

Extremes.--Maximum discharge during year, 730 cfs Dec. 21 (gage height, 4.22 ft); minimum, 1.2 cfs Aug. 1 (gage height, 0.19 ft).

1937-52: Maximum discharge, 2,950 cfs Sept. 21, 1938 (gage height, 7.00 ft), computed on basis of study of flow at contracted-control section; no flow Sept. 3, 1938, result of regulation; minimum daily, about 0.03 cfs Oct. 2, 1941.

Remarks.--Records good. Slight regulation at low flow.

Rating table, water year 1951-52, except periods of ice effect and backwater from leaves or debris (gage height, in feet, and discharge, in cubic feet per second)

0.2	1.3	1.5	102
.3	3.8	2.0	162
.5	11	2.5	233
.7	23	3.0	329
1.0	50	3.7	550

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	25	47	78	100	51	55	83	113	13	1.3	12
2	1.7	53	44	73	109	54	54	70	178	9.5	1.7	47
3	1.7	140	40	83	118	47	58	63	110	8.3	3.2	36
4	1.9	217	37	90	141	45	55	58	66	7.2	2.9	17
5	2.4	*95	43	88	189	73	60	53	63	6.8	4.1	12
6	2.4	66	77	90	144	92	112	49	59	6.1	6.1	10
7	2.9	c83	80	73	111	99	96	48	58	5.4	12	8.3
8	c12	131	63	b55	94	90	74	44	46	11	14	7.2
9	c14	96	57	57	90	78	63	40	47	22	9.1	6.8
10	9.1	65	*56	52	86	77	58	38	50	42	29	6.1
11	7.2	50	49	b47	84	249	53	43	41	81	108	5.7
12	8.3	42	43	47	93	*502	48	*110	34	46	51	5.0
13	9.1	36	42	45	*b56	208	45	123	29	20	110	4.7
14	7.2	34	35	47	b62	159	68	80	25	12	112	4.4
15	6.4	48	41	57	b57	131	102	62	21	9.5	38	4.4
16	5.7	70	b42	80	54	113	94	56	15	8.3	22	20
17	5.4	111	b34	*73	63	100	77	47	14	6.8	305	14
18	5.0	89	b45	101	89	89	62	50	15	6.4	191	18
19	4.7	65	117	113	114	89	53	53	15	6.1	74	47
20	4.7	52	b118	91	93	138	48	58	15	5.4	*37	35
21	4.7	43	448	89	83	138	*44	110	14	4.7	25	19
22	4.7	37	338	73	74	111	42	98	16	5.0	64	13
23	4.7	38	159	206	69	103	41	66	21	4.1	59	12
24	4.7	46	123	180	61	*106	38	51	16	3.2	29	12
25	21	60	103	110	60	102	41	53	13	2.6	19	11
26	27	80	b108	221	58	90	63	83	11	2.1	14	10
27	15	105	b102	396	57	78	75	79	9.5	2.1	12	8.7
28	12	76	b75	220	54	71	148	54	8.3	4.1	11	7.5
29	12	58	72	185	55	171	36	10	3.8	3.8	11	6.8
30	11	52	72	b127	52	60	108	42	18	2.9	10	6.1
31	10	-	82	b104	-	57	-	46	-	1.9	9.1	-
Total	240.5	2,163	2,792	3,351	2,516	3,459	2,106	1,946	1,157.8	369.3	1,394.5	426.7
Mean	7.76	72.1	90.1	108	86.8	112	70.2	62.8	38.6	11.9	45.0	14.2
Cfsm	0.353	3.28	4.10	4.91	3.95	5.09	3.19	2.85	1.75	0.541	2.05	0.645
In.	0.41	3.66	4.73	5.66	4.26	5.87	3.56	3.29	1.95	0.62	2.36	0.72

Calendar year 1951: Max 448

Min 1.5

Mean 54.5

Cfsm 2.48

In. 33.70

Water year 1951-52: Max 502

Min 1.3

Mean 59.9

Cfsm 2.72

In. 37.09

Peak discharge (base, 300 cfs).--Dec. 21 (5:30 p.m.) 730 cfs (4.22 ft); Jan. 27 (3 a.m.) 530 cfs (3.69 ft); Mar. 12 (2:30 a.m.) 710 cfs (4.13 ft); Aug. 17 (4 p.m.) 410 cfs (3.28 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

c Backwater from leaves or debris on control.



## West Branch Eightmile River at North Plain, Conn.

Location.--Lat 41°26'30", long. 72°20'00", at center of span on downstream side of bridge on State Highway 82 at North Plain, Middlesex County, 500 ft downstream from Strongs Brook, 0.8 mile upstream from confluence with East Branch, and 6 miles upstream from mouth of Eightmile River.

Drainage area.--18.6 sq mi.

Records available.--September 1937 to September 1952. Published as "near North Lyme" September 1937 to April 1939.

Gage.--Wire-weight gage read once daily. Datum of gage is 57.74 ft above mean sea level, datum of 1929. Prior to May 1, 1939, staff gage at bridge 0.7 mile downstream at datum 12.17 ft lower.

Average discharge.--15 years, 38.2 cfs (adjusted to present site).

Extremes.--Maximum discharge during year, 650 cfs Dec. 21 (gage height, 6.05 ft); minimum, 1.3 cfs Oct. 3-5 (gage height, 1.76 ft).  
1937-52: Maximum discharge, 1,810 cfs Sept. 21, 1938 (gage height, 8.2 ft, from floodmarks, site and datum then in use), by computation of flow through submerged highway bridge; minimum observed, 0.05 cfs Sept. 12, 1944 (gage height, 1.60 ft).

Remarks.--Records good.

Revisions (water years).--W 1141: 1948.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	0.7	2.6	32
1.8	1.9	3.0	64
1.9	3.5	3.5	120
2.0	5.7	4.0	215
2.2	12	5.1	435

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	23	32	56	84	37	43	71	142	11	2.0	17
2	1.9	27	31	55	90	36	42	60	119	8.5	2.2	48
3	1.3	180	28	74	84	33	45	54	82	8.0	3.7	35
4	1.3	136	27	64	120	32	39	49	64	7.3	3.2	19
5	1.3	69	34	69	135	64	a95	46	54	6.3	5.6	16
6	1.5	50	65	63	107	58	119	41	43	5.6	13	14
7	1.6	84	50	49	84	57	70	40	46	5.1	17	12
8	15	100	46	b44	74	55	63	37	39	4.9	8.8	11
9	*6.5	57	42	39	74	53	59	33	41	4.9	5.8	10
10	4.3	46	*41	a58	62	53	54	31	37	40	130	9.6
11	7.2	38	36	35	69	312	49	37	33	45	145	8.6
12	7.8	29	33	34	64	*355	43	133	29	21	39	8.0
13	5.0	29	30	33	*55	215	41	88	24	a12	145	7.7
14	4.1	33	28	36	53	145	88	67	22	a9.1	84	7.2
15	3.5	50	39	51	49	107	82	58	24	a7.8	43	6.9
16	3.1	48	43	*64	44	90	77	50	18	a7.3	33	7.7
17	3.1	65	b53	*49	50	79	71	41	18	*a6.7	295	8.6
18	3.1	49	b50	95	a62	74	58	50	21	a6.0	145	15
19	3.0	39	b135	74	69	90	51	46	16	a5.8	74	35
20	2.8	32	b130	69	64	135	46	54	14	a5.6	*39	27
21	2.7	28	b430	69	61	107	*42	112	12	a5.3	31	21
22	2.8	27	245	62	52	84	38	93	16	a6.0	74	16
23	2.8	26	128	290	50	90	36	54	14	4.9	38	16
24	2.8	42	95	145	49	84	34	46	13	4.1	30	a16
25	19	39	79	90	47	74	41	52	12	3.4	21	a15
26	12	*80	84	275	47	69	61	77	9.5	2.6	20	a13
27	7.5	79	74	275	45	58	82	57	9.2	2.5	15	a11
28	7.8	43	54	195	39	53	194	43	8.2	3.5	15	a10
29	7.5	38	59	135	38	50	142	37	11	2.6	14	a8.6
30	6.7	35	58	107	-	45	100	34	16	2.3	14	7.7
31	5.9	-	60	95	-	44	-	48	-	2.0	13	-
Total	157.3	1,621	2,319	2,829	1,921	2,838	2,005	1,739	1,006.9	267.1	1,518.3	457.6
Mean	5.07	54.0	74.8	91.3	66.2	91.5	66.8	56.1	33.6	8.62	49.0	15.3
Cfsm	0.273	2.90	4.02	4.91	3.56	4.92	3.59	3.02	1.81	0.463	2.63	0.822
In.	0.32	3.24	4.64	5.66	3.84	5.67	4.00	3.48	2.02	0.53	3.03	0.92

Calendar year 1951: Max 430 Min 1.3 Mean 46.0 Cfsm 2.47 In. 33.58

Water year 1951-52: Max 430 Min 1.3 Mean 51.0 Cfsm 2.74 In. 37.35

Peak discharge (base, 250 cfs).--Nov. 3 (time unknown) 295 cfs (4.5 ft); Dec. 21 (8:45 a.m.) 650 cfs (6.05 ft); Jan. 23 (time unknown) 415 cfs (5.0 ft); Jan. 26 (time unknown) 475 cfs (5.3 ft); Mar. 11 (time unknown) 800 cfs (5.75 ft); Aug. 10 (time unknown) 302 cfs (4.35 ft); Aug. 17 (time unknown) 375 cfs (4.8 ft).

\* Discharge measurement made on this day.

a No gage readings; discharge estimated on basis of weather records and records for station on East Branch.

b Stage-discharge relation affected by ice.

## Reservoirs in Connecticut River basin

First Connecticut and Second Connecticut Lakes on Connecticut River are operated as a unit for storage of water for power. The reservoirs in downstream order and usable capacity of each are as follows: Second Lake, 12 miles northeast of Pittsburg, N. H., 506,000,000 cu ft; First Lake, 5  $\frac{2}{3}$  miles northeast of Pittsburg, N. H., 3,330,000,000 cu ft. Records furnished by New England Power Co.

Lake Francis on Connecticut River at Pittsburg, N. H., completed in March 1940, used for storage of water for power, has usable capacity of 4,326,000,000 cu ft. Records furnished by New Hampshire Water Resources Board.

Comerford Station Pond on Connecticut River, 4 $\frac{1}{2}$  miles northeast of Barnet, Vt., completed in 1930 for storage of water for hydroelectric power development, has usable capacity of 1,279,000,000 cu ft. Records furnished by New England Power Co.

Union Village Reservoir on Ompompanoosuc River, 1 $\frac{1}{4}$  miles north of Union Village, Vt., completed in 1949 for flood control, has usable capacity of 1,660,000,000 cu ft. Records furnished by Corps of Engineers.

Lakes and ponds in Mascoma River basin.--These reservoirs are operated as a unit for storage of water for power. The reservoirs and usable capacity of each are as follows: Goose Pond, 5 $\frac{1}{2}$  miles northeast of Mascoma, N. H., 509,000,000 cu ft; Grafton Pond, 8 $\frac{1}{2}$  miles southeast of Mascoma, 144,000,000 cu ft; Crystal Lake, 5 $\frac{1}{2}$  miles southeast of Mascoma, 75,000,000 cu ft; Mascoma Lake at Mascoma, 337,000,000 cu ft; total usable capacity of the four reservoirs, 1,060,000,000 cu ft. Records furnished by New England Power Co.

Sunapee Lake on Sugar River at Sunapee, N. H., used for recreation and storage of water for power, has a usable capacity of 862,000,000 cu ft. Records collected by Geological Survey.

Surry Mountain Reservoir on Ashuelot River, 4 $\frac{1}{2}$  miles north of Keene, N. H., completed in 1942 for flood control, has usable capacity of 1,420,000,000 cu ft. Records furnished by Corps of Engineers.

Birch Hill Reservoir on Millers River, 1 mile east of South Royalston, Mass., completed in 1941 for flood control, has usable capacity of 2,180,000,000 cu ft. Records furnished by Corps of Engineers.

Tully Reservoir on East Branch Tully River, 3 $\frac{1}{2}$  miles north of Athol, Mass., completed in 1948 for flood control, has usable capacity of 958,000,000 cu ft. Records furnished by Corps of Engineers.

Somerset and Harriman Reservoirs in Deerfield River basin are operated as a unit for storage of water for hydroelectric power development. The downstream order and usable capacity of each are as follows: Somerset Reservoir on East Branch Deerfield River, 2 $\frac{1}{2}$  miles northeast of Somerset, Vt., 2,500,000,000 cu ft; Harriman Reservoir on Deerfield River at Davis Bridge, Vt., 5,060,000,000 cu ft. Records furnished by New England Power Co.

Quabbin Reservoir on Swift River, 3 $\frac{1}{4}$  miles east of Belchertown, Mass., completed in August 1939 for storage of water for municipal supply, has usable capacity of 55,700,000,000 cu ft. Records furnished by Water Division, Metropolitan District Commission.

Ludlow Reservoir in Chicopee River basin, 3 $\frac{1}{4}$  miles northwest of Three Rivers, Mass., completed in 1875 for storage of water for municipal supply, has usable capacity of 201,000,000 cu ft. Records furnished by Board of Water Commissioners, Springfield, Mass.

Watersheds Pond on Mill River in Springfield, Mass., completed in 1857 for storage of water for power, has usable capacity of 70,600,000 cu ft. Records furnished by Ordnance Department, Department of the Army.

Knightville Reservoir on Westfield River, 4 miles north of Huntington, Mass., completed in 1941 for flood control, has usable capacity of 2,130,000,000 cu ft. Records furnished by Corps of Engineers.

Borden Brook and Cobble Mountain Reservoirs in Westfield Little River basin are operated as a unit for storage of water for municipal supply and for hydroelectric power development. The downstream order and usable capacity of each are as follows: Borden Brook Reservoir on Borden Brook, 3 $\frac{1}{2}$  miles south of Blandford, Mass., 344,000,000 cu ft; Cobble Mountain Reservoir on Westfield Little River, 6 $\frac{1}{2}$  miles west of Westfield, Mass., 3,050,000,000 cu ft. Records furnished by Board of Water Commissioners, Springfield, Mass.

Otis Reservoir in Farmington River basin, lat 42°09'35", long. 73°03'33", 1 mile northeast of Cold Spring, Berkshire County, Mass. Drainage area, 17.2 sq mi. Completed in 1865 for storage of water for power. Usable capacity, 780,000,000 cu ft. Records available, April 1913 to September 1952. Records furnished by Collins Co., Collinsville, Conn.

Barkhamsted, East Branch and Nepaug Reservoirs in Farmington River basin are operated as a unit for municipal water supply and compensation for water diverted from river. The downstream order and capacity are as follows: Barkhamsted Reservoir on East Branch Farmington River, lat 41°54'38", long. 72°57'15", 1 $\frac{1}{4}$  miles south of Barkhamsted, Litchfield County, Conn. Drainage area, 53.8 sq mi. Completed in 1939 for storage of water for municipal supply. Total capacity, 4,250,000,000 cu ft. Records available, March 1940 to September 1952. East Branch Reservoir on East Branch Farmington River, lat 41°52'49", long. 72°57'30", 1 mile east of New Hartford, Litchfield County, Conn.

## Reservoirs in Connecticut River basin--Continued

Barkhamsted, East Branch and Nepaug Reservoirs--Continued.--Drainage area, 61.2 sq mi. Completed in 1919 for storage of water to compensate for water diverted from the river. Total capacity, 400,000,000 cu ft. Records available, August 1928 to September 1952. Nepaug Reservoir on Nepaug River, lat 41°49'37", long. 72°56'34", 1½ miles northwest of Collinsville, Hartford County, Conn. Drainage area, 32.0 sq mi. Completed in 1918 for storage of water for municipal supply. Total capacity, 1,280,000,000 cu ft. Records available, August 1928 to September 1952. All three reservoirs are equipped with water-stage recorders. Records furnished by Water Bureau, Metropolitan District Commission, Hartford, Conn.

Whigville Reservoir on North Branch Pequabuck River, lat 41°44'08", long. 72°57'02", at Whigville, Hartford County, Conn. Drainage area, 3.95 sq mi. Completed in 1908 for storage of water for domestic water supply. Total capacity, 8,650,000 cu ft. Records available, July 1928 to September 1952. Records furnished by Board of Water Commissioners, New Britain, Conn.

Shenipsit Lake on Hockanum River, lat 41°52'06", long. 72°25'59", three-quarters of a mile east of Rockville, Tolland County, Conn. Drainage area, 16.5 sq mi. Dam raised to its present crest elevation in 1871, providing a usable capacity of 250,000,000 cu ft for municipal supply and power; total capacity of lake, 730,000,000 cu ft. Capacities based on lake survey by Connecticut State Board of Fisheries and Game. Records available, September 1919 to September 1921, July 1928 to September 1952. Stage records furnished by Rockville Water & Aqueduct Co.

Monthly change in reservoir contents, in millions of cubic feet, water year  
October 1951 to September 1952

Date	First and Second Connecticut Lakes	Lake Francis	Comerford Station Pond	Union Village Reservoir	Lakes and ponds in Mascoma River basin	Sunapee Lake*	Surry Mountain Reservoir
Sept. 30, 1951	2,668.1	3,318.4	1,340	1.0	996.2	415	0.4
Oct. 31.....	2,019.4	2,811.9	1,266	1.4	1,164.9	464	6.7
Nov. 30.....	2,469.3	3,207.0	1,047	8.3	1,170.2	439	31.1
Dec. 31.....	2,383.3	3,104.6	1,239	13.7	1,127.9	374	40.3
Jan. 31, 1952	1,814.6	2,422.9	1,190	13.2	1,062.4	350	118.2
Feb. 29.....	937.1	1,304.0	1,172	8.6	803.2	282	33.5
Mar. 31.....	470.7	524.9	730	3.0	501.5	282	4.0
Apr. 30.....	2,127.2	2,459.2	1,018	3.0	1,093.2	678	203.4
May 31.....	3,234.5	3,282.4	1,180	2.4	1,126.6	704	1.2
June 30.....	3,644.2	4,160.1	1,275	1.8	937.0	581	39.4
July 31.....	3,098.1	3,768.4	1,172	1.3	752.5	452	39.4
Aug. 31.....	2,681.2	3,318.4	1,180	1.2	586.1	347	37.5
Sept. 30.....	2,182.5	2,949.5	1,321	1.3	467.1	248	.1

Date	Birch Hill Reservoir	Tully Reservoir	Somerset and Harriman Reservoirs	Quabbin Reservoir†	Ludlow Reservoir	Water-shops pond	Knightville Reservoir
Sept. 30, 1951	1.3	0.1	6,046.7	‡52,779	129.7	70.3	0.2
Oct. 31.....	4.5	.4	6,254.0	52,309	150.5	70.3	.5
Nov. 30.....	4.7	19.0	6,423.1	53,064	177.8	72.4	9.3
Dec. 31.....	7.0	23.6	6,261.7	53,985	177.1	71.8	13.8
Jan. 31, 1952	67.0	77.0	6,334.7	55,153	181.1	71.8	14.0
Feb. 29.....	3.4	16.4	5,330.4	55,007	172.2	71.1	9.5
Mar. 31.....	14.2	2.1	3,077.5	55,221	179.5	71.8	5.3
Apr. 30.....	19.3	1.6	6,587.4	55,698	181.1	72.4	1.2
May 31.....	5.1	.4	7,115.3	55,550	177.9	72.4	.8
June 30.....	2.6	.2	6,807.3	55,255	169.1	71.1	.3
July 31.....	1.3	0	5,896.3	54,640	160.8	71.1	.1
Aug. 31.....	1.3	0	5,448.4	53,910	175.1	72.4	.1
Sept. 30.....	1.3	.1	4,942.8	52,863	180.3	71.1	.1

Date	Borden Brook and Cobble Mountain Reservoirs	Otis Reservoir	Barkhamsted, East Branch, and Nepaug Reservoirs	Whigville Reservoir	Shenipsit Lake		
Sept. 30, 1951	2,930.8	546	4,652	5.8	586.2		
Oct. 31.....	2,968.4	445	4,362	6.2	561.6		
Nov. 30.....	3,206.8	535	4,946	6.9	646.2		
Dec. 31.....	3,118.0	451	5,414	8.7	669.8		
Jan. 31, 1952	3,113.4	334	5,756	8.7	693.4		
Feb. 29.....	2,897.5	293	5,143	8.1	645.3		
Mar. 31.....	2,744.9	478	5,489	6.7	721.6		
Apr. 30.....	3,183.2	673	5,914	8.7	743.2		
May 31.....	3,336.0	765	5,914	8.9	734.0		
June 30.....	3,186.5	768	5,760	6.2	702.0		
July 31.....	2,807.0	761	5,478	4.1	646.2		
Aug. 31.....	2,425.5	753	5,122	5.7	621.6		
Sept. 30.....	2,266.4	590	4,863	3.8	587.1		

\* To obtain usable contents from figures of contents shown in Water-Supply Paper 1301, subtract 5,214 million cu ft.

† Affected by diversion from Ware River (none during water year) and diversion to Wachusett Reservoir and Chicopee Valley aqueduct.

\* Contents by capacity table used from Mar. 1, 1940, to Sept. 30, 1951, was 53,352 million cu ft.

## MENUNKETESUCK RIVER BASIN

Menunketesuck River near Clinton, Conn.

Location.--Lat 41°18'10", long. 72°31'00", on right bank at Fairy Dell, 100 ft downstream from Cobb's Bridge, 1.7 miles north of Clinton, Middlesex County, 2.4 miles downstream from Kelseytown Reservoir, and 4.9 miles upstream from mouth.

Drainage area.--11.6 sq mi.

Records available.--June 1941 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 23.64 ft above mean sea level, datum of 1929.

Average discharge.--11 years, 20.9 cfs (adjusted).

Extremes (unadjusted for storage or diversion).--Maximum discharge during year, 370 cfs Dec. 21 and Mar. 11; maximum gage height, 4.52 ft Dec. 21; minimum discharge, 0.10 cfs Oct. 1 (gage height, 0.64 ft).

1941-52: Maximum discharge, 870 cfs Nov. 12, 1947 (gage height, 6.72 ft), from rating curve extended above 270 cfs on basis of logarithmic plotting; no flow at times during August and September 1944; minimum gage height, 0.48 ft Sept. 9-12, 1944.

Remarks.--Records excellent except those for periods of backwater from rocks and debris and those below 2.5 cfs, which are good. The daily discharge record for all periods except those of low flow is a summation of daily flow at gaging station and daily diversion from Kelseytown Reservoir as measured by venturi meter. During periods of low flow, diversions from Kelseytown Reservoir are compensated for by release of water from Killingworth Reservoir which is located about 2.5 miles upstream from Kelseytown Reservoir on a small tributary of Menunketesuck River. The drainage area of Killingworth Reservoir is so small that its yield is considered negligible during periods of low flow when it becomes necessary to draw upon it. Therefore, the daily discharge record for periods of low flow Oct. 1-12, 15-25, June 26 to Aug. 10, Sept. 13-15, is a summation of daily flow at gaging station and daily diversion from Kelseytown Reservoir, minus daily draft on Killingworth Reservoir adjusted for daily change in contents in Kelseytown Reservoir. Draft on Killingworth Reservoir is determined at a staff-gage station just below spillway. Change in contents in Kelseytown Reservoir is determined at a temporary recording station at dam. No account is taken of evaporation from the reservoir surfaces. Flow at recording gage station regulated by Killingworth and Kelseytown Reservoirs and by diversion for domestic water supply from Kelseytown Reservoir.

Cooperation.--Venturi-meter records and some other data furnished by the Guilford-Chester Water Co.

Revisions (water years).--W 1301: 1942-44(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	7.9	21	33	38	21	22	42	82	2.8	0.9	8.0
2	.7	c18	19	31	41	20	22	34	95	2.6	1.0	22
3	.7	86	18	41	47	18	26	30	53	2.5	1.2	13
4	.7	105	18	42	56	18	24	25	36	2.4	1.2	8.5
5	c.8	*46	21	47	85	38	28	25	31	2.3	1.9	6.1
6	c.8	30	41	56	59	38	70	25	28	2.2	2.1	4.8
7	c1.0	49	35	41	45	38	45	21	25	2.3	2.9	4.5
8	c3.7	89	30	31	37	35	35	18	19	2.5	1.9	4.2
9	3.0	49	28	26	36	34	32	17	16	3.0	1.6	3.7
10	2.1	35	26	27	33	35	27	15	14	4.5	19	3.3
11	1.5	28	21	26	33	120	25	18	13	5.5	25	3.1
12	2.4	23	*19	22	*39	240	21	*84	11	3.7	10	2.9
13	2.1	20	18	21	28	91	20	63	9.1	3.0	67	2.7
14	2.0	18	15	21	21	64	39	41	7.5	2.5	26	2.6
15	1.9	26	24	29	20	50	53	32	6.9	2.2	14	3.8
16	1.7	33	24	36	18	41	*44	30	6.4	2.0	12	10
17	1.6	46	17	*29	28	*36	35	23	5.8	1.8	124	6.8
18	1.4	34	25	50	60	32	29	26	7.5	1.6	40	7.1
19	1.3	26	83	48	45	33	25	27	6.2	1.7	21	26
20	1.2	21	51	40	37	78	22	32	5.3	1.6	14	42
21	1.2	18	222	42	35	76	19	75	4.5	1.5	12	21
22	1.1	16	144	32	32	54	18	48	4.7	1.4	44	15
23	1.1	16	70	91	29	53	17	33	5.4	1.3	24	11
24	1.2	22	51	69	26	58	16	26	4.8	1.2	16	10
25	5.9	27	43	43	23	50	17	37	4.1	1.1	11	8.7
26	5.2	46	54	120	23	41	31	96	3.5	1.1	8.8	7.5
27	4.5	53	48	189	23	36	38	59	3.2	1.0	7.4	6.6
28	3.8	33	35	107	22	32	114	38	3.1	1.0	6.8	5.6
29	3.5	26	31	86	21	29	102	29	3.0	.9	*6.5	5.0
30	3.1	23	31	54	-	26	58	24	2.9	.9	5.9	4.7
31	2.5	-	35	41	-	23	-	26	-	.9	5.2	-
Total	64.2	1,069.9	1,318	1,571	1,038	1,558	1,074	1,119	516.7	65.0	534.3	280.2
Mean	2.07	35.7	42.5	50.7	35.8	50.3	35.8	36.1	17.2	2.10	17.2	9.34
Cfs/m	0.178	3.08	3.66	4.37	3.09	4.34	3.09	3.11	1.48	0.181	1.48	0.805
In.	0.21	3.44	4.22	5.04	3.33	5.00	3.45	3.58	1.65	0.21	1.71	0.90

Calendar year 1951: Max 222 Min 0.6 Mean 25.5 Cfs/m 2.20 In. 29.83  
 Water year 1951-52: Max 240 Min 0.7 Mean 27.9 Cfs/m 2.41 In. 32.74

Peak discharge (base, 200 cfs, unadjusted for storage or diversion).--Dec. 21 (2:30 p.m.) 370 cfs (4.52 ft); Jan. 25 (11 p.m.) 302 cfs (4.17 ft); Mar. 11 (12 p.m.) 370 cfs (4.48 ft); Aug. 17 (5:30 a.m.) 212 cfs (3.55 ft).

\* Discharge measurement made on this day.

c Backwater from leaves or debris on control.

## Quinnipiac River at Wallingford, Conn.

Location.--Lat 41°26'58", long. 72°50'29", on right bank 0.8 mile downstream from Quinnipiac Street Bridge in Wallingford, New Haven County, and 2 miles upstream from Worton Brook.

Drainage area.--109 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder and timber control. Datum of gage is 20.24 ft above mean sea level, datum of 1929.

Average discharge.--22 years, 204 cfs.

Extremes.--Maximum discharge during year, 2,270 cfs Mar. 12 (gage height, 7.42 ft); minimum, 29 cfs Oct. 7 (gage height, 0.52 ft).

1930-52: Maximum discharge, 5,230 cfs Sept. 21, 1938 (gage height, 9.55 ft), by computation of flow over dam 1 mile upstream; minimum, 8 cfs Nov. 2, 1930 (gage height, 0.38 ft).

Remarks.--Records excellent. Flow regulated by mills above station.

Revisions (water years).--W 781: Drainage area. W 851: 1933, 1936. W 971: 1940-42. W 1171: 1947 (calendar year mean). W 1201: 1931(M), 1932, 1934-35, 1937, 1949(M), 1950(M).

Rating table, water year 1951-52 (gage height, in feet,  
and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1 to Nov. 3)

0.5	31	3.0	530
1.0	84	4.0	765
1.5	158	6.0	1,380
2.0	265	7.3	2,180

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	134	173	375	405	230	268	568	951	160	71	139
2	43	173	169	405	465	212	265	450	1,950	142	73	300
3	42	546	166	480	505	205	270	378	1,270	132	77	248
4	44	705	164	405	580	205	255	342	765	117	77	158
5	42	457	248	355	580	308	492	310	630	107	74	129
6	39	263	405	320	568	350	940	292	530	104	100	130
7	49	465	350	282	435	365	790	298	465	102	183	104
8	204	*890	272	239	378	345	270	345	405	101	156	97
9	171	650	236	234	365	328	405	253	358	94	121	96
10	119	375	227	232	340	358	352	236	330	185	218	94
11	102	272	212	225	348	1,150	322	234	298	465	355	101
12	117	220	193	205	362	2,180	290	576	272	359	236	94
13	103	199	181	201	300	*1,220	275	605	253	205	272	92
14	84	208	*169	216	248	815	619	420	243	154	193	84
15	73	310	175	265	230	655	765	320	218	132	144	78
16	64	318	162	335	220	542	745	295	205	118	145	110
17	60	332	149	325	272	435	592	263	205	110	378	102
18	*57	275	208	492	368	390	*450	265	243	107	295	92
19	52	220	372	530	328	388	378	275	225	102	173	105
20	51	191	325	435	*308	530	340	298	197	98	137	110
21	38	175	1,250	465	298	618	308	480	189	100	124	105
22	47	168	1,380	372	280	542	282	435	201	109	195	94
23	44	169	833	*1,260	263	542	270	*318	197	101	179	97
24	56	203	580	1,000	251	555	258	258	187	92	132	96
25	168	218	450	618	239	505	282	348	177	85	116	93
26	175	308	435	798	234	*435	465	505	164	80	124	90
27	119	322	382	1,090	241	382	605	492	158	76	105	85
28	90	248	308	915	227	348	865	345	149	80	93	80
29	78	203	282	745	227	320	970	302	154	76	90	82
30	78	183	292	542	-	295	745	372	175	73	90	85
31	73	-	365	435	-	280	-	385	-	*71	90	-
Total	2,521	9,398	11,123	14,796	9,965	16,033	14,381	11,178	11,764	4,037	4,816	3,370
Mean	81.3	313	359	477	344	517	479	361	392	130	155	112
Cfsm	0.746	2.87	3.29	4.38	3.16	4.74	4.39	3.31	3.62	1.19	1.42	1.03
In.	0.86	3.20	3.79	5.05	3.41	5.46	4.90	3.82	4.02	1.37	1.64	1.15

Calendar year 1951: Max 1,710 Min 38 Mean 242 Cfsm 2.22 In. 30.13  
Water year 1951-52: Max 2,180 Min 38 Mean 310 Cfsm 2.84 In. 38.67

Peak discharge (base, 900 cfs).--Nov. 8 (4 p.m.) 915 cfs (4.63 ft); Dec. 21 (11 a.m.) 1,580 cfs (6.35 ft); Jan. 23 (8 a.m.) 1,380 cfs (6.03 ft); Jan. 27 (12 m.) 1,090 cfs (5.20 ft); Mar. 12 (11:30 a.m.) 2,270 cfs (7.42 ft); Apr. 6 (8:30 p.m.) 1,060 cfs (5.13 ft); Apr. 29 (9 a.m.) 1,000 cfs (4.87 ft); June 2 (8 to 11 a.m.) 2,100 cfs (7.15 ft).

\* Discharge measurement made on this day.

## HOUSATONIC RIVER BASIN

## East Branch Housatonic River at Coltsville, Mass.

Location.--Lat 42°28'10", long. 73°11'49", on right bank at Coltsville, Berkshire County, 1½ miles upstream from Unkamet Brook and 2 miles northeast of Pittsfield.

Drainage area.--57.1 sq mi.

Records available.--March 1936 to September 1952. Prior to October 1945, published as Housatonic River at Coltsville.

Gage.--Water-stage recorder. Datum of gage is 993.49 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 116 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 2,080 cfs June 1 (gage height, 7.28 ft), from rating curve extended above 1,300 cfs on basis of computations of flow over dam at gage heights 10.38 and 10.80 ft; minimum daily, 11 cfs Aug. 31.

1936-52: Maximum discharge, 6,400 cfs Sept. 21, 1938 (gage height, 10.80 ft), from rating curve extended above 1,300 cfs on basis of computation of peak flow over dam; minimum daily, 4.4 cfs Aug. 15, 1936.

Remarks.--Records good. Flow regulated by powerplants above station. Diversion above station from Cleveland Brook Reservoir for municipal supply of Pittsfield since May 1950.

Revisions (water years).--W 851: 1936(M).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

Apr. 6 to Sept. 30

2.2	37	1.8	7.5	3.5	267
2.5	71	2.0	17	4.0	412
3.0	150	2.2	31	5.0	800
3.5	267	2.5	66	6.0	1,260
		3.0	148		

Note.--Same as following table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	114	97	134	135	75	304	120	731	41	32	63
2	43	143	107	190	162	70	582	103	1,160	35	25	339
3	43	565	117	168	171	80	435	84	438	34	22	142
4	45	513	107	133	198	76	372	81	308	26	21	62
5	42	244	202	119	270	77	895	84	249	70	21	45
6	41	150	313	109	209	70	*1,150	70	146	45	27	36
7	42	308	198	106	155	69	523	70	111	46	36	29
8	344	570	162	84	152	64	339	72	92	34	28	39
9	168	300	199	94	125	61	300	58	92	*29	26	38
10	82	209	244	*98	107	70	302	61	102	73	24	*34
11	94	118	132	88	118	123	331	82	70	137	*39	35
12	449	138	104	86	104	208	241	506	67	89	38	36
13	207	122	88	89	80	158	199	383	54	47	95	31
14	117	138	*80	90	*84	138	446	257	44	46	69	30
15	101	286	80	116	85	104	396	202	48	38	34	38
16	85	*207	78	199	79	87	259	154	56	39	28	39
17	*73	202	78	147	84	94	209	131	42	35	163	38
18	69	148	76	231	89	88	176	146	80	23	85	36
19	63	127	79	206	87	92	154	140	59	25	46	73
20	65	113	78	178	87	93	122	131	46	28	33	76
21	59	97	157	191	87	*109	113	171	38	39	30	48
22	*65	86	212	127	89	130	97	192	39	29	32	49
23	67	175	164	185	84	157	94	146	50	30	27	42
24	65	208	132	161	78	174	*83	96	37	26	22	46
25	199	179	122	125	86	187	88	170	40	28	30	46
26	184	137	118	257	83	240	167	249	48	21	21	39
27	96	116	109	769	82	328	135	161	44	23	23	48
28	90	98	97	515	82	285	191	120	27	30	16	35
29	129	104	100	280	81	197	297	*108	39	17	23	42
30	99	96	101	169	-	169	168	120	53	14	14	41
31	78	-	129	133	-	213	-	111	-	19	11	-
Total	3,328	5,951	4,060	5,577	3,313	4,085	9,168	4,577	4,410	1,196	1,143	1,693
(†)	107	198	131	180	114	132	306	148	147	38.6	36.9	56.4
	162	165	150	122	160	170	120	188	157	167	145	146

Adjusted for diversion

Mean	115	207	138	186	123	140	312	157	155	46.9	44.1	64.0
Cfsm	2.01	3.63	2.42	3.26	2.15	2.45	5.46	2.75	2.71	0.821	0.772	1.12
In.	2.33	4.04	2.80	3.76	2.32	2.83	6.09	3.17	3.03	0.95	0.89	1.25

	Observed				Adjusted			
Calendar year 1951:	Max	1,860	Min	26	Mean	129	Mean	137
Water year 1951-52:	Max	1,160	Min	11	Mean	133	Mean	140
							Cfsm	2.40
							In.	32.53
							Cfsm	2.45
							In.	33.46

Peak discharge (base, 1,150 cfs).--Apr. 5 (12 p.m.), 1,700 cfs (6.75 ft); June 1 (10 p.m.), 2,080 cfs (7.28 ft).

\* Discharge measurement made on this day.

† Diversion above station from Cleveland Brook Reservoir for municipal supply of Pittsfield, in millions of gallons. Records furnished by city of Pittsfield.

## Housatonic River near Great Barrington, Mass.

Location.--Lat 42°13'55", long. 73°21'19", on left bank at upstream side of highway bridge at Van Deusenville, 0.5 mile upstream from Williams River and 2 miles north of Great Barrington, Berkshire County.

Drainage area.--280 sq mi.

Records available.--May 1913 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 683.04 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1931, staff gage at same site and datum.

Average discharge.--39 years, 529 cfs.

Extremes.--Maximum discharge during year, 3,790 cfs Apr. 6 (gage height, 7.97 ft); minimum daily, 64 cfs Aug. 23.

1913-52: Maximum discharge, 12,200 cfs Jan. 1, 1949 (gage height, 12.08 ft), from rating curve extended above 5,800 cfs on basis of computations of flow over dams at gage heights 11.72 and 12.08 ft; minimum daily, 1.0 cfs Oct. 18, 1914.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by powerplants above station.

Revisions (water years).--W 415: 1913 calendar year. W 781: 1928(M). W 1051: 1928, 1929(M), 1933.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	59	4.0	655
2.6	116	5.0	1,410
3.0	208	7.0	2,850
3.5	390	8.0	3,820

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	308	442	540	694	988	395	1,090	811	1,140	278	152	122
2	215	535	459	892	1,010	274	1,680	606	2,890	255	273	683
3	197	1,150	824	924	968	401	2,100	556	3,240	206	197	752
4	186	1,360	578	839	1,040	360	1,910	503	2,330	195	202	527
5	127	1,850	655	748	1,120	343	2,060	595	1,720	280	133	306
6	171	1,340	972	621	1,150	339	3,380	524	1,380	300	209	236
7	133	1,100	1,040	674	1,010	331	*3,440	472	1,220	248	*234	144
8	796	1,580	876	540	832	331	2,540	452	948	223	157	241
9	900	1,720	776	551	790	210	1,870	514	814	*205	124	225
10	597	1,420	980	540	682	387	1,550	325	643	270	83	164
11	414	1,070	932	508	738	482	1,380	381	607	582	171	*195
12	923	924	755	477	h700	1,190	1,230	888	535	493	166	195
13	1,090	818	625	406	b480	1,170	1,050	1,460	482	313	330	152
14	714	776	*556	520	504	924	1,240	1,300	399	265	342	135
15	641	1,030	529	533	508	694	1,510	1,020	301	282	254	221
16	498	*1,130	428	797	508	531	1,420	924	425	203	211	221
17	378	1,110	560	776	428	590	1,170	861	362	188	235	205
18	351	956	467	860	525	562	972	688	549	188	560	139
19	300	892	b490	1,010	551	619	790	783	498	160	382	228
20	296	734	b480	868	508	584	748	674	364	128	248	331
21	211	635	776	1,040	472	*584	741	720	315	126	180	248
22	410	514	1,210	776	477	790	631	825	215	192	212	290
23	*260	651	1,120	853	467	846	601	790	350	162	84	230
24	306	714	940	972	560	1,120	517	711	285	167	218	223
25	583	839	741	b750	474	1,060	*535	614	282	159	153	230
26	734	853	762	854	418	1,100	590	1,120	257	158	148	205
27	553	762	694	2,070	414	1,290	781	1,020	285	118	162	222
28	457	625	573	2,700	409	1,380	868	818	306	157	128	94
29	568	584	584	2,240	389	1,200	1,190	705	170	176	128	302
30	507	556	534	1,400	-	1,000	1,070	568	311	155	145	208
31	414	-	643	1,090	-	1,040	-	607	-	118	93	-
Total	14,258	29,390	21,929	28,523	18,938	22,127	40,654	22,635	23,623	6,930	6,295	7,664
Mean	459	980	707	920	653	714	1,355	730	787	224	203	255
Cfs/m	1.64	3.50	2.52	3.29	2.33	2.55	4.84	2.61	2.81	0.800	0.725	0.911
In.	1.89	3.90	2.91	3.79	2.52	2.94	5.40	3.01	3.14	0.92	0.84	1.02

Calendar year 1951: Max 4,100 Min 127 Mean 636 Cfs/m 2.27 In. 30.84

Water year 1951-52: Max 3,440 Min 64 Mean 664 Cfs/m 2.57 In. 32.28

Peak discharge (base, 2,400 cfs).--Jan. 28 (8 a.m.) 2,890 cfs (7.05 ft); Apr. 6 (11:30 p.m.) 3,790 cfs (7.97 ft); June 3 (8:15 a.m.) 3,590 cfs (7.79 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Green River near Great Barrington, Mass.

Location.--Lat 42°11'31", long. 73°23'28", on left bank 250 ft downstream from Seekonk Road highway bridge, 0.2 mile downstream from Seekonk Brook,  $1\frac{1}{2}$  miles west of Great Barrington, Berkshire County, and 3 miles upstream from mouth.

Drainage area.--52.5 sq mi.

Records available.--October 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 690 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,710 cfs Apr. 6 (gage height, 5.86 ft), from rating curve extended above 680 cfs by logarithmic plotting; maximum gage height, 5.91 ft June 1; minimum discharge, 8.0 cfs Aug. 29, 30.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 1)

Oct. 1 to June 1

June 2 to Sept. 30

1.19	8.8	2.5	224	1.25	8.0	2.5	168
1.3	18	3.0	364	1.4	16	3.0	288
1.5	38	4.0	725	1.6	33	4.0	625
2.0	113	5.0	1,200	2.0	81	5.0	1,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	104	97	139	169	51	247	131	663	30	11	21
2	11	117	99	174	188	50	482	119	*668	26	10	108
3	11	448	97	163	183	48	370	109	354	25	10	50
4	10	380	93	148	212	72	299	100	302	23	10	36
5	9.5	272	134	141	245	64	774	95	280	22	*10	25
6	8.8	222	146	135	202	54	*340	80	217	21	16	19
7	12	461	125	121	178	50	509	94	198	19	14	19
8	138	460	121	b110	161	47	*380	79	158	18	12	15
9	61	320	137	109	154	45	305	73	135	*20	12	14
10	43	261	141	*109	137	43	255	67	124	88	13	13
11	56	222	123	99	b140	300	216	85	107	74	13	*13
12	259	192	117	95	b120	290	192	226	96	39	12	12
13	134	174	106	92	b105	180	174	161	84	27	21	12
14	100	175	*95	90	*b94	150	280	148	73	22	18	12
15	85	229	95	115	b90	130	222	139	66	20	14	12
16	74	192	b90	154	87	130	183	133	59	18	14	13
17	67	*194	b87	123	85	125	158	115	72	16	28	12
18	60	167	b84	161	79	135	144	127	94	16	24	12
19	56	150	b89	148	76	125	131	113	63	16	16	23
20	51	133	b84	158	b74	135	121	109	54	15	14	35
21	48	119	226	154	74	*172	109	137	48	16	13	20
22	45	111	245	119	70	222	102	127	45	14	13	16
23	*43	111	185	176	66	242	97	108	44	13	12	15
24	42	152	165	150	63	258	89	97	40	12	12	15
25	112	133	148	119	61	272	*93	149	36	12	10	13
26	74	125	144	228	58	308	133	176	32	12	10	13
27	64	119	127	674	57	346	111	139	36	13	9.0	13
28	61	100	b110	467	56	302	171	119	31	13	8.5	12
29	68	99	115	346	54	255	190	109	34	12	9.4	11
30	60	95	115	b250	-	237	150	123	37	11	8.0	10
31	56	-	129	b190	-	229	-	104	-	10	8.5	-
Total	1,930.3	6,037	3,869	5,457	3,338	5,067	7,627	3,711	4,252	693	405.4	614
Mean	62.3	201	125	176	115	163	254	120	142	22.4	13.1	20.5
Cfsm	1.19	3.65	2.38	3.55	2.19	3.10	4.84	2.29	2.70	0.427	0.250	0.390
In.	1.37	4.28	2.74	3.87	2.36	3.59	5.40	2.63	3.01	0.49	0.29	0.43

Calendar year 1951: Max - Min - Mean - Cfsm - In. -  
Water year 1951-52: Max 940 Min 8.0 Mean 117 Cfsm 2.23 In. 30.46

Peak discharge (base, 750 cfs).--Nov. 3 (5 to 5:30 p.m.) 774 cfs (4.11 ft); Nov. 7 (5:30 p.m.) 965 cfs (4.53 ft); Jan. 27 (4:30 a.m.) 905 cfs (4.40 ft); Apr. 6 (2 a.m.) 1,710 cfs (5.86 ft); June 1 (10 p.m.) 1,640 cfs (5.91 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Feb. 29 to Mar. 20; discharge estimated on basis of weather records, recorded range in stage, and records for Housatonic River near Great Barrington.



## Blackberry River at Canaan, Conn.

Location.--Lat 42°01'26", long. 73°20'32", on right bank downstream from highway bridge on U. S. Highway 44, 0.7 mile southwest of Canaan, Litchfield County, and 1½ miles upstream from mouth.

Drainage area.--48.2 sq mi.

Records available.--July 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 645.72 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,670 cfs June 1 (gage height, 8.11 ft); minimum, 6.5 cfs July 25 (gage height, 1.50 ft); minimum daily, 8.8 cfs July 31, Aug. 4, 28, 29, 30.

1949-52: Maximum discharge, 2,550 cfs Nov. 26, 1950 (gage height, 9.37 ft); minimum, 2.2 cfs Aug. 28, 1949 (gage height, 1.12 ft); minimum daily, 2.3 cfs Aug. 28, 1949.

Maximum stage known, 12.0 ft Dec. 31, 1948, from floodmarks (discharge, 6,000 cfs).

Remarks.--Records good. Infrequent regulation at low flow.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1

June 2 to Sept. 30

1.7	15	2.5	95	1.5	6.5	2.5	85
1.8	21	3.0	186	1.6	9.0	5.0	555
2.1	45	5.9	760	1.8	18	6.3	880
				2.1	39		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	127	77	149	131	b47	203	124	602	25	11	61
2	19	*135	84	165	169	b50	543	104	875	21	10	164
3	18	874	84	151	158	b44	338	92	268	18	9.8	70
4	17	457	82	122	180	48	232	83	172	17	8.8	43
5	17	230	211	108	209	51	656	76	240	16	21	30
6	17	158	277	97	171	50	*749	71	156	16	39	24
7	23	435	171	b86	133	49	328	68	142	14	37	20
8	271	452	135	b84	108	48	224	65	108	14	21	17
9	114	232	147	80	113	46	180	61	89	15	16	15
10	62	162	151	77	99	46	156	57	80	102	24	14
11	153	135	*115	b71	120	306	136	101	70	95	33	13
12	*357	113	95	70	115	462	118	371	64	43	23	12
13	156	102	79	67	b82	279	113	196	53	30	61	11
14	97	140	65	*74	b68	196	203	135	48	23	33	11
15	76	237	66	133	b59	151	182	113	43	19	21	12
16	66	182	b62	163	b53	124	158	104	39	17	20	28
17	57	175	b61	115	55	106	*127	86	37	15	35	19
18	52	135	74	213	60	106	109	95	53	14	22	14
19	48	109	153	154	b63	115	97	88	37	13	16	66
20	45	90	b110	194	b62	111	88	88	33	13	14	80
21	42	79	495	154	61	181	79	131	30	*13	13	40
22	40	74	348	b100	b61	205	74	*100	29	14	19	30
23	39	82	197	256	b57	252	72	80	30	11	15	26
24	40	153	154	162	b55	*239	68	71	28	10	12	27
25	266	129	120	b115	*b56	222	96	143	25	9.8	11	24
26	145	118	109	304	b55	232	237	186	23	9.0	9.8	128
27	94	111	b94	585	b53	258	171	127	24	11	9.4	68
28	75	80	88	414	53	214	290	90	22	12	8.8	54
29	77	79	89	241	51	167	243	77	25	11	8.8	30
30	63	75	95	b155	-	153	162	82	37	9.4	8.8	20
31	57	-	124	133	-	156	-	76	-	8.8	9.4	-
Total	2,623	5,460	4,212	4,992	2,710	4,712	6,432	3,341	3,482	659.0	600.6	1,151
Mean	84.6	182	136	161	93.4	152	214	108	116	21.3	19.4	38.4
Cfsm	1.76	3.78	2.82	3.34	1.94	3.15	4.44	2.24	2.41	0.442	0.402	0.787
In.	2.03	4.22	3.25	3.85	2.09	3.63	4.95	2.58	2.69	0.51	0.46	0.89

Calendar year 1951: Max 1,010 Min 12 Mean 107 Cfsm 2.22 In. 30.04  
 Water year 1951-52: Max 875 Min 8.8 Mean 110 Cfsm 2.28 In. 31.15

Peak discharge (base, 800 cfs).--Nov. 3 (4 p.m.) 1,010 cfs (6.72 ft); Nov. 7 (5 p.m.) 880 cfs (6.3 ft); Dec. 21 (2 p.m.) 820 cfs (6.08 ft); Apr. 6 (1 a.m.) 1,250 cfs (7.34 ft); June 1 (12 p.m.) 1,670 cfs (8.11 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Housatonic River at Falls Village, Conn.

Location.--Lat 41°56'56", long. 73°22'05", on left bank 0.6 mile downstream from hydro-electric plant of Connecticut Power Co. at Falls Village, Litchfield County, 2 miles downstream from Hollenbeck River, and at mile 75.3.

Drainage area.--632 sq mi.

Records available.--July 1912 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 522.34 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--40 years, 1,068 cfs.

Extremes.--Maximum discharge during year, 7,170 cfs Apr. 7 (gage height, 11.58 ft); minimum, 46 cfs Sept. 11 (gage height, 0.61 ft); minimum daily, 168 cfs Sept. 11. 1912-52: Maximum discharge, 23,900 cfs Jan. 1, 1949 (gage height, 22.9 ft, from floodmarks); practically no flow at times when powerplant was shut down; minimum daily, 24 cfs Oct. 15, 1914, Sept. 18, 1932.

Remarks.--Records excellent except those for periods of faulty intake action and backwater from ice, which are good. Low flow completely regulated by powerplant of Connecticut Power Co.

Revisions.--W 781: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	151
1.5	275
3.0	950
8.0	3,950
11.5	7,070

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	288	1,050	1,210	1,710	2,450	770	2,230	2,120	2,150	614	210	312	
2	512	*1,470	1,210	1,840	2,400	748	3,060	1,840	6,450	484	258	1,090	
3	349	2,190	1,190	2,000	2,400	671	3,870	1,470	5,580	391	365	1,370	
4	324	3,790	1,260	1,890	2,340	758	3,870	1,330	5,180	392	271	1,150	
5	366	3,650	1,470	1,840	2,510	774	4,200	1,180	4,910	384	386	821	
6	338	3,160	1,990	1,710	2,510	752	7,070	1,220	3,870	445	415	504	
7	315	2,800	2,120	1,420	2,280	700	6,970	1,150	3,040	441	412	382	
8	1,140	3,580	1,950	bl,100	2,060	690	6,170	1,040	2,560	416	408	308	
9	1,720	3,440	1,890	bl,250	1,840	660	4,830	1,020	2,120	372	369	394	
10	1,500	3,100	1,840	bl,350	1,840	520	3,720	1,000	1,890	677	278	468	
11	1,290	2,620	*1,840	bl,200	1,670	930	2,980	1,010	1,580	1,120	284	168	
12	*1,800	2,170	1,840	bl,150	1,780	2,250	2,620	1,800	1,400	1,080	380	318	
13	2,170	1,950	1,560	1,140	1,200	2,450	2,400	2,620	1,270	830	462	328	
14	1,890	1,890	1,300	1,000	bl,000	2,150	2,510	2,510	1,110	485	594	271	
15	1,450	2,170	1,030	1,080	bl,150	1,900	2,920	2,230	966	455	505	244	
16	1,310	2,340	bl,050	1,670	bl,050	1,700	2,980	1,950	821	410	420	419	
17	1,150	2,400	b900	1,840	bl,000	1,500	*2,620	1,780	798	372	442	342	
18	851	2,170	bl,050	1,840	b900	1,400	2,280	1,500	1,140	317	506	351	
19	779	1,950	bl,200	2,000	bl,050	1,500	2,000	1,450	1,140	326	797	485	
20	728	1,840	bl,150	2,060	bl,000	1,500	1,840	1,540	360	316	461	740	
21	680	1,570	bl,650	2,120	bl,000	1,600	1,680	1,670	766	*245	416	570	
22	518	1,370	b2,350	1,840	1,010	2,000	1,520	*1,670	700	296	368	449	
23	792	1,250	b2,350	2,060	1,010	2,300	1,380	1,550	562	322	358	474	
24	592	1,580	b2,050	2,230	948	*2,600	1,280	1,420	694	275	176	398	
25	1,270	1,840	bl,900	1,840	866	2,700	1,200	1,420	586	274	348	421	
26	1,580	1,780	bl,800	2,180	925	2,600	1,790	1,950	565	262	260	560	
27	1,450	1,780	bl,600	3,970	888	2,800	1,950	2,120	549	310	265	416	
28	1,110	1,480	bl,500	*4,910	846	2,900	2,120	1,840	576	222	279	361	
29	1,040	1,360	bl,400	4,750	820	2,700	2,620	1,620	534	273	224	224	
30	1,090	1,250	bl,450	3,720	-	2,400	2,510	1,390	481	314	238	456	
31	968	-	1,590	2,860	-	2,200	-	1,290	-	274	248	-	
Total	31,360	64,990	48,690	63,570	42,743	51,103	89,190	49,700	54,948	13,374	11,382	14,772	
Mean	1,012	2,166	1,571	2,051	1,474	1,648	2,973	1,603	1,832	431	367	492	
Cfs/m	1.60	3.43	2.49	3.25	2.33	2.61	4.70	2.54	2.90	0.682	0.581	0.778	
In.	1.84	3.83	2.87	3.75	2.51	3.01	5.24	2.93	3.24	0.79	0.67	0.87	
Calendar year 1951: Max	6,770					Min	288	Mean	1,404	Cfs/m	2.22	In.	30.16
Water year 1951-52: Max	7,070					Min	168	Mean	1,464	Cfs/m	2.32	In.	31.55

Peak discharge (base, 3,600 cfs).--Nov. 4 (10 a.m.) 3,950 cfs (7.97 ft); Nov. 8 (2 p.m.) 3,720 cfs (7.72 ft); Jan. 28 (8 p.m.) 5,000 cfs (9.28 ft); Apr. 7 (6 a.m.) 7,170 cfs (11.58 ft); June 2 (8 a.m.) 6,370 cfs (10.80 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Gage-height record affected by faulty intake action Mar. 8-31; discharge estimated on basis of weather records, engineer's notes, records for Connecticut Power Co. plant at Falls Village, half a mile upstream, and records for stations at Great Barrington and Gaylordsville.

Tenmile River near Gaylordsville, Conn.

Location.--Lat 41°39'32", long. 73°31'44", on right bank 0.1 mile downstream from Deuel Hollow Brook, 1.2 miles upstream from Connecticut-New York State line, 1.7 miles upstream from mouth, and 2½ miles northwest of Gaylordsville, Litchfield County.

Drainage area.--204 sq mi.

Records available.--December 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 304.4 ft above mean sea level, datum of 1929 (levels by Connecticut Light & Power Co.).

Average discharge.--23 years, 289 cfs.

Extremes.--Maximum discharge during year, 3,450 cfs Apr. 6 (gage height, 7.19 ft); minimum, 45 cfs Oct. 7, Aug. 5, 6 (gage height, 0.94 ft); minimum daily, 47 cfs Aug. 5.  
1929-52: Maximum discharge, 12,500 cfs Sept. 22, 1938 (gage height, 12.77 ft); minimum, 8 cfs Sept. 24, 26, 1939 (gage height, 0.52 ft); minimum daily, 9 cfs Sept. 23-26, 1939.

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

Revisions (water years).--W 120: 1939.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	40	3.0	600
1.2	81	4.0	1,070
1.5	135	5.0	1,660
2.0	255	6.9	3,150

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	197	382	620	b660	245	536	870	1,210	162	50	118
2	52	325	375	685	775	216	845	730	1,980	142	50	302
3	51	640	362	662	775	234	870	662	1,320	125	48	242
4	51	945	356	572	775	219	730	588	1,120	115	48	212
5	50	775	451	548	820	279	1,570	532	1,170	115	47	171
6	48	662	588	516	708	274	*3,150	496	870	106	156	139
7	50	916	504	b440	620	263	2,080	472	752	97	216	115
8	172	1,230	465	b370	552	247	1,500	431	640	91	139	97
9	199	945	476	b385	540	242	1,200	399	544	102	110	99
10	142	775	528	399	500	247	1,020	366	488	391	111	84
11	153	685	*461	b365	508	876	895	428	424	510	115	74
12	316	588	431	359	520	2,080	775	874	379	282	113	68
13	285	528	403	343	369	1,560	708	820	334	222	155	63
14	224	512	350	*350	b310	1,200	1,040	640	304	180	146	59
15	197	708	334	435	b290	945	1,170	564	279	144	111	60
16	175	685	b300	620	b270	820	1,320	524	258	119	131	65
17	157	840	b290	528	b270	708	*995	453	318	106	175	66
18	142	560	b350	685	b280	662	845	457	730	97	146	62
19	131	*504	588	662	b270	685	730	442	417	92	139	153
20	121	453	540	730	b290	685	662	424	350	84	133	266
21	113	396	1,030	798	328	820	600	508	282	84	121	175
22	110	369	1,440	b550	310	920	552	*435	255	*89	168	144
23	106	372	1,040	970	299	945	512	379	242	81	146	127
24	106	512	870	870	279	1,020	472	340	224	74	111	115
25	252	540	730	662	271	*945	466	531	204	65	99	102
26	*263	532	662	999	*268	870	845	798	180	59	86	91
27	209	576	588	1,700	260	820	845	620	209	56	74	83
28	192	435	492	1,500	250	752	1,120	500	185	62	65	76
29	190	410	496	1,200	247	665	1,290	435	164	68	59	74
30	175	392	500	b750	-	620	1,040	424	187	59	55	70
31	162	-	584	b620	-	564	-	413	-	52	50	-
Total	4,647	17,807	16,946	12,614	12,614	21,648	30,405	16,555	16,019	4,031	3,373	3,572
Mean	150	594	547	674	435	698	1,014	534	534	130	109	119
Cfsm	0.755	2.91	2.68	3.30	2.13	3.42	4.97	2.62	2.62	0.637	0.534	0.583
In.	0.85	3.25	3.09	3.80	2.30	3.94	5.54	3.02	2.92	0.73	0.62	0.65

Calendar year 1951: Max 2,470 Min 41 Mean 389 Cfsm 1.91 In. 25.90  
Water year 1951-52: Max 3,150 Min 47 Mean 460 Cfsm 2.25 In. 30.71

Peak discharge (base, 1,400 cfs).--Nov. 7 (6 p.m.) 1,410 cfs (4.81 ft); Dec. 22 (4 to 6 a.m.) 1,560 cfs (4.87 ft); Jan. 27 (9 to 10 a.m.) 1,760 cfs (5.15 ft); Mar. 12 (6 to 7 a.m.) 2,310 cfs (5.94 ft); Apr. 6 (12 m.) 3,450 cfs (7.19 ft); Apr. 16 (6 to 8 a.m.) 1,410 cfs (4.58 ft); June 1 (12 p.m.) 2,230 cfs (5.80 ft); June 4 (11:30 p.m.) 1,530 cfs (4.81 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Housatonic River at Gaylordsville, Conn.

Location.--Lat 41°39'11", long. 73°29'25", on left bank 0.4 mile downstream from hydro-electric plant of Connecticut Light & Power Co., 0.5 mile upstream from bridge on U. S. Highway 7 at Gaylordsville, Litchfield County, 1½ miles downstream from Tenmile River, and at mile 50.6.

Drainage area.--994 sq mi.

Records available.--October 1900 to December 1904 (fragmentary), January 1905 to December 1908 (gage heights only), January 1909 to December 1912 (fragmentary), January 1913 to October 1914 (gage heights only), November 1914 (fragmentary), July 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 236.78 ft above mean sea level, datum of 1929. October 1900 to November 1914, chain gage on covered bridge 0.6 mile downstream at different datum.

Average discharge.--12 years (1940-52), 1,628 cfs.

Extremes.--Maximum discharge during year, 12,900 cfs Apr. 6 (gage height, 9.77 ft); minimum daily, 206 cfs Sept. 12.

1900-1914, 1940-52: Maximum discharge, 32,300 cfs Jan. 1, 1949 (gage height, 14.85 ft); minimum observed, about 30 cfs Oct. 28, 1914 (gage height, 2.18 ft, site and datum then in use); minimum daily since July 1940, about 60 cfs Aug. 31, 1944, Sept. 20, 1949.

Flood of May 1854 reached a stage of 21 ft 3 in., former site and datum, reported by observer in 1902. Flood of Sept. 22, 1938, reached a stage of 14.5 ft, from flood-marks, at present site (discharge, 37,000 cfs, by computation of peak flow over dam 2½ miles upstream adjusted for flow from intervening area).

Remarks.--Records good. Ordinary flow regulated by powerplants above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	195	4.0	1,940
1.5	236	5.0	3,120
2.0	447	7.0	6,580
2.5	710	9.6	12,400
3.0	1,050		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	408	1,350	1,890	2,760	3,740	1,300	3,250	3,740	4,470	869	371	534
2	346	1,970	1,840	3,120	3,820	1,230	4,680	3,180	9,580	980	284	1,390
3	532	3,390	1,840	3,120	3,820	1,210	5,630	2,680	8,230	742	460	1,700
4	472	5,450	1,840	2,920	3,740	1,160	5,450	2,360	7,380	607	412	1,590
5	371	5,100	2,400	2,740	3,970	1,310	7,590	2,220	7,380	709	394	1,300
6	474	4,440	3,060	2,680	3,820	1,300	12,400	2,100	6,000	623	989	902
7	464	4,600	2,990	2,210	3,460	1,230	10,800	2,050	4,760	723	896	572
8	908	5,630	2,800	1,810	3,060	1,190	9,350	1,940	3,970	658	656	434
9	1,790	5,270	2,740	1,980	2,860	1,140	7,380	1,740	3,250	686	502	447
10	1,690	4,600	2,740	2,050	2,680	1,110	6,000	1,740	2,860	1,430	525	519
11	1,500	3,970	2,620	1,920	2,620	2,510	4,930	1,840	2,440	2,010	448	648
12	2,100	3,250	*2,560	1,830	2,740	6,000	4,120	2,300	2,160	1,630	542	206
13	2,560	2,860	2,290	1,780	2,030	5,810	3,740	3,970	2,000	1,410	837	348
14	2,270	2,740	1,960	1,740	1,560	4,760	4,600	3,740	1,790	1,110	760	324
15	1,790	3,320	1,850	*1,940	1,660	3,760	5,270	3,320	1,600	734	758	334
16	1,550	3,460	b1,540	2,620	1,740	3,250	5,450	2,920	1,370	714	738	388
17	1,420	3,530	b1,400	2,740	1,700	2,680	*4,600	2,620	1,530	583	798	520
18	1,190	3,180	b1,700	3,120	1,580	2,560	3,970	2,440	2,370	508	803	390
19	960	*2,920	b1,900	3,120	1,690	2,680	3,390	2,220	1,950	512	778	860
20	949	2,560	b1,800	3,320	1,710	2,680	3,060	2,380	1,740	463	897	1,230
21	877	2,270	b3,800	3,460	1,780	3,060	2,740	2,560	1,750	468	586	968
22	834	2,050	5,270	2,800	1,690	3,530	2,560	*2,500	1,260	384	800	840
23	712	1,840	4,600	3,820	1,590	3,970	2,380	2,270	1,180	502	528	622
24	952	2,500	3,970	3,740	1,540	4,600	2,160	2,050	1,030	452	428	755
25	1,420	2,680	3,320	2,920	1,420	*4,440	2,160	2,570	1,120	396	307	562
26	*1,960	2,620	2,990	4,140	*1,450	4,280	3,320	3,390	991	368	430	592
27	1,820	2,740	2,620	6,770	1,440	4,440	3,530	3,320	958	340	325	754
28	1,560	2,220	b2,150	7,590	1,390	4,440	4,120	2,860	998	535	301	420
29	1,340	2,050	2,290	6,970	1,360	4,120	4,930	2,500	930	377	398	490
30	1,360	1,940	2,290	5,450	-	3,600	4,440	2,270	1,070	340	254	272
31	1,310	-	2,580	4,280	-	3,320	-	2,100	-	456	427	-
Total	37,889	96,500	79,620	101,460	67,660	92,670	148,000	79,910	88,057	22,319	17,632	20,711
Mean	1,222	3,217	2,568	3,273	2,333	2,989	4,933	2,578	2,935	720	569	690
Cfsm	1.23	3.24	2.58	3.29	2.35	3.01	4.96	2.59	2.95	0.724	0.572	0.694
In.	1.42	3.62	2.97	3.78	2.53	3.47	5.53	2.99	3.29	0.83	0.66	0.77

Calendar year 1951: Max 10,800 Min 120 Mean 2,115 Cfsm 2.13 In. 28.89  
 Water year 1951-52: Max 12,400 Min 206 Mean 2,329 Cfsm 2.34 In. 31.87

Peak discharge (base, 5,500 cfs).--Nov. 4 (11 a.m.) 5,630 cfs (6.62 ft); Nov. 8 (5 p.m.) 5,810 cfs (6.70 ft); Jan. 28 (10 a.m.) 7,590 cfs (7.65 ft); Mar. 13 (1 a.m.) 6,770 cfs (7.24 ft); Apr. 6 (11 a.m.) 12,900 cfs (9.77 ft); Apr. 15 (9 p.m.) 6,000 cfs (6.78 ft); June 2 (12:30 p.m.) 10,300 cfs (8.78 ft).

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

Still River near Lanesville, Conn.

Location.--Lat 41°31'12", long. 73°25'07", on left bank at upstream side of highway bridge, a quarter of a mile east of U. S. Highway 7, 1.1 miles south of Lanesville, Litchfield County, 3 miles upstream from mouth, and 4 miles south of New Milford.

Drainage area.--68.5 sq mi.

Records available.--October 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 213.05 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--21 years, 118 cfs.

Extremes.--Maximum discharge during year, 1,680 cfs Mar. 12 (gage height, 8.76 ft); minimum, 12 cfs Sept. 29 (gage height, 0.82 ft).  
1931-52: Maximum discharge, 4,410 cfs Sept. 22, 1938 (gage height, 10.88 ft), from rating curve extended above 1,900 cfs by logarithmic plotting; minimum, 5 cfs Oct. 30, 1946.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some diurnal fluctuation caused by mills at Brookfield and Danbury.

Revisions (water years).--W 781: Drainage area. W 801: 1931-35. W 851: 1936. W 871: 1938. W 1031: 1944. W 1081: 1946.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1 to Dec. 5)

Oct. 1 to June 8

June 9 to Sept. 30

1.2	21	6.0	406
2.0	52	7.0	630
3.0	105	8.0	1,110
4.0	182	8.3	1,320

1.4	31	4.0	198
2.0	57	6.0	440
3.0	114	6.5	530

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	72	93	230	a280	118	152	420	390	49	54	122
2	23	164	90	230	a320	99	152	311	1,200	45	42	364
3	24	258	87	235	a320	102	164	250	390	42	40	384
4	24	435	84	235	a340	99	152	210	660	42	a38	187
5	24	406	132	191	a360	136	302	186	528	57	a37	121
6	22	a270	288	186	a280	156	1,110	173	413	46	a107	100
7	22	a270	272	184	a230	144	740	160	323	41	213	88
8	144	413	182	b152	a200	125	555	148	261	42	151	78
9	150	435	156	148	a180	118	442	132	208	52	82	74
10	68	273	152	128	a170	125	360	122	173	240	109	68
11	59	186	136	a120	*186	318	288	140	156	530	239	67
12	152	152	*122	a110	210	1,320	245	338	136	444	152	58
13	114	132	114	a105	164	760	220	420	121	118	381	56
14	66	125	99	a105	b135	570	300	260	107	79	520	54
15	51	200	b102	*180	b120	470	399	182	100	70	252	53
16	48	205	b100	235	111	379	*442	173	94	61	217	61
17	45	235	b95	220	122	300	372	144	98	56	490	61
18	42	182	b115	256	160	266	266	144	107	54	510	54
19	*41	136	328	a250	160	245	220	152	85	52	268	81
20	39	*118	335	a270	144	278	196	144	78	46	156	148
21	34	105	530	a300	140	366	168	*220	70	46	132	91
22	32	96	a250	a250	136	182	156	132	74	*58	286	76
23	35	96	b615	a400	128	347	152	132	80	46	210	68
24	36	128	428	a350	118	347	144	114	76	42	121	66
25	83	136	305	a330	114	*323	169	152	69	39	100	64
26	93	152	261	a450	114	278	347	300	63	37	85	64
27	60	191	256	a550	114	235	413	258	57	36	76	60
28	48	128	b205	a600	108	205	480	160	54	82	72	52
29	50	105	173	a480	114	186	700	136	52	59	70	33
30	47	99	178	a380	-	168	555	250	56	48	68	44
31	44	-	230	a300	-	156	-	220	-	57	104	-
Total	1,740	5,903	7,223	8,120	5,278	9,111	10,361	6,331	6,883	2,716	5,382	2,897
Mean	56.1	197	233	262	182	294	345	204	229	87.6	174	96.6
Cfsm	0.819	2.88	3.40	3.82	2.67	4.29	5.04	2.98	3.34	1.28	2.54	1.41
In.	0.94	3.21	3.92	4.40	2.88	4.95	5.62	3.44	3.73	1.48	2.93	1.57

Calendar year 1951: Max 960 Min 20 Mean 153 Cfsm 2.23 In. 30.35  
Water year 1951-52: Max 1,320 Min 20 Mean 197 Cfsm 2.88 In. 39.07

Peak discharge (base, 600 cfs).--Dec. 22 (4 a.m.) 1,180 cfs (8.07 ft); Jan. 27 (time unknown) 645 cfs (7.07 ft); Mar. 12 (8 a.m.) 1,680 cfs (8.76 ft); Apr. 6 (10 a.m.) 1,400 cfs (8.40 ft); Apr. 29 (10 to 11 a.m.) 740 cfs (7.29 ft); June 2 (3 p.m.) 1,440 cfs (8.46 ft); July 11 (8 p.m.) 685 cfs (6.97 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Shepaug River near Roxbury.

b Stage-discharge relation affected by ice.

## Shepaug River at Woodville, Conn.

Location.--Lat 41°43'24", long. 73°17'37", at left end of dam at outlet of Shepaug Reservoir, 1 mile north of Woodville, Litchfield County, and 3.5 miles upstream from Bantam River.

Drainage area.--38.0 sq mi.

Records available.--October 1935 to September 1952.

Gage.--Nonrecording gage read usually once daily.

Average discharge.--17 years, 84.0 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year from graph based on gage readings, 2,400 cfs June 1; minimum observed, 2.4 cfs at times.

1935-52: Maximum discharge observed, 6,000 cfs Sept. 21, 1938; no flow at times (result of regulation).

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)
821.....	1937	May 15, 1937	1,500
891.....	1940	Apr. 8, 1940	1,500
921.....	1941	Feb. 7, 1941	1,150
971.....	1943	Dec. 30, 1942	880
1001.....	1944	Nov. 9, 1943	1,100
1031.....	1945	Apr. 26, 1945	1,300
1081.....	1947	Mar. 14, 1947	1,470
1111.....	1948	Mar. 22, 1948	1,500
1171.....	1950	Mar. 9, 1950	1,000

Remarks.--Records good. Discharge computed on basis of flow over spillway, through floodgates, and through fountain at toe of dam. Rating curves for floodgates and fountain computed by means of a temporary sharp-crested weir below dam. Rating curve for spillway computed for discharges below 18.5 cfs by means of same weir, and for discharges above 18.5 cfs by a formula selected to fit the spillway-crest sections. Water diverted from Shepaug River for municipal supply of Waterbury. Flow regulated since September 1933 by Shepaug Reservoir (see p. 322).

Cooperation.--Records furnished by Bureau of Engineering, city of Waterbury.

Revisions (water years).--W 971: 1936-42. Revised figures of discharge, in cubic feet per second, for the high-water period in the water year 1947 superseding figures published in Water-Supply Paper 1081, are given herewith:

Mar. 14, 1947..... 950

Month	Observed				Diversion and change in contents in Shepaug Reservoir (millions of cubic feet)	Adjusted		
	Cfs-days	Maximum	Minimum	Mean		Mean	Per square mile	Runoff in inches
March.....	5,796	950	14	187	+10.46	191	5.03	5.80
Water year 1946-47..	19,861.6	950	0	54.4	+256.23	62.5	1.64	22.38
Calendar year 1947..	20,192.3	950	0	55.3	+271.46	63.9	1.68	22.87

## Shepaug River at Woodville, Conn.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	2.4	64	138	125	37	151	198	1,330	2.4	2.4	25
2	2.4	2.4	64	173	151	35	280	148	1,280	2.4	2.4	370
3	2.4	2.4	64	173	198	35	279	128	547	2.4	2.4	113
4	2.4	110	59	125	180	35	218	113	340	2.4	2.4	90
5	2.4	187	200	118	176	38	700	90	355	2.4	2.4	69
6	2.4	122	302	107	150	38	822	82	198	2.4	2.4	44
7	2.4	260	191	95	131	38	432	71	162	2.4	2.4	28
8	2.4	392	151	84	98	37	273	64	148	2.4	2.4	21
9	2.4	259	135	90	101	35	226	62	113	2.4	2.4	18
10	2.4	155	148	95	104	35	184	59	87	100	2.4	17
11	2.4	116	110	79	95	300	145	62	69	187	2.4	13
12	2.4	92	95	64	90	510	128	420	57	71	2.4	13
13	2.4	71	74	57	82	385	113	250	51	42	2.4	12
14	2.4	110	57	59	59	302	320	180	44	33	2.4	12
15	2.4	226	67	100	42	226	400	128	38	24	2.4	12
16	2.4	148	55	145	44	151	400	122	33	13	2.4	17
17	2.4	145	51	116	49	119	268	90	50	2.4	2.4	14
18	2.4	128	80	230	49	104	210	101	116	2.4	2.4	14
19	2.4	104	145	210	51	101	165	98	59	2.4	2.4	50
20	2.4	82	104	198	55	130	135	110	44	2.4	2.4	79
21	2.4	55	630	218	53	210	122	151	35	2.4	2.4	38
22	2.4	51	483	150	49	273	101	110	31	2.4	2.4	28
23	2.4	55	284	510	46	300	92	84	31	2.4	2.4	24
24	2.4	113	202	284	44	328	84	71	21	2.4	3.5	21
25	2.4	125	138	151	42	279	130	230	5.3	2.4	7.9	21
26	2.4	98	131	450	40	268	302	484	3.4	2.4	8.8	20
27	2.4	101	98	810	40	302	268	245	4.0	2.4	7.0	18
28	2.4	62	71	538	38	250	410	148	2.5	2.4	2.4	13
29	2.4	64	64	315	38	198	362	116	2.4	2.4	2.4	5.3
30	2.4	62	87	210	-	180	279	141	2.9	2.4	2.4	2.4
31	2.4	-	110	138	-	165	-	104	-	2.4	2.4	-
Total	74.4	3,500.2	4,514	6,228	2,420	5,444	7,999	4,481	5,259.5	527.6	92.0	1,222.7
Mean	2.40	117	146	201	83.4	176	267	144	175	17.0	2.97	40.8
(†)	+15.1	+18.5	+0.4	0	-0.6	+0.7	+0.3	-0.6	+2.8	+13.8	+13.3	+3.4

Adjusted for diversion and change in reservoir contents

Mean	17.5	136	146	201	82.8	177	267	143	178	30.8	16.3	44.2
Cfsm	0.461	3.58	3.84	5.29	2.18	4.66	7.03	3.76	4.88	0.811	0.429	1.16
In.	0.53	3.99	4.43	6.10	2.35	5.37	7.84	4.34	5.22	0.94	0.49	1.29

	Observed						Adjusted					
Calendar year 1951:	Max	1,550	Min	2.4	Mean	93.7	Mean	99.4	Cfsm	2.62	In.	35.51
Water year 1951-52:	Max	1,330	Min	2.4	Mean	114	Mean	120	Cfsm	3.16	In.	42.89

† Net diversion and change in contents, equivalent in cubic feet per second, in Shepaug Reservoir, furnished by city of Waterbury.

## Shepaug River near Roxbury, Conn.

Location.--Lat 41°32'59", long. 73°19'49", on right bank at downstream side of Wellers highway bridge on Wellers Bridge Road, half a mile south of Roxbury Station, 1½ miles southwest of village of Roxbury, Litchfield County, and 2.4 miles upstream from Jacks Brook.

Drainage area.--133 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 281.98 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--22 years, 241 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 5,080 cfs June 1 (gage height, 8.91 ft); minimum discharge, 2 cfs Oct. 6 (gage height, 1.25 ft).  
1930-52: Maximum discharge, 10,500 cfs Sept. 21, 1938 (gage height, 12.8 ft, from floodmarks), from rating curve extended above 3,500 cfs by logarithmic plotting on basis of two computations of flow over dam; minimum, that of Oct. 6, 1952.

Remarks.--Records good. Water diverted from Shepaug Reservoir for municipal supply of city of Waterbury. Flow regulated by Shepaug Reservoir (see p. 322). Diurnal fluctuations from an unknown cause during low flow.

Revisions (water years).--W 801: 1931-36. W 971: 1936, 1939-40, 1942. W 1301: 1931 and 1933-35 (figures of adjusted monthly and yearly discharge and runoff).

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	11	1.9	52	4.0	835
1.6	18	2.0	68	5.0	1,460
1.7	28	2.4	152	6.9	3,010
1.8	39	3.0	350		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	122	263	448	565	157	458	600	2,610	79	30	386
2	18	124	259	494	600	b150	575	507	2,930	66	18	763
3	20	518	256	498	575	147	625	453	1,460	60	19	422
4	18	351	242	417	650	142	535	408	1,120	57	19	330
5	*18	408	475	394	650	174	1,680	366	1,150	54	32	273
6	14	322	650	362	565	166	*1,960	342	835	49	149	233
7	14	679	494	330	494	152	1,180	322	700	46	114	202
8	116	808	440	b310	435	147	918	292	600	46	52	179
9	55	550	444	362	422	145	780	266	498	57	47	163
10	37	448	444	328	382	145	650	246	430	589	76	147
11	58	382	378	284	404	926	575	284	370	485	84	135
12	127	338	*342	b285	404	1,170	498	862	322	246	63	126
13	68	303	306	258	b280	862	466	575	280	199	81	117
14	52	349	b250	253	b240	725	894	453	246	166	55	115
15	48	600	b260	314	b210	600	972	394	188	140	44	104
16	46	555	b220	*412	b200	525	972	370	188	124	533	124
17	43	575	b190	350	b210	466	725	326	212	102	595	108
18	40	458	b350	575	b220	444	625	342	374	66	214	96
19	37	390	570	502	230	471	530	322	224	79	168	213
20	38	*338	494	575	*233	480	466	334	194	66	147	236
21	37	295	b1,600	570	217	600	*412	*422	155	46	177	160
22	36	270	1,150	422	208	700	382	350	152	58	298	130
23	36	273	808	1,120	196	752	362	295	150	47	171	124
24	34	399	650	725	188	808	326	263	133	42	140	117
25	130	378	555	555	185	*752	402	587	110	39	124	113
26	81	444	516	1,160	176	700	700	1,000	92	37	135	102
27	63	404	448	1,810	174	700	700	600	108	39	128	94
28	57	306	b360	1,360	166	650	1,020	466	84	39	113	84
29	58	284	378	1,000	166	585	945	422	92	*36	106	79
30	52	266	378	752	-	512	725	430	113	30	116	68
31	49	-	422	625	-	476	-	374	-	30	108	-
Total	1,524	11,937	14,592	17,828	9,645	15,429	22,058	13,273	16,100	3,241	4,156	5,543
Mean	49.2	398	471	575	333	498	735	428	537	105	134	165
(t)	+15.1	+18.5	+0.4	0	-0.6	+0.7	+0.3	-0.6	+2.8	+13.8	+13.3	+3.4

Adjusted for diversion and change in reservoir contents

	Mean	64.3	416	471	575	332	499	735	427	540	119	147	188
Cfsm	0.463	3.13	3.54	4.32	2.50	3.75	5.53	3.21	4.06	0.895	1.11	1.41	
In.	0.56	3.49	4.08	4.98	2.70	4.32	6.17	3.70	4.53	1.03	1.28	1.57	

		Observed				Adjusted						
Calendar year 1951:	Max	2,910	Min	14	Mean	294	Mean	300	Cfsm	2.26	In.	30.59
Water year 1951-52:	Max	2,930	Min	14	Mean	370	Mean	376	Cfsm	2.83	In.	38.41

Peak discharge (base, 1,500 cfs).--Dec. 21 (2 p.m.) 2,410 cfs (6.17 ft); Jan. 27 (4 a.m.) 2,130 cfs (5.84 ft); Mar. 11 (5 p.m.) 1,970 cfs (5.66 ft); Apr. 5 (5 p.m.) 3,100 cfs (7.00 ft); June 1 (9 p.m.) 5,080 cfs (8.91 ft); Aug. 16 (7:30 p.m.) 2,250 cfs (6.02 ft).

\* Discharge measurement made on this day.

† Net diversion and change in contents, equivalent in cubic feet per second, in Shepaug Reservoir; furnished by city of Waterbury.

b Stage-discharge relation affected by ice.



## Pomperaug River at Southbury, Conn.

Location.--Lat 41°28'50", long. 73°13'30", on right bank 200 ft upstream from highway bridge, 800 ft downstream from Bullet Hill Brook, 0.6 mile west of Southbury, New Haven County, and 5.8 miles upstream from mouth.

Drainage area.--75.3 sq mi.

Records available.--June 1932 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 165.60 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--20 years, 126 cfs.

Extremes.--Maximum discharge during year, 2,500 cfs Mar. 11 (gage height, 8.88 ft), from rating curve extended above 1,200 cfs as explained below; minimum, 8.6 cfs Oct. 6, 7 (gage height, 2.50 ft).

1932-52: Maximum discharge, 7,420 cfs Sept. 21, 1938 (gage height, 16.0 ft from floodmarks), from rating curve extended above 1,200 cfs on basis of computation of peak flow over dam 2 miles downstream; minimum, 3.3 cfs Aug. 27, 1949 (gage height, 2.32 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. Infrequent regulation at low flow by mill above station.

Revisions (water years).--W 781: Drainage area. W 851: 1934(M), 1936(M). W 1201: 1933-35, 1937(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 1				June 2 to Sept. 30			
2.5	9.0	5.0	515	2.7	17	5.0	515
2.9	35	6.0	970	3.1	50	6.0	970
3.5	111	7.1	1,520	3.5	102	6.5	1,220
4.0	206			4.0	200		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	93	125	250	230	95	157	273	1,480	50	26	411
2	10	100	120	350	220	b80	163	240	1,200	40	23	570
3	10	519	113	300	220	84	175	213	507	35	23	237
4	10	338	109	220	250	83	149	191	367	32	21	172
5	10	198	269	200	300	128	811	175	412	30	35	132
6	9.5	141	346	180	250	120	780	165	292	28	120	126
7	13	533	210	150	220	108	380	159	253	26	100	96
8	119	436	185	140	190	100	303	142	198	27	35	84
9	43	235	189	150	170	97	268	130	174	35	38	77
10	30	183	187	140	160	106	240	120	155	700	60	72
11	37	157	156	130	170	1,100	210	142	132	350	55	67
12	108	135	142	120	160	999	189	525	116	220	45	62
13	52	125	*130	110	120	487	185	257	102	150	55	58
14	38	130	103	110	b121	380	474	193	92	110	40	54
15	52	278	123	180	b113	292	501	175	88	90	30	56
16	29	254	b110	*247	111	257	394	165	81	70	700	73
17	26	291	95	191	b123	228	278	141	110	60	1,000	59
18	24	191	200	437	133	*217	238	169	180	50	400	52
19	*23	157	300	262	123	228	208	150	120	45	200	238
20	21	*135	250	348	*116	301	189	179	90	40	150	175
21	20	120	1,200	282	120	373	*165	*233	90	35	250	104
22	19	114	600	b183	114	370	156	165	75	30	350	83
23	19	121	400	813	108	357	150	133	70	28	200	76
24	21	196	300	340	101	325	137	120	60	26	130	73
25	95	163	250	b228	100	292	219	345	55	*24	100	68
26	54	274	220	746	98	247	416	398	50	23	85	62
27	40	213	190	788	97	226	384	235	60	26	75	57
28	35	142	160	535	84	202	754	179	50	30	67	51
29	35	137	170	391	95	185	528	179	55	25	65	49
30	30	128	180	300	-	169	344	181	65	22	61	47
31	28	-	210	250	-	159	-	159	-	20	59	-
Total	1,050.5	6,237	7,342	9,071	4,427	8,395	9,524	6,231	6,769	2,477	4,590	3,543
Mean	33.9	208	237	293	153	271	317	201	226	79.9	148	118
Cfsm	0.450	2.76	3.15	3.89	2.03	3.60	4.21	2.67	3.00	1.06	1.97	1.57
In.	0.52	3.08	3.63	4.48	2.19	4.15	4.70	3.08	3.35	1.22	2.27	1.75

Calendar year 1951: Max 1,500 Min 9.5 Cfsm 152 In. 27.42  
Water year 1951-52: Max 1,480 Min 9.5 Cfsm 2.02 In. 34.42

Peak discharge (base, 1,400 cfs).--Dec. 21 (time unknown), 1,840 cfs (7.70 ft); Jan. 23 (7 a.m.) 1,470 cfs (7.00 ft); Jan. 26 (4 p.m.) 1,420 cfs (6.89 ft); Mar. 11 (9 p.m.) 2,500 cfs (8.88 ft); Apr. 5 (10 p.m.) 1,900 cfs (7.76 ft); June 1 (7 p.m.) 2,120 cfs (8.19 ft); July 10 (time unknown) 1,680 cfs (7.40 ft); Aug. 16 (time unknown) 2,340 cfs (8.6 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 17 to Jan. 15, Jan. 30 to Feb. 13, June 17 to July 24, Aug. 5-27; discharge estimated on basis of recorded range in stage, weather records, engineer's notes, and records for stations on nearby streams.

## Housatonic River at Stevenson, Conn.

Location.--Lat 41°23'05" long. 73°09'55", on left bank in New Haven County, 0.2 mile downstream from dam of Connecticut Light & Power Co. at Stevenson, Fairfield County, 0.2 mile upstream from Eightmile Brook, and at mile 19.2.

Drainage area.--1,545 sq mi.

Records available.--August 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 24.98 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--24 years, 2,560 cfs (adjusted for storage and diversion since 1936).

Extremes.--Maximum discharge during year, 22,700 cfs Apr. 6 (gage height, 13.85 ft); minimum, 55 cfs July 26 (gage height, 0.64 ft); minimum daily, 67 cfs July 26, 1928-52; Maximum discharge, 69,500 cfs Mar. 12, 1936 (gage height, 23.5 ft, from floodmarks), from rating curve extended above 35,000 cfs on basis of computation of peak flow at Stevenson and Derby Dams and slope-area determination of peak flow; practically no flow at times, result of regulation.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Ordinary flow completely regulated by Stevenson hydroelectric plant. Flow regulated by Lake Candlewood, Lake Zoar, and Shepaug Reservoir having a combined usable capacity of 6,600,000,000 cu ft (see p. 322), and by small diversion from the basin at Shepaug Reservoir.

Revisions (water years).--W 711: 1929(M). W 781: Drainage area. Corrected figures of monthly and annual discharges for the water year 1951, superseding those published in Water-Supply Paper 1201, are given herewith.

Month	Observed				Diversion and change in contents (cubic feet per second)	Adjusted		
	Cfs-days	Maximum	Minimum	Mean		Mean	Per square mile	Runoff in inches
April 1951.....	220,850	16,900	3,020	7,362	-300	7,062	4.57	5.10
Water year 1950-51	-	17,100	70	2,979	-	2,999	1.94	26.33

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a870	2,810	3,220	4,170	6,240	2,340	4,790	7,020	9,470	1,230	888	2,340
2	a680	2,990	2,080	4,990	6,240	1,560	4,690	6,420	19,200	1,130	482	4,840
3	a780	4,470	2,980	4,980	6,240	2,040	7,000	5,880	14,500	1,130	654	2,270
4	a800	6,180	2,800	5,040	6,420	1,950	7,200	4,120	12,000	882	678	3,610
5	659	6,970	3,970	5,410	6,750	2,270	11,500	3,780	12,200	872	752	2,420
6	320	6,000	5,770	4,020	6,390	2,940	20,200	3,520	10,200	885	1,480	518
7	140	6,880	4,410	3,930	6,040	2,300	16,300	3,200	7,750	850	2,560	1,270
8	3,100	8,880	5,000	3,380	5,580	2,000	14,000	3,180	6,800	1,050	1,460	1,220
9	1,160	7,600	4,220	2,960	4,920	1,960	11,800	2,200	6,090	930	114	1,020
10	1,760	6,600	4,080	3,840	4,490	1,850	8,870	1,380	5,140	4,600	640	1,100
11	2,490	5,880	4,280	3,180	4,080	7,070	7,600	3,360	3,780	5,620	1,800	1,360
12	2,130	4,350	3,970	2,860	4,270	13,000	6,580	5,280	4,000	2,700	1,350	1,950
13	3,120	4,640	*4,260	2,560	4,400	10,500	6,420	6,600	2,790	2,030	2,320	195
14	2,320	*4,000	3,200	3,610	2,580	8,090	6,800	6,180	2,530	1,650	1,050	1,170
15	2,060	4,500	2,960	3,430	2,310	6,800	8,700	5,120	2,920	1,220	2,660	1,870
16	1,730	5,280	1,780	4,120	3,050	6,240	9,450	4,600	1,550	1,440	1,340	972
17	1,670	5,880	2,000	4,400	2,980	4,250	7,820	9,900	1,960	1,260	4,900	1,460
18	1,430	5,090	3,920	5,410	2,680	4,730	6,800	4,000	3,800	1,070	1,850	976
19	1,190	4,260	3,850	5,370	2,940	4,270	6,420	3,940	3,070	665	1,920	2,070
20	925	3,860	3,380	4,840	2,910	5,010	5,800	3,670	1,910	800	1,530	1,920
21	905	3,400	8,580	5,950	3,050	5,320	*3,830	4,150	2,120	1,190	1,430	1,560
22	1,140	3,080	10,700	5,190	2,840	5,440	4,600	3,900	2,220	1,240	3,970	1,450
23	1,170	2,770	8,260	9,150	2,520	6,310	4,020	3,160	2,070	820	1,440	1,580
24	1,040	5,470	6,800	*7,000	2,040	7,000	3,660	2,920	2,210	848	90	1,210
25	1,790	3,980	6,150	6,060	2,140	6,910	3,320	4,100	2,150	782	662	1,680
26	2,550	4,060	5,100	6,300	2,320	*6,600	5,150	6,330	870	67	755	1,360
27	2,080	4,380	5,520	12,000	2,080	6,600	6,240	5,400	835	245	760	574
28	1,660	3,740	3,770	12,400	2,180	6,240	6,600	4,630	1,600	1,330	1,130	686
29	1,520	2,910	3,920	11,200	2,130	6,060	8,950	4,150	1,480	730	1,050	1,400
30	2,280	3,000	3,780	8,350	-	5,880	8,260	3,720	1,410	695	450	1,040
31	1,560	-	4,050	7,000	-	5,050	-	4,170	-	695	788	-
Total	47,729	141,910	138,700	172,730	112,420	158,580	233,770	133,990	146,625	40,811	43,143	46,071
Mean	1,540	4,730	4,474	5,572	3,677	5,116	7,792	4,322	4,954	1,316	1,392	1,536
( $\bar{x}$ )	-2	+160	+40	-8	-101	+99	+58	-66	-57	-34	+117	-145

Adjusted for diversion and change in reservoir contents

Mean Cfs	1,538	4,890	4,514	5,564	3,776	5,215	7,850	4,256	4,897	1,282	1,509	1,391
In.	0.995	3.17	2.92	3.60	2.44	3.38	5.08	2.75	3.17	0.850	0.977	0.900
Cfs	1.15	3.54	3.37	4.15	2.63	3.90	5.67	3.17	3.54	0.96	1.13	1.00

Calendar year 1951:	Observed				Adjusted			
	Max	Min	Mean	Cfsm	Max	Min	Mean	Cfsm
Water year 1951-52:	Max 17,100	Min 75	Mean 3,338	Cfsm 3,350	Max 3,350	Min 2.17	Mean 3,382	Cfsm 2.51
	Max 20,200	Min 67	Mean 3,876	Cfsm 3,882	Max 3,882	Min 2.51	Mean 3,876	Cfsm 2.51

Peak discharge (base, 11,000 cfs).--Nov. 7 (10 p.m.) 11,200 cfs (10.02 ft); Dec. 21 (8 p.m.) 12,700 cfs (10.64 ft); Jan. 28 (10 p.m.) 12,700 cfs (10.60 ft); Mar. 12 (1 a.m.) 14,800 cfs (11.40 ft); Apr. 6 (1:30 a.m.) 22,700 cfs (13.85 ft); June 2 (2 a.m.) 21,600 cfs (13.54 ft).

\* Discharge measurement made on this day.

† Change in contents in Lake Candlewood, Lake Zoar, and Shepaug Reservoir, and small diversion from basin at Shepaug Reservoir, equivalent in cubic feet per second, furnished by Connecticut Light & Power Co. and city of Waterbury.

‡ No gage-height record; discharge computed on basis of powerplant records.

## Naugatuck River near Thomaston, Conn.

Location.--Lat 41°42'15", long. 73°03'53", on right bank near downstream side of Twomile Bridge, 250 ft downstream from New York, New Haven & Hartford Railroad bridge, 0.4 mile upstream from Leadmine Brook, 2 miles north of Thomaston, Litchfield County, and at mile 31.

Drainage area.--71.9 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 389.44 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--22 years, 139 cfs.

Extremes.--Maximum discharge during year, 3,200 cfs June 1 (gage height, 6.33 ft); minimum, 21 cfs Oct. 1 (gage height, 1.06 ft); minimum daily, 24 cfs Oct. 1, 1930-52: Maximum discharge, 10,200 cfs Dec. 31, 1948 (gage height, 12.03 ft); minimum, about 7 cfs (result of freezeup) Mar. 12, 1940; minimum daily, 13 cfs Oct. 24, 1931; minimum gage height, 0.91 ft (result of freezeup) Dec. 2, 1946.

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

Revisions (water years).--W 741: 1931-32. W 781: Drainage area. W 821: 1936(M). W 1111: 1939(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3, June 2 to Sept. 30				Nov. 4 to June 1			
1.1	24	2.5	310	1.6	69	3.0	510
1.3	41	3.0	540	2.0	142	4.0	1,150
1.6	77	4.0	1,160	2.5	290	4.9	1,890
2.0	155	4.5	1,550				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	97	107	233	233	81	242	262	1,850	41	30	398
2	28	a75	118	313	294	b70	560	217	1,440	39	30	370
3	29	a550	120	283	301	74	436	190	515	36	29	158
4	27	a350	107	202	394	72	305	169	366	44	30	95
5	27	*a180	412	188	409	99	1,590	152	330	41	53	71
6	26	122	458	164	305	89	1,230	142	275	31	123	59
7	31	572	242	144	239	81	519	140	296	30	66	51
8	a120	a450	190	122	199	76	378	127	207	30	41	49
9	a40	a220	205	129	202	74	309	114	165	36	38	47
10	34	a150	*205	124	180	75	269	109	144	41.7	77	46
11	51	a125	159	110	216	795	238	140	128	271	56	43
12	a90	a110	138	107	220	1,060	205	1,020	115	92	46	41
13	44	a100	118	105	b120	530	190	399	106	59	56	40
14	36	a130	96	114	b100	372	568	301	98	47	40	37
15	35	a270	110	180	b95	269	603	290	93	41	36	42
16	35	a240	b90	262	b90	220	565	214	83	40	287	58
17	34	a350	b70	185	112	*193	328	120	80	39	250	44
18	32	a220	b170	*438	*124	202	262	140	132	36	79	41
19	31	a160	313	297	112	226	220	*116	88	35	56	146
20	30	a125	226	354	107	239	190	150	69	34	49	109
21	26	98	1,210	316	105	359	*164	249	56	38	66	73
22	29	92	561	190	99	451	147	196	55	35	143	57
23	31	99	317	833	94	544	142	144	58	32	61	53
24	34	194	242	375	89	491	131	122	52	30	46	50
25	175	167	199	229	89	404	182	494	46	30	*43	50
26	172	188	193	976	87	409	480	650	47	30	42	46
27	43	175	b155	1,210	86	432	409	301	49	29	39	46
28	39	110	b125	746	82	361	755	199	47	33	40	41
29	42	107	144	448	82	266	577	185	52	31	40	40
30	37	101	162	283	-	245	348	188	51	30	37	41
31	36	-	211	229	-	233	-	159	-	30	36	-
Total	1,468	5,927	7,273	9,889	4,665	9,112	12,540	7,369	7,095	1,787	2,025	2,442
Mean	47.4	198	235	319	188	294	418	238	236	57.6	65.3	81.4
Cfs/m	0.659	2.75	3.27	4.44	2.34	4.09	5.81	3.31	3.28	0.801	0.908	1.13
In.	0.76	3.07	3.77	5.12	2.52	4.72	6.48	3.82	3.66	0.92	1.05	1.26

Calendar year 1951: Max 2,520 Min 21 Mean 169 Cfs/m 2.35 In. 31.84  
 Water year 1951-52: Max 1,850 Min 24 Mean 196 Cfs/m 2.73 In. 37.15

Peak discharge (base, 1,500 cfs).--Dec. 21 (10 a.m.) 1,630 cfs (4.61 ft); Jan. 28 (3 p.m.) 1,630 cfs (4.60 ft); Mar. 11 (11 p.m.) 1,940 cfs (4.87 ft); Apr. 5 (6 p.m.) 3,100 cfs (6.21 ft); May 12 (5 a.m.) 1,670 cfs (4.67 ft); June 1 (10:30 p.m.) 3,200 cfs (6.33 ft); Sept. 1 (5 p.m.) 2,070 cfs (5.09 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations near Naugatuck and on Leadmine Brook near Thomaston.

b Stage-discharge relation affected by ice.

## Leadmine Brook near Thomaston, Conn.

Location.--Lat 41°42'06", long. 73°03'28", on left bank 10 ft downstream from highway bridge, 0.4 mile upstream from mouth, and 2½ miles northeast of Thomaston, Litchfield County.

Drainage area.--24.0 sq mi.

Records available.--September 1930 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 401.23 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--22 years, 46.7 cfs.

Extremes.--Maximum discharge during year, 900 cfs Aug. 16 (gage height, 6.47 ft); minimum, 1.4 cfs Aug. 1, 2, 4, 5 (gage height, 2.13 ft).  
1930-52: Maximum discharge, 3,080 cfs Sept. 17, 1934 (gage height, 11.2 ft from floodmarks), from rating curve extended above 800 cfs by logarithmic plotting; minimum, 0.08 cfs Aug. 27-29, 1941; minimum gage height, 1.80 ft at times during period Sept. 12-15, 1931, and on July 30, Aug. 10, 1933.

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

Revisions (water years).--W 781: Drainage area. W 1301: 1933-36(M), 1943(M).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	1.2	3.1	32
2.3	3.0	3.5	69
2.5	5.6	4.0	141
2.7	11	4.5	240
2.9	20	5.6	560

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	35	38	90	b88	b31	69	91	a530	7.1	1.5	148
2	8.1	36	41	118	110	b28	94	76	a360	5.5	1.5	163
3	8.8	205	38	104	101	b28	88	67	156	4.8	1.6	69
4	8.1	112	36	77	148	28	70	59	116	4.3	1.5	41
5	5.0	*62	145	69	141	38	354	52	113	4.9	12	28
6	2.2	41	158	60	104	36	268	48	88	4.9	36	21
7	6.0	175	90	52	84	35	158	46	95	4.0	27	16
8	40	147	73	b45	71	31	101	41	62	3.6	11	14
9	16	73	80	b48	74	31	88	38	50	4.1	7.6	12
10	8.8	52	*77	b45	66	31	77	34	42	104	30	11
11	13	39	59	b40	75	272	67	53	35	56	25	9.4
12	35	33	51	b39	70	362	59	348	30	24	17	8.4
13	15	31	43	b38	b40	210	56	132	26	13	24	7.4
14	10	41	42	b40	b42	150	194	90	22	8.8	12	7.4
15	8.1	97	48	71	b38	113	188	75	20	6.3	7.4	6.1
16	7.4	97	b38	97	b35	91	183	67	16	5.2	173	13
17	6.9	113	b30	71	b42	*80	104	54	17	4.5	251	12
18	5.8	67	b60	*180	b45	a85	*84	69	29	3.8	70	13
19	5.3	50	b120	118	b42	a90	71	*59	20	3.6	34	85
20	4.9	38	b100	142	b40	a95	61	a75	17	3.2	22	59
21	4.6	32	b450	122	41	a115	53	a110	13	3.5	25	30
22	4.6	31	241	85	37	a150	*50	a80	14	4.1	99	20
23	5.2	32	124	367	b34	a170	47	a65	15	3.2	39	17
24	5.4	69	90	145	b33	a150	42	a55	12	2.7	24	16
25	43	58	74	94	b33	a130	73	a150	9.4	2.3	*16	15
26	21	74	70	346	*b33	a130	174	a220	7.6	2.1	12	13
27	13	73	b60	351	b32	a140	158	a110	6.7	2.0	10	11
28	10	46	b50	234	b32	a110	316	a70	6.0	2.0	8.8	10
29	11	39	b54	147	32	90	206	a65	9.8	1.9	8.1	9.1
30	8.8	38	64	b100	-	77	124	a65	12	1.8	7.6	8.4
31	8.8	-	81	b85	-	71	-	a53	-	1.6	7.4	-
Total	357.9	2,038	2,725	3,620	1,763	3,196	3,637	2,617	1,949.5	302.8	1,022.0	894.9
Mean	11.5	67.9	87.9	117	60.8	103	121	84.4	65.0	9.77	33.0	29.8
Cfsm	0.479	2.83	3.66	4.88	2.53	4.29	5.04	3.52	2.71	0.407	1.38	1.24
In.	0.55	3.16	4.22	5.63	2.73	4.95	5.62	4.06	3.02	0.47	1.59	1.38
Calendar year 1951: Max	560				Min 1.6	Mean 56.0	Cfsm 2.33	In. 31.65				
Water year 1951-52: Max	530				Min 1.5	Mean 65.9	Cfsm 2.75	In. 37.38				

Peak discharge (base, 650 cfs).--Dec. 21 (10:30 a.m.) 680 cfs (5.88 ft); Apr. 5 (5 p.m.) 700 cfs (5.95 ft); May 12 (6 a.m.) 660 cfs (5.83 ft); June 1 (time unknown) 800 cfs (6.20 ft); Aug. 16 (9 p.m.) 800 cfs (6.47 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

## Naugatuck River near Naugatuck, Conn.

Location.--Lat 41°28'15", long. 73°03'10", on left bank 0.2 mile upstream from Beacon Hill Brook, 1.3 miles downstream from Naugatuck, New Haven County, and at mile 12.4.

Drainage area.--246 sq mi.

Records available.--June 1918 to September 1924, September 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 155.17 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--30 years (1918-24, 1928-52), 457 cfs (adjusted for storage and diversion).

Extremes.--Maximum discharge during year, 7,880 cfs June 1 (gage height, 6.96 ft); minimum, 68 cfs Oct. 7 (gage height, 0.30 ft); minimum daily, 89 cfs Oct. 21.

1918-24, 1928-52: Maximum discharge, 28,500 cfs Dec. 31, 1948 (gage height, 12.40 ft), from rating curve extended above 9,000 cfs on basis of slope-area determinations at gage heights 7.56 and 12.4 ft; minimum, 24 cfs Oct. 21, 1935; minimum daily, 40 cfs Oct. 5, 12, 1930, Sept. 7, 1936; minimum gage height, 0.14 ft July 17, 1939.

Flood of November 1927 reached a stage of 14 ft (discharge, about 26,000 cfs).  
Remarks.--Records excellent. Flow regulated by plants above station during low stages, and by Morris, Wigwam, and Pitch Reservoirs having a combined capacity of 550,000,000 cu ft (see p. 322). Flow increased by diversion from Shepaug Reservoir into Naugatuck River basin.

Revisions (water years).--W 781: Drainage area. W 1171: 1918-24, 1928-49. W 1301: 1918-24; 1928-35 (figures of adjusted monthly and yearly discharge and runoff).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Dec. 5, June 1)

Oct. 1 to Dec. 5,  
June 1 to Sept. 30

Dec. 6 to June 1

0.4	85	2.0	700	1.2	335	3.0	1,640
.6	125	3.0	1,450	1.5	470	4.0	2,800
1.0	235	4.0	2,500	2.0	780	5.7	5,520
1.5	430	5.9	5,440				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	304	385	850	950	384	745	1,070	5,340	181	129	948
2	112	382	390	1,070	1,110	351	1,020	898	4,460	159	102	1,560
3	114	1,500	394	1,110	1,150	367	1,070	787	1,780	139	100	626
4	112	1,390	373	829	1,540	351	815	696	1,230	114	110	408
5	110	668	1,020	752	1,540	526	3,190	640	1,360	132	133	298
6	93	475	1,730	675	1,150	485	3,600	604	960	130	370	242
7	115	1,330	980	598	946	445	1,690	592	925	117	411	204
8	605	1,990	766	510	815	398	1,260	544	700	112	213	195
9	228	866	731	526	794	384	1,070	465	612	132	162	187
10	154	596	794	526	710	411	930	416	525	1,360	362	178
11	194	495	628	490	794	3,270	829	495	465	1,050	344	170
12	313	430	556	455	790	4,210	710	2,770	408	393	336	162
13	198	394	500	440	540	2,240	661	1,430	357	256	513	147
14	142	416	*416	490	490	1,640	1,890	970	313	201	260	130
15	159	869	460	668	450	1,220	1,900	866	291	172	192	152
16	159	779	406	1,030	430	1,040	2,000	794	280	159	675	187
17	135	1,030	359	780	515	906	1,220	550	332	144	2,040	170
18	127	700	629	1,560	592	866	*1,000	628	445	157	594	154
19	125	650	1,280	1,220	532	1,010	826	598	325	121	145	378
20	106	455	801	1,240	490	1,140	745	654	284	117	260	447
21	89	*385	4,320	1,300	485	1,400	661	1,070	232	154	320	274
22	104	345	2,670	885	485	1,740	598	801	242	165	740	220
23	117	363	1,400	3,190	435	1,740	580	592	260	132	360	195
24	127	578	1,080	*1,590	411	1,740	538	495	232	125	242	190
25	465	535	866	966	411	1,400	738	1,120	210	112	213	178
26	373	745	914	2,650	411	1,260	1,690	2,200	192	104	192	167
27	222	760	766	3,580	406	*1,260	1,590	1,110	236	93	172	149
28	149	475	586	2,420	323	1,090	2,800	759	172	121	167	135
29	157	426	610	1,690	406	914	2,260	852	200	112	159	142
30	152	398	675	1,120	-	801	1,440	922	246	*102	144	147
31	144	-	866	920	-	759	-	717	-	100	132	-
Total	5,442	20,699	28,504	36,150	20,131	35,741	40,076	27,105	23,614	6,646	10,492	8,740
Mean	176	690	919	1,168	694	1,153	1,336	874	787	214	338	291
(+)	-10.5	+16.1	+0.8	0	-6.5	+2.2	+5.4	+0.5	-11.9	-15.3	-6.7	-4.1

Adjusted for diversion and change in reservoir contents

Mean	165	706	920	1,166	767	1,136	1,399	875	775	198	331	287
Cfs/m	0.671	2.87	3.74	4.74	2.79	4.70	5.44	3.56	3.15	0.805	1.35	1.17
In.	0.77	3.20	4.31	5.46	3.01	5.47	5.97	4.10	3.51	0.93	1.56	1.30

Observed

Adjusted

Calendar year 1951:	Max	6,740	Min	80	Mean	619	Mean	613	Cfs/m	2.49	In.	35.84
Water year 1951-52:	Max	5,340	Min	89	Mean	720	Mean	717	Cfs/m	2.91	In.	39.64

Peak discharge (base, 4,000 cfs).--Dec. 21 (11 a.m.) 6,300 cfs (6.13 ft); Jan. 23 (8 a.m.) 4,450 cfs (5.08 ft); Jan. 26 (6 p.m.) 4,620 cfs (5.19 ft); Mar. 11 (3 p.m.) 6,710 cfs (6.33 ft); Apr. 5 (8 p.m.) 6,710 cfs (6.34 ft); June 1 (12 p.m.) 7,880 cfs (6.96 ft); Aug. 17 (12:30 a.m.) 4,650 cfs (5.55 ft).

\* Discharge measurement made on this day.

+ Diversion from Shepaug Reservoir and change in contents in Wigwam, Morris and Pitch Reservoirs, equivalent in cubic feet per second; furnished by city of Waterbury.

## Reservoirs in Housatonic River basin

Shepaug Reservoir on Shepaug River, lat 41°43'24", long. 73°17'37", 1 mile north of Woodville, Litchfield County, Conn. Drainage area, 38.0 sq mi. Completed in 1933 for storage of water for municipal supply. Usable capacity, 77,000,000 cu ft. Records available, February 1933 to September 1952. Records furnished by Bureau of Engineering, city of Waterbury, Conn.

Lake Zoar on Housatonic River, lat 41°23'05", long. 73°09'55", at Stevenson, Fairfield County, Conn. Drainage area, 1,545 sq mi. Completed in 1919 for storage of water for power. Usable capacity, 331,000,000 cu ft. Records available, August 1928 to September 1952. Records furnished by The Connecticut Light & Power Co.

Lake Candlewood (Rocky River Reservoir) on Rocky River, lat 41°35'00", long. 73°26'00", 2 miles west of New Milford, Litchfield County, Conn. Drainage area, 40.4 sq mi. Completed in 1928 for storage of water for power; impounds water pumped from the Housatonic River during off-peak power periods. Usable capacity, 6,210,000,000 cu ft. Records available, August 1928 to September 1952. Records furnished by The Connecticut Light & Power Co.

Pitch, Morris, and Wigwam Reservoirs on Branch Brook, are operated as a unit with Shepaug Reservoir for storage of water for municipal supply. The downstream order and capacity of each is as follows: Pitch Reservoir, lat 41°41'34", long. 73°09'04", 4 miles northwest of Thomaston, Litchfield County, Conn. Drainage area, 5.74 sq mi. Completed in 1943. Total capacity, 190,000,000 cu ft. Records available November 1943 to September 1952. Morris Reservoir, lat 41°40'29", long. 73°08'39", 3½ miles west of Thomaston, Litchfield County, Conn. Drainage area, including Pitch Reservoir, drainage area, 13.3 sq mi. Completed in 1913. Total capacity, 265,000,000 cu ft. Records available, May 1918 to September 1924, September 1928 to September 1952. Wigwam Reservoir, lat 41°39'50", long. 73°07'41", 3 miles west of Thomaston, Litchfield County, Conn. Drainage area, including Pitch and Morris Reservoirs, 18.1 sq mi. Total capacity, 97,000,000 cu ft. Records available, May 1918 to September 1924, September 1928 to September 1952. Records furnished by Bureau of Engineering, city of Waterbury, Conn.

Monthly contents, water year October 1951 to September 1952

Date	Shepaug Reservoir		Lake Zoar		Lake Candlewood (Rocky River Reservoir)	
	Contents (mcf)	Change in contents during month (equivalent in cfs)	Contents (mcf)	Change in contents during month (equivalent in cfs)	Contents (mcf)	Change in contents during month (equivalent in cfs)
Sept. 30.....	39.0	-	317.0	-	5,678	-
Oct. 31.....	52.5	+5.0	226.9	-33.6	5,721	+16
Nov. 30.....	97.8	+17.5	226.9	0	6,089	+142
Dec. 31.....	98.8	+4	253.5	+9.9	6,189	+30
Calendar year 1951	-	0	-	+2.8	-	+3
Jan. 31.....	98.9	0	344.7	+34.0	6,057	-42
Feb. 29.....	97.3	-6	287.0	-31.0	5,883	-69
Mar. 31.....	99.2	+7	253.5	-5.0	6,161	+104
Apr. 30.....	100.1	+3	358.6	+40.5	6,205	+17
May 31.....	98.5	-6	183.2	-65.5	6,205	0
June 30.....	96.1	-9	271.6	+34.1	5,962	-94
July 31.....	80.5	-2.1	289.6	+6.7	5,815	-55
Aug. 31.....	91.7	+5	298.7	+3.4	6,084	+100
Sept. 30.....	95.2	+1.4	287.0	-12.2	5,731	-136
Water year 1951-52	-	+1.8	-	-1.6	-	+2

Date	Pitch, Morris, and Wigwam Reservoirs					
	Contents (mcf)	Change in contents during month (equivalent in cfs)				
Sept. 30.....	508.6	0				
Oct. 31.....	507.5	-4				
Nov. 30.....	552.0	+17.2				
Dec. 31.....	554.2	+8				
Calendar year 1951	-	+1				
Jan. 31.....	554.1	0				
Feb. 29.....	537.8	-6.5				
Mar. 31.....	545.2	+2.8				
Apr. 30.....	554.1	+3.4				
May 31.....	555.5	+5				
June 30.....	534.6	-8.1				
July 31.....	534.6	0				
Aug. 31.....	550.9	+6.1				
Sept. 30.....	545.7	-2.0				
Water year 1951-52	-	+1.2				

## Saugatuck River near Westport, Conn.

Location.--Lat 41°10'15", long. 72°22'00", on left bank on old Ford Road (Clinton Avenue), 400 ft downstream from West Branch, 600 ft downstream from Aspetuck River and dam of Dorr Co., 2 miles north of Westport, Fairfield County, and  $5\frac{1}{2}$  miles upstream from mouth.

Drainage area.--77.5 sq mi.

Records available.--September 1932 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 18.16 ft above mean sea level, datum of 1929.

Average discharge.--20 years, 142 cfs (adjusted for storage and diversion from Saugatuck Reservoir since October 1941).

Extremes.--Maximum discharge during year, 2,740 cfs Mar. 11 (gage height, 8.32 ft); minimum, 12 cfs Oct. 1-6 (gage height, 2.31 ft); minimum daily, 12 cfs Oct. 1-6.

1932-52: Maximum discharge, 5,310 cfs Mar. 12, 1936 (gage height, 11.30 ft), from rating curve extended above 1,700 cfs, verified by computation of flow over dam for flood of September 1938 (gage height, 10.28 ft); minimum, 0.3 cfs Aug. 13, 1935; minimum gage height, 1.97 ft Oct. 18, 1950; minimum daily discharge, 1.0 cfs Aug. 11, 1939.

Remarks.--Records excellent. Flow regulated by storage and diversion at Saugatuck Reservoir (total capacity 11,900,000 gal) and Aspetuck Reservoir. At Aspetuck Reservoir, Bridgeport Hydraulic Co. diverts an indeterminable amount of water for domestic supply from about 17 sq mi of Saugatuck River basin through Hemlocks Reservoir in Mill River basin. Infrequent regulation at dam of Dorr Co.

Revisions (water years).--W 781: Drainage area. W 1201: 1935.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 1

Nov. 1 to Sept. 30

2.3	11	2.3	11	4.0	310
2.5	26	2.6	33	5.0	670
2.9	75	2.9	66	6.0	1,160
		3.3	134	6.9	1,720

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	51	49	250	289	118	168	349	975	20	15	106
2	12	51	49	245	319	110	163	286	1,660	20	18	250
3	12	202	50	310	343	103	156	248	419	19	17	154
4	12	265	45	286	500	96	141	222	550	20	17	101
5	12	147	132	310	530	132	655	195	570	26	16	76
6	12	80	364	310	391	178	1,220	170	408	20	19	61
7	20	198	325	245	316	156	690	163	331	19	29	52
8	20	295	260	166	270	154	492	154	250	18	24	42
9	21	170	239	145	250	128	394	118	220	24	21	37
10	20	112	198	163	222	132	331	107	195	268	78	33
11	26	93	166	156	*240	1,050	289	130	158	451	58	31
12	40	80	147	128	230	1,650	248	510	116	198	46	31
13	29	65	*128	128	b155	845	235	370	94	100	206	30
14	24	*66	107	141	b130	610	509	245	77	60	86	28
15	20	105	166	166	b110	461	510	192	72	36	42	27
16	18	107	130	188	110	388	*408	175	66	27	80	36
17	18	124	103	166	204	325	307	130	58	24	268	31
18	18	100	186	258	245	*275	260	168	58	22	175	27
19	17	80	475	240	182	310	225	161	49	22	98	38
20	17	65	319	240	156	433	210	166	53	20	70	54
21	17	54	1,700	*230	154	458	180	*252	31	22	102	41
22	17	48	1,130	191	156	408	152	188	38	22	285	36
23	17	49	850	1,010	136	458	149	132	48	19	124	34
24	19	56	492	632	126	440	136	109	41	*17	74	32
25	36	62	402	394	124	361	172	279	38	17	60	31
26	30	109	416	646	114	307	334	468	31	16	49	27
27	24	105	349	822	112	268	422	289	24	17	43	29
28	25	66	258	670	103	258	668	192	23	20	368	24
29	26	56	238	530	110	215	630	175	22	18	39	22
30	28	51	240	b364	-	202	464	268	21	17	38	22
31	23	-	262	b504	-	180	-	242	-	16	36	-
Total	696	3,112	9,766	10,034	6,327	11,229	10,938	6,833	6,696	1,615	2,269	1,544
Mean	22.5	104	315	324	218	362	365	220	223	52.1	73.2	51.5
(+)	+8.9	+104.7	+16.4	+1.4	-3.1	+1.4	+2.3	+0.7	-4.5	+16.4	+19.9	-0.7

Adjusted for change in contents and diversion

Mean	31.2	209	331	325	215	363	367	221	218	68.5	93.1	50.8
Cfsm	0.403	2.70	4.27	4.19	2.77	4.68	4.74	2.85	2.81	0.884	1.20	0.655
In.	0.47	3.01	4.92	4.83	2.99	5.40	5.29	3.29	3.14	1.02	1.38	0.73

	Observed				Adjusted			
Calendar year 1951:	Max	2,380	Min	10	Mean	160	Mean	172
Water year 1951-52:	Max	1,700	Min	12	Mean	194	Mean	208
							Cfsm	2.22
							In.	30.05
							Cfsm	2.68
							In.	36.47

Peak discharge (base, 900 cfs).--Dec. 21 (2 p.m.) 2,350 cfs (7.64 ft); Jan. 23 (12 m.) 1,250 cfs (6.14 ft); Jan. 28 (11 p.m.) 965 cfs (5.64 ft); Mar. 11 (11 p.m.) 2,740 cfs (8.32 ft); Apr. 6 (1:30 a.m.) 1,650 cfs (6.80 ft); June 2 (2:30 a.m.) 2,280 cfs (7.70 ft).

\* Discharge measurement made on this day.

† Change in contents and diversion, equivalent in cubic feet per second, from Saugatuck Reservoir for domestic water supply. No adjustments made for Aspetuck Reservoir.

b Stage-discharge relation affected by ice.

Measurements of streamflow in the North Atlantic slope basins, Maine to Connecticut, made at points other than gaging stations are given in the following table:

Miscellaneous discharge measurements in the North Atlantic slope basins, Maine to Connecticut, during water year October 1951 to September 1952

Union River basin				
Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Nov. 8	Indian Camp Brook	West Branch Union River.	At Amherst, Maine.....	138
Dennys River basin				
Apr. 23	Dennys River....	Atlantic Ocean...	Dennysville Station, Maine.....	286
June 11	....do.....	....do.....	....do.....	284
July 5	....do.....	....do.....	....do.....	131
Aug. 6	....do.....	....do.....	....do.....	34.1
Androscoggin River basin				
Sept.30	Cathance River...	Androscoggin River.	Near Topsham, Maine.....	1.60
Menunketesuck River basin, Conn.				
Dec. 12	Killingworth Reservoir outlet.	Menunketesuck River.	Just below Killingworth Reservoir near Killingworth.	1.76
12	....do.....	....do.....	At Wood's Road bridge just above junction with Menunketesuck River, Killingworth.	2.57
12	Menunketesuck River.	Long Island Sound	Below confluence with Killingworth Reservoir outlet.	12.6
12	....do.....	....do.....	Just below Kelseytown Reservoir near Kelseytown.	15.3
July 16	....do.....	....do.....	Just above Kelseytown Reservoir.....	1.68
Aug. 29	....do.....	....do.....	....do.....	3.72



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